

High-Precision Solutions for

# MACHINING MINIATURE PARTS

1 + 1 > 2









1 + 1 > 2

*Welcome to the Powerhouse  
of Precision: Tungaloy + NTK,  
High-Precision Solutions for  
Machining Miniature Parts!*

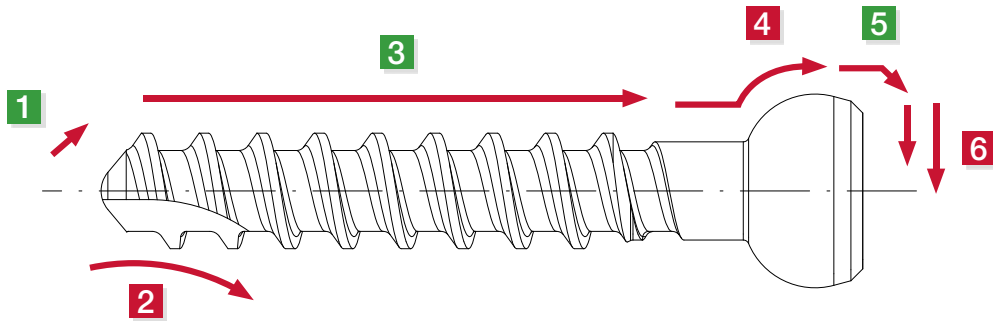
In the realm of machining excellence, precision reigns supreme. Tungaloy and NTK Tools form a union that transcends mere addition. It's an equation where  $1+1>2$ , showcasing that the whole is truly greater than the sum of its parts.

Together, we offer a comprehensive range of solutions designed to optimize performance, enhance efficiency, and elevate the quality of precision machining to unprecedented heights.

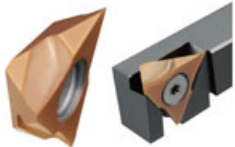
***With Tungaloy and NTK,  
precision isn't just a goal—it's a guarantee.***



## Tooling example for Bone Screw



### 1 Front Turning



#### The Front Max

Holder: TFTR1214H-OH2  
Insert: TFX3302MR DM4

### 4 Front Turning



#### MINI<sup>FORCE</sup> MODUM<sup>TURN</sup>

Holder: QC-1212X-CHP  
Head: QC12-JSDJ2XR07-CHP  
Insert: DXGU 220.5MFL JS SH725  
(DXGU070302MFL-JS SH725)

### 2 Shoulder Milling



#### TUNG<sup>FORCE</sup> REC

Holder: VER11AL006S05-S  
Holder: HPAV06M010S05R02  
Insert: AVGT060300PBER-MJ AH3225

### 5 Back Turning



#### TBP Series

Holder: TBPR12H-OH2  
Insert: TBP72FR10-BM TM4

### 3 Threading



#### Thread Whirling

Holder: TWC9C1040HP1  
Insert: TW5835-HA5.0-D12 ZM3

### 6 Parting off

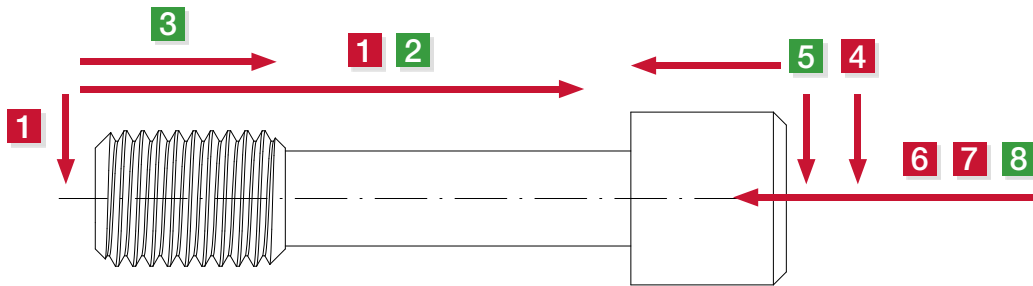


#### DUO<sup>CUT</sup>

Holder: JSXXL1212X09-CHP  
Insert: JXPS12L10F SH725



# Tooling example for Abutment Screw



**1** Front Turning

**SH7025**

Holder: JSCLCR0808H06  
Insert: CCGT21.50.5 FN-JS SH7025  
(CCGT060202FN-JS SH7025)



**5** Back Machining

**DS-ACH**

Holder: DS-SDUL16F-11-ACH  
Insert: DCGT32.504MYL DT4  
(DCGT11T301MYL DT4)



**2** Front Turning

**CSV Series**

Holder: CSVR08NC  
Insert: CSVF11FRVB VM1



**6** Spot Drilling

**TUNGMEISTER**

Holder: VER11AL006S05-S  
Insert: VCP080L07.7A45-02S05 AH725



**3** Threading

**CSV Series**

Holder: CSVR08NC  
Insert: CSVT11FRP60-035A VM1



**7** Drilling

**GIGAMINI DRILL  
DSM Series**

Drill: DSM0150G05 YH170



**4** Front Turning

**DUOFCUT**

Holder: JSXXR0808H05  
Insert: JVPN07R06F005-20 SH725



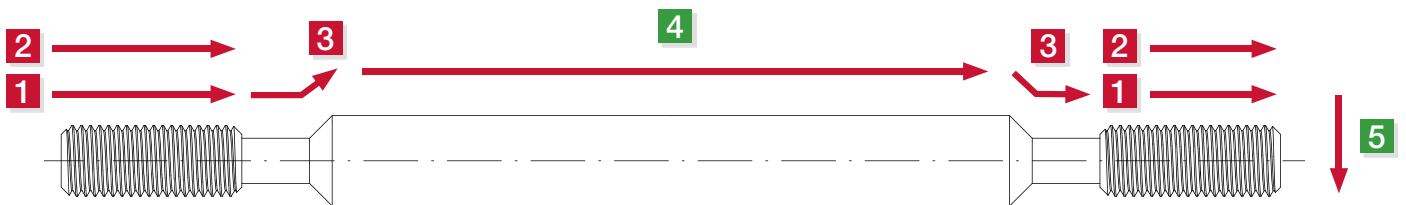
**8** Socket Machining

**Shaper Duo**

Sleeve: HY-NBH02016G-OH  
Insert bar: SSP020N1130H TM4



## Tooling example for Printer Shaft



### 1 Front Turning



#### MINIFURN MODUMTURN

Holder : QC-1212X-CHP  
Head : QC12-JSDJ2XR07-CHP  
Insert : DXGU 220.5MFL JS SH725  
(DXGU070302MFL-JS SH725)

### 2 Threading



#### TETRAMCUT MODUMTURN

Holder : QC-1212X-CHP  
Head : QC12-STCR18-CHP  
Insert : TCT18FR-60A-010 SH725

### 3 Front Turning



#### MINIFURN MODUMTURN

Holder : QC-1212X-CHP  
Head : QC12-JSDNXR07-CHP  
Insert : DXGU 220.5MFL JS SH725  
(DXGU070302MFL-JS SH725)

### 4 Front Turning with Vibration Cutting



#### TMV Chipbreaker

Holder : QC-1212X-CHP  
Holder : QC12-JSDJ2CR11-CHP  
Insert : DCGT32.504MRTMV TM4  
(DCGT11T301MRTMV TM4)

### 5 Parting off



#### GTP Series

Holder : CTPR12H-OH2  
Insert : CTP10FRN-CX



<b>Grade</b>	<b>1</b>
<b>Insert</b>	<b>2</b>
<b>External Toolholder</b>	<b>3</b>
<b>Internal Toolholder</b>	<b>4</b>
<b>Threading Tool</b>	<b>5</b>
<b>Parting, Grooving</b>	<b>6</b>
<b>Shaper</b>	<b>7</b>
<b>Endmill</b>	<b>8</b>
<b>Drilling Tool</b>	<b>9</b>
<b>Technical Reference</b>	<b>10</b>

Grade	<b>1</b>
Insert	<b>2</b>
Ext. Toolholder	<b>3</b>
Int. Toolholder	<b>4</b>
Threading	<b>5</b>
Grooving	<b>6</b>
Shaper	<b>7</b>
Endmill	<b>8</b>
Drilling Tool	<b>9</b>
Technical Reference	<b>10</b>

# 1. Grade

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# Grade

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Quick Guide

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Coated Grade / PVD

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Coated Grade / CVD

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Cermet

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Diamond Coating

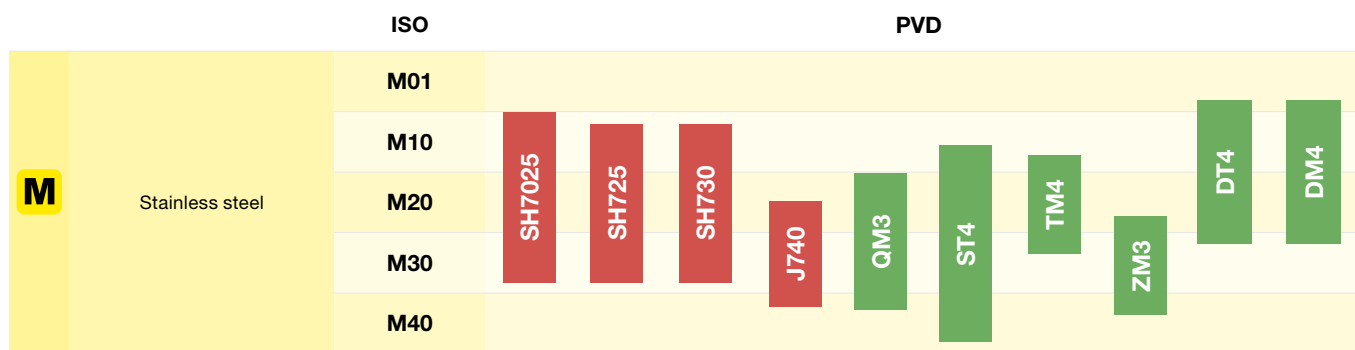
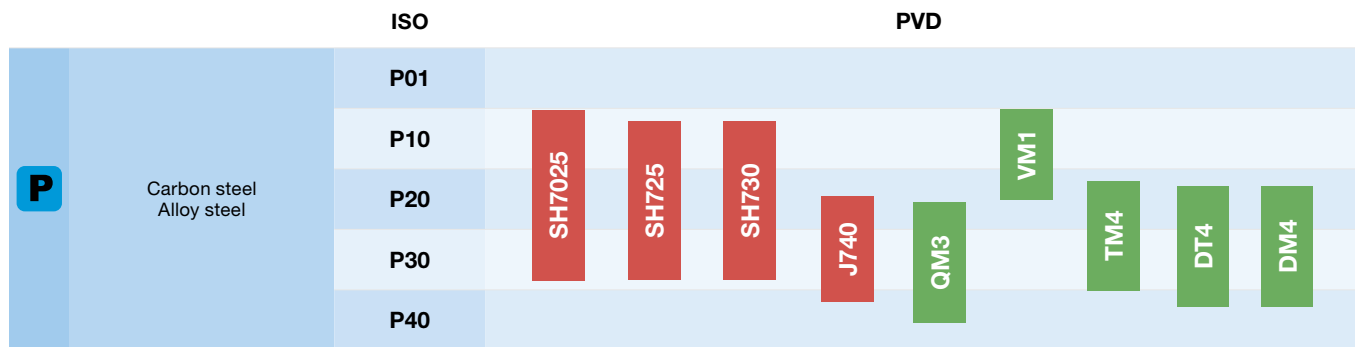
1-7

Cemented Carbide

1-7

# Grade - Quick Guide

## Grade selection



## Grade and Chipbreaker comparison chart

<b>P M</b>	Coated Carbide		Chipbreaker	
	05 - 15	15 - 25	Finish	Finish to Medium
<b>Tungaloy &amp; NTK</b>	SH7025 / SH725 ST4 / VM1 / DM4 / DT4	SH7025 / SH725 ST4 / QM3 / TM4 / ZM3 DM4 / DT4	JP / 01 AMX / AZ7	JS YL / AM3 / CL
<b>Sandvik</b>	GC1105 / GC1115	GC1125	UF	UM
<b>Kennametal</b>	KC5010 / KCU10	KC5025	FP	LF
<b>Seco</b>	CP200 / CP250	CP500	FF1	F1
<b>ARNO</b>	AL10 / AM5010	AL20 / AM5020 AM5025	AEC / ASF	PS / ACB / ALU
<b>Applitec</b>	TiALN / TiN / HTA	TiALN / TiN / HTA	FN-X8/17/25	ENP-X8/17/25
<b>Sumitomo</b>	AC1030U / AC520U / ACZ150	AC1030U	FC	SI SC
<b>Mitsubishi</b>	VP10RT / VP15TF / MC6015	VP15TF	FV / FP	LP / SV SMG
<b>Kyocera</b>	PR1705 / PR1725 PR1225 / PR930 / PR015S	PR1535	CF SKS	GF / GQ SK / CK
<b>ZCC-CT</b>	YBG102 / YBG202	YBG202	LH	USF
<b>Korloy</b>	PC8110 / PC5300	PC5300	FS	MS
<b>ISCAR</b>	IC908 / IC830 / IC1008 / IC1007	IC908 / IC830 / IC1008 / IC1007	PF	WF F1M-20P/12P
<b>TaeguTec</b>	TT4410	TT4430	SL-F	SM-F / SH-F

Note: The above table is selected from a publication. We have not obtained approval from each company.



# PVD - Coated Grade

Grade	Coating		Application	Feature
	Main composition	Thickness / $\mu\text{m}$		
<b>AH120</b>	(Ti, Al)N	3	<b>P M S</b>	- Good balance between wear and fracture resistance - Suitable for machining steel, stainless steel, and cast iron under general cutting conditions
<b>AH130</b>	(Ti, Al)N	3	<b>P M</b>	- High chipping and fracture resistance - Designed for machining austenitic stainless steel under general cutting conditions
<b>AH3225</b>	(Ti, Al)SiCrN	5	<b>P M</b>	- Good balance between wear and fracture resistance - Suitable for steel and stainless steel
<b>AH3135</b>	(Ti, Al)N	4	<b>P M</b>	- High fracture resistance - Suitable for machining steel and stainless steel under general cutting conditions
<b>AH6225</b>	(Ti, Al)N	6	<b>P M</b>	- First recommendation PVD grade for stainless steel machining - A versatile PVD grade for excellent performance in a wide range of stainless steel applications
<b>AH6030</b>	(Ti, Al)N	5	<b>M S</b>	- High fracture resistance - Suitable for drilling stainless steel and heat-resistant alloy under general cutting conditions
<b>AH6235</b>	(Ti, Al)N	6	<b>P M</b>	- Provides high reliability in interrupted cutting with large depths of cut
<b>AH710</b>	(Ti, Al)N	3	<b>P H</b>	- High wear resistance - Suitable for finishing cast iron and high-hardened steel
<b>AH7025</b>	(Ti, Al)N	3.5	<b>P M S</b>	- Excellent wear resistance and high rigidity - First recommendation for grooving of various materials
<b>AH725</b>	(Ti, Al)N	2	<b>P M S</b>	- Good balance between wear and chipping resistance - Suitable for machining steel and stainless steel under general cutting conditions
<b>AH750</b>	(Ti, Al)N	3	<b>H</b>	- High wear resistance - Designed for milling high-hardened material
<b>AH8005</b>	(Al,Ti)N	3.5	<b>M S H</b>	- Good resistance to wear and adhesion - Excellent performance in machining heat-resistant alloy at high speed
<b>AH8015</b>	(Al,Ti)N	3.5	<b>P M S H</b>	- Good balance between wear and fracture resistance - First recommendation for machining heat-resistant alloy under general cutting conditions - First recommendation for threading
<b>AH905</b>	(Al, Ti)N	1.5	<b>S</b>	- High resistance to wear and built-up edge
<b>AH9130</b>	(Ti, Al)SiCrN	4.5	<b>P M S</b>	- High wear resistance - Designed for drilling various materials
<b>AH9030</b>	(Ti, Al)N	5	<b>P</b>	- High wear resistance - Suitable for drilling steel and cast iron at high speed
<b>GH110</b>	Ti(C, N, O)	3	<b>P M N S</b>	- High wear resistance
<b>GH130</b>	Ti(C, N, O)	3	<b>P M</b>	- High chipping and fracture resistance - Suitable for steel, stainless steel, and cast iron
<b>GH330</b>	Ti(C, N, O)	3	<b>P M</b>	- High resistance to wear and fracture - Suitable for continuous to medium interrupted cutting
<b>GH730</b>	Ti(C, N, O)	3	<b>P M</b>	- High wear resistance - Suitable for turning and grooving at low speed
<b>J740</b>	TiN	1	For swiss lathes	- Ultra-fine-grain cemented carbide coated with TiN-based compound

Grade

Insert

Toolholder

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

# PVD - Coated Grade

Grade	Coating		Application	Feature
	Main composition	Thickness / $\mu\text{m}$		
<b>SH7025</b>	TiCN / (Ti,Al)N	2	<b>P M</b>	<ul style="list-style-type: none"> <li>- First recommendation for small part machining.</li> <li>- Superior surface quality and process security.</li> <li>- High wear resistance and excellent fracture resistance.</li> </ul>
<b>SH725</b>	(Ti, Al)N	2	<b>P M</b>	<ul style="list-style-type: none"> <li>- High wear resistance</li> <li>- Designed for machining steel and stainless steel</li> </ul>
<b>SH730</b>	(Ti, Al)N	1	<b>P M S</b>	<ul style="list-style-type: none"> <li>- High wear resistance</li> <li>- Designed for machining steel, stainless steel, and difficult-to-cut material</li> </ul>
<b>YH170</b>	Ti(C, N)	1.5	<b>P M</b>	<ul style="list-style-type: none"> <li>- High resistance to wear and fracture</li> <li>- Designed for drilling carbon steel and stainless steel</li> </ul>
<b>YH180</b>	Ti(C, N)	1.5	<b>P M</b>	<ul style="list-style-type: none"> <li>- High wear resistance</li> <li>- Designed for drilling carbon steel and stainless steel</li> </ul>
<b>NTK650</b>	TiAlN	3	<b>S</b>	<ul style="list-style-type: none"> <li>- Stable machining of [ Ni base alloys <math>\times</math> small diameter parts ] for all users</li> </ul>
<b>ST4</b>	CrAlN	2.5	<b>M</b>	<ul style="list-style-type: none"> <li>- First recommendation for stainless steel.</li> <li>- Higher hardness and oxidation resistance by unique coating technology</li> </ul>
<b>DM4</b>	TiAlN	3	<b>P M S</b>	<ul style="list-style-type: none"> <li>- Best oxidation resistance enables high temperature machining cutting such as parting and grooving.</li> </ul>
<b>DT4</b>	TiAlN	1	<b>P M S</b>	<ul style="list-style-type: none"> <li>- Combination of sharp cutting edge and excellent oxidation resistance</li> <li>- Best grade for difficult-to-cut materials / Titanium alloys</li> </ul>
<b>TM4</b>	TiN-TiCN	1.5	<b>P M N S</b>	<ul style="list-style-type: none"> <li>- Best grade for general purpose</li> <li>- Best combination of wear resistance, toughness and adhesion resistance</li> </ul>
<b>QM3</b>	TiCN	3	<b>P M</b>	<ul style="list-style-type: none"> <li>- Designed for machining carbon and alloy steels</li> <li>- High wear resistance</li> </ul>
<b>ZM3</b>	TiN	3	<b>P M N</b>	<ul style="list-style-type: none"> <li>- Excellent adhesion resistance</li> <li>- Suitable for high-precision machining of small diameter workpieces</li> </ul>
<b>VM1</b>	TiCN	1	<b>P</b>	<ul style="list-style-type: none"> <li>- First recommendation for free-cutting steel</li> <li>- Reducing the built up edge on the cutting edge</li> </ul>

# CVD - Coated Grade

Grade	Coating		Application	Feature
	Main composition	Thickness / $\mu\text{m}$		
<b>T9205</b>	Ti compound +Al <sub>2</sub> O <sub>3</sub>	18	<b>P</b>	- High wear resistance - Excellent performance in high-speed cutting
<b>T9215</b>	Ti compound +Al <sub>2</sub> O <sub>3</sub>	18	<b>P M</b>	- Well-balanced between wear and chipping resistance - First recommendation for steel - High versatility for a wide range of applications
<b>T9225</b>	Ti compound +Al <sub>2</sub> O <sub>3</sub>	18	<b>P M</b>	- First recommendation for roughing to medium cutting - High fracture resistance
<b>T9235</b>	Ti compound +Al <sub>2</sub> O <sub>3</sub>	18	<b>P</b>	- High fracture resistance in heavy interrupted cutting
<b>T6215</b>	TiCN-Al <sub>2</sub> O <sub>3</sub>	8	<b>P M</b>	- High wear resistance at medium to high speed machining - First recommendation CVD grade for stainless steel cutting
<b>T313V</b>	TiCN-Al <sub>2</sub> O <sub>3</sub>	3	Threading	- High resistance to plastic deformation

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9

Technical Reference

10

# Cermet

Grade	Coating		Application	Feature
	Main composition	Thickness / $\mu\text{m}$		
<b>NS520</b>	Uncoated	-	<b>P</b>	- High wear resistance
<b>NS9530</b>	Uncoated	-	<b>P</b>	- High fracture resistance - Suitable for finishing to medium cutting of steel
<b>AT9530</b>	(Ti,Al)N laminated coating	3	<b>P</b>	- High wear resistance - First recommendation for machining alloy steel
<b>GT9530</b>	Ti(C, N, O)	3	<b>P</b>	- High wear resistance - Excellent surface quality in finishing
<b>J9530</b>	TiN	1	For Swiss lathes	- Suitable for small-part machining

# CBN

Grade	Hardness (Hv)	T.R.S. (GPa)	Application	Feature
<b>BXA10</b>	3200 ~ 3400	1.00 ~ 1.10	<b>H</b>	- Coated CBN with excellent performance in continuous cutting with middle speed range for hardened steel
<b>BXM10</b>	2700 ~ 2900	0.80 ~ 0.90	<b>H</b>	- Coated CBN for excellent performance in high-speed continuous cutting of hardened steel
<b>BX310</b>	2700 ~ 2900	0.80 ~ 0.90	<b>H</b>	- High wear resistance - Designed for high-speed continuous cutting of hardened steel
<b>BXA20</b>	3300 ~ 3500	1.30 ~ 1.50	<b>H</b>	- Coated CBN for excellent performance in machining hardened steel
<b>BXM20</b>	3500 ~ 3700	1.35 ~ 1.50	<b>H</b>	- Coated CBN for machining hardened steel in a wide range of application area
<b>BX360</b>	3200 ~ 3400	1.00 ~ 1.10	<b>H</b>	- Suitable for general machining of hardened steel
<b>BR35F</b>	3100 ~ 3300	1.40 ~ 1.60	<b>H</b>	- Coated CBN with outstanding fracture resistance in heavy-interrupted machining of hardened steel
<b>BX330</b>	2800 ~ 3000	0.85 ~ 0.95	<b>H</b>	- Excellent sharpness - Designed for finishing hardened steel
<b>BX470</b>	4100 ~ 4300	1.90 ~ 2.10	Sintered metal	- Excellent sharpness - Suitable for ferrous sintered metal
<b>BX480</b>	4100 ~ 4300	1.90 ~ 2.10	Sintered metal	- Hardest CBN - Ideal for ferrous sintered metal - Suitable for high-speed face milling of cast iron
<b>BX815</b>	3000 ~ 3200	1.00 ~ 1.10	<b>S</b>	- High wear resistance and thermo stability - Suitable for high-speed machining of Inconel

# PCD

Grade	Grain size (µm)	Hardness (Hv)	T.R.S. (GPa)	Application	Feature
<b>DX110</b>	< 1	8500	1.8	<b>N</b>	- Excellent sharpness for high surface quality - Suitable for finishing non-ferrous metal and nonmetal
<b>DX120</b>	4.5	9000	1.8	<b>N</b>	- Suitable for finishing non-ferrous metal and nonmetal
<b>DX140</b>	12.5	10000	1.7	<b>N</b>	- High wear resistance - Designed for machining non-ferrous metal and nonmetal
<b>DX160</b>	28	11000	1.6	<b>N</b>	- Designed for machining ceramic, cemented carbide and nonmetal
<b>PD1</b>	10	9500	2.0	<b>N</b>	- Designed for non-ferrous metal
<b>PD2</b>	1	8500	2.1	<b>N</b>	- Improved sharpness and chipping resistance



# Diamond Coating

Grade	Coating		Application	Feature
	Component	Grain size(μm)		
UC1	Diamond Coating	0.1	N	- For Non-ferrous metal machining - Wear resistance is improved compared to PCD tools

# Cemented Carbide

Grade	Hardness (HRA)	T.R.S. (GPa)	Application
KS05F	93.0	2.9	S N
TH10	92.0	2.4	P M N
KS15F	91.5	3.0	N
UX30	91.1	2.3	P M
KM1	92.0	2.5	N

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

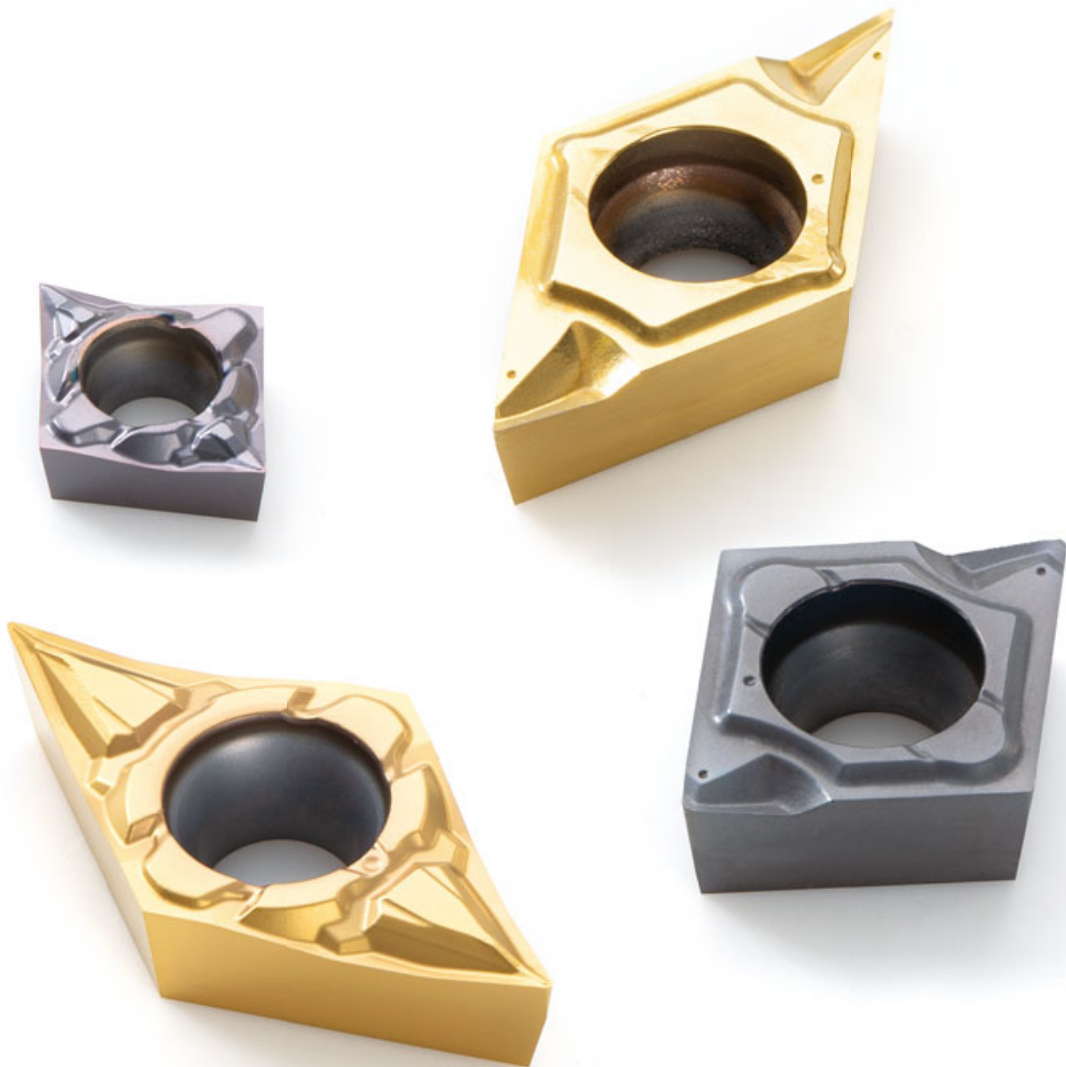
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Technical Reference

10

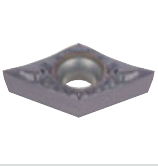
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# Insert

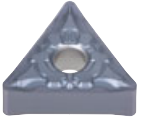
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## Positive type

Coated CVD/PVD, Cermet, Uncoated cemented carbide

2-11



## Negative type

Coated CVD/PVD, Cermet, Uncoated cemented carbide

2-60



## CBN / PCD Insert

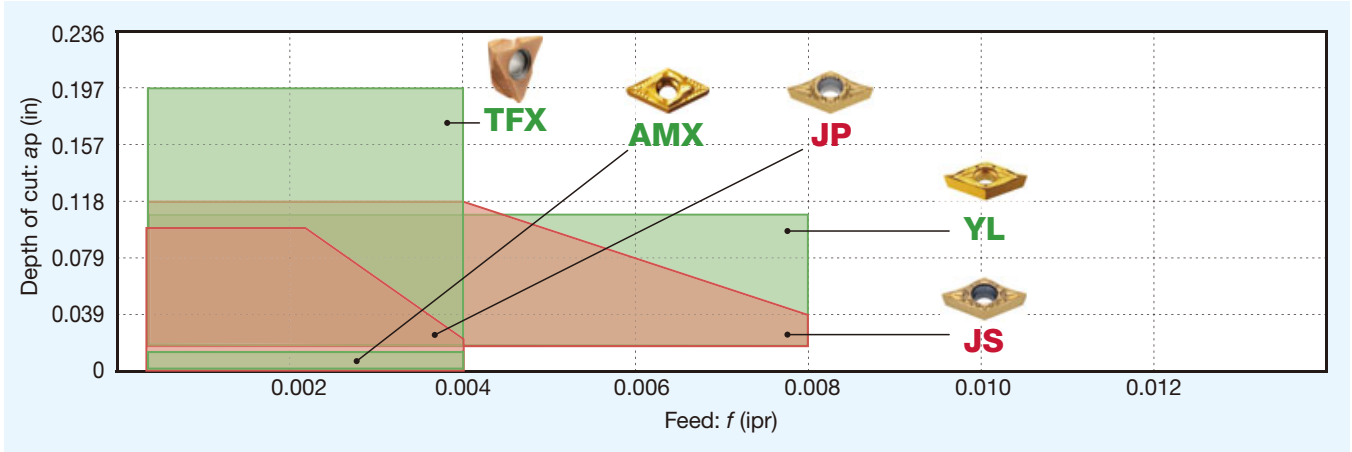
CBN, PCD

2-87

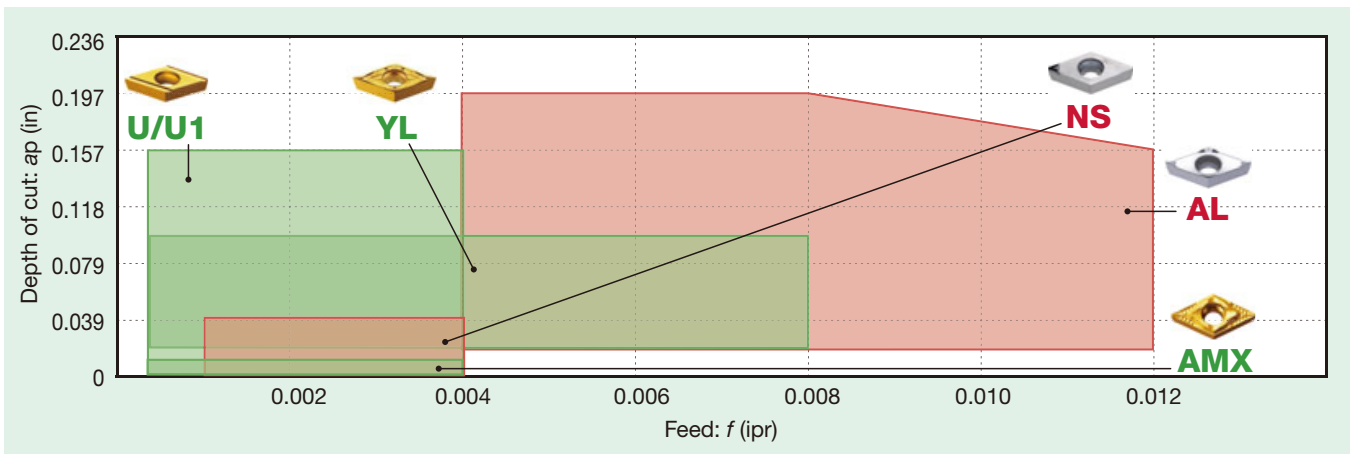
# Chipbreaker Guide

## Basic chipbreaker for Miniature machining

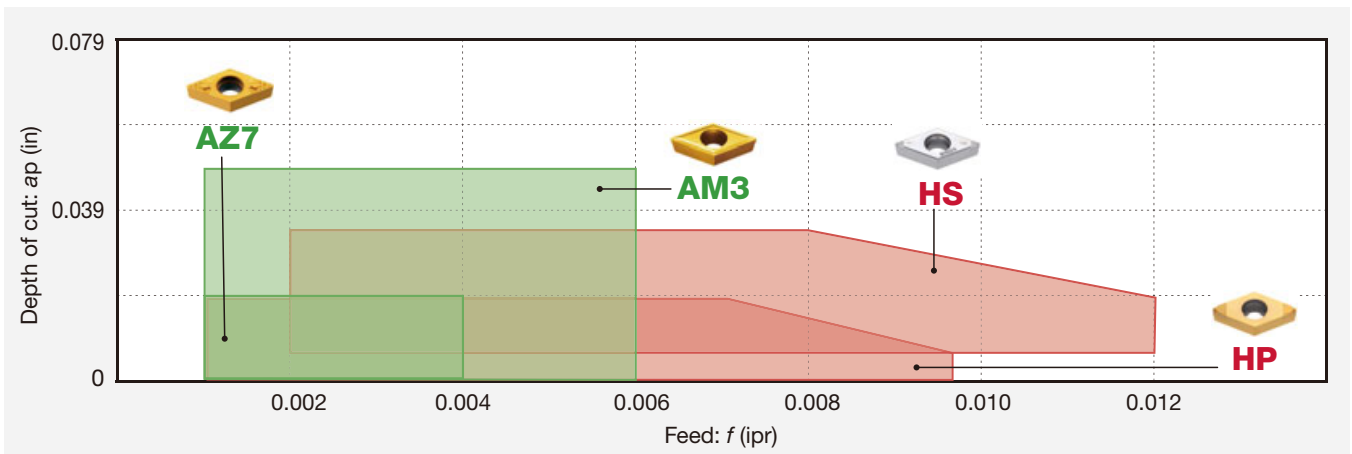
**P M S**



**N**



**H**

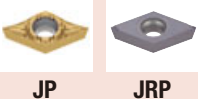

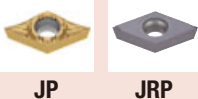

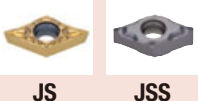

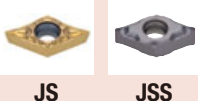

















# Selection System


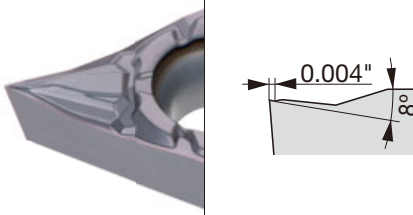
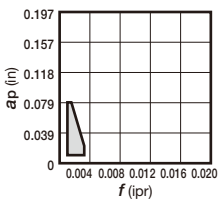

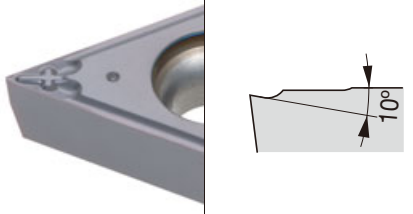
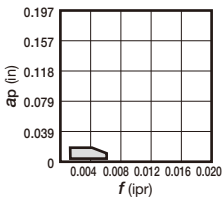

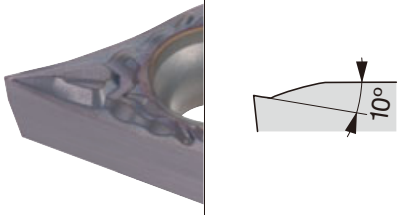
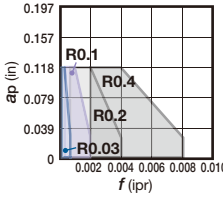

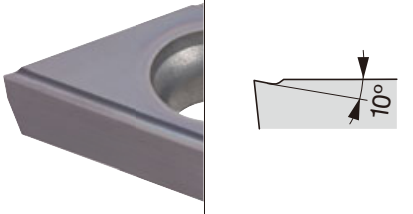
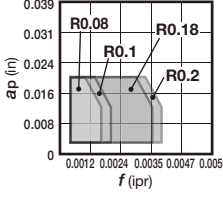

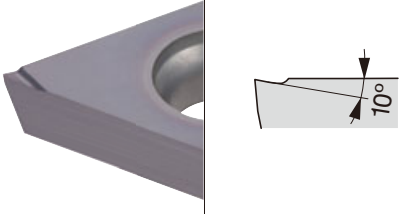
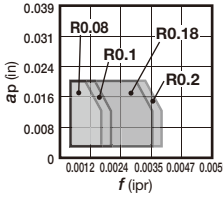

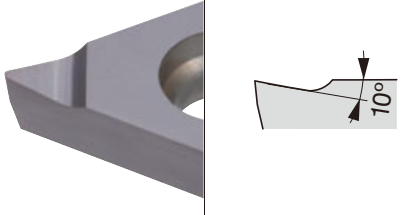
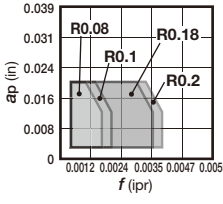

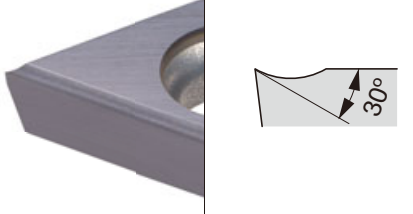
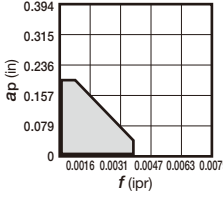

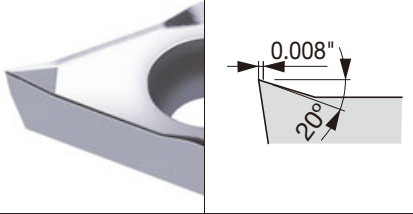
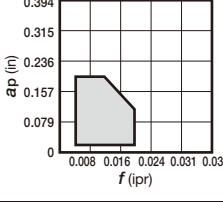
## Selection system for Miniature machining

**P M S**  Continuous  Interrupted



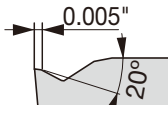
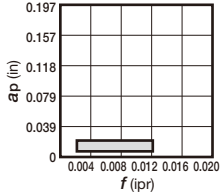


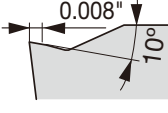
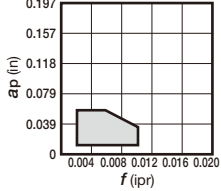

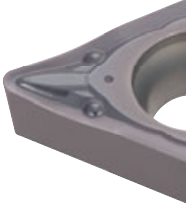
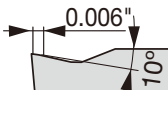
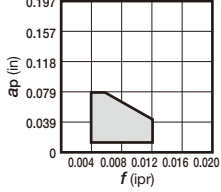


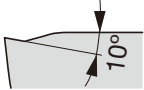
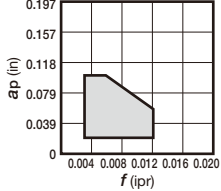


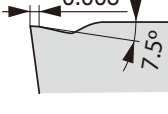
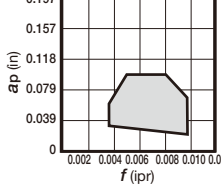


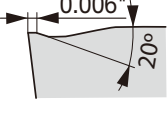
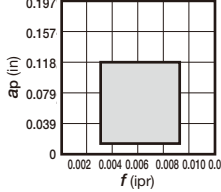

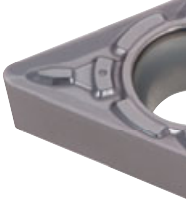
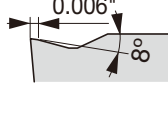
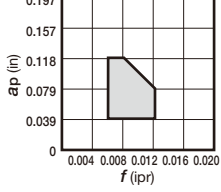
	Continuous	Interrupted
Precision finishing to Finishing [ap = ~ 0.020 in.]	 JP JRP  AMX YL KHG	 JP JRP  AM3 AZ7
	<p><b>P</b> SH7025 / SH725  <b>M</b> SH7025 / SH725  <b>S</b> SH7025 / SH725</p> <p><b>P</b> QM3  <b>M</b> ST4  <b>S</b> 650 / DT4</p>	<p><b>P</b> SH7025 / SH725  <b>M</b> SH7025 / SH725  <b>S</b> SH7025 / SH725</p> <p><b>P</b> QM3  <b>M</b> QM3  <b>S</b> 650 / DT4</p>
Light cutting (ap = 0.020 ~ 0.039 in.)	 JS JSS  YL	 JS JSS  AM3 AZ7
	<p><b>P</b> SH7025 / SH725  <b>M</b> SH7025 / SH725  <b>S</b> SH7025 / SH725</p> <p><b>P</b> QM3  <b>M</b> ST4  <b>S</b> 650 / DT4</p>	<p><b>P</b> SH7025 / SH725  <b>M</b> SH7025 / SH725  <b>S</b> SH7025 / SH725</p> <p><b>P</b> QM3  <b>M</b> QM3  <b>S</b> 650 / DT4</p>
Medium cutting (ap = 0.039 ~ 0.118 in.)	 JS JTS  YL CL TFX	 JS JTS  AM3 AZ7
	<p><b>P</b> SH7025 / SH725  <b>M</b> SH7025 / SH725  <b>S</b> SH7025 / SH725</p> <p><b>P</b> QM3  <b>M</b> ST4  <b>S</b> 650 / DT4</p>	<p><b>P</b> SH7025 / SH725  <b>M</b> SH7025 / SH725  <b>S</b> SH7025 / SH725</p> <p><b>P</b> QM3  <b>M</b> QM3  <b>S</b> 650 / DT4</p>
Light cutting (ap = ~ 0.039 in.)	 NS  AMX U/U1	 AL  AMX U/U1 YL
	<p><b>N</b> DX110</p> <p><b>N</b> TM4 / ZM3</p>	<p><b>N</b> KS05F</p> <p><b>N</b> TM4 / ZM3</p>
Light cutting (ap = ~ 0.039 in.)	 HP  YL	 HS  AM3 AZ7
	<p><b>H</b> BXA10</p> <p><b>H</b> DM4</p>	<p><b>H</b> BXA20</p> <p><b>H</b> QM3</p>

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

## Positive Inserts - Chipbreaker Overview

Application	Type	Chipbreaker design	Applicable range
 Precision finishing	<b>JP</b>		
 Precision finishing	<b>O1</b>		
 Finishing	<b>JS</b>		
 Precision finishing	<b>JPP</b>		
 Precision finishing	<b>JRP</b>		
 Precision finishing	<b>JSP</b>		
 Light cutting	<b>J10</b>		
 Light cutting	<b>AL</b>		

# Positive Inserts - Chipbreaker Overview



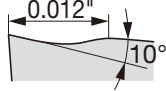
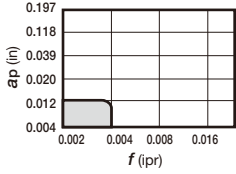


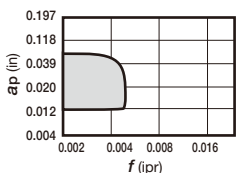
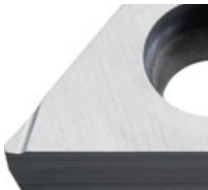
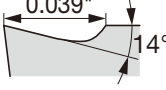
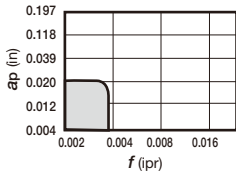

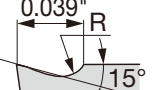
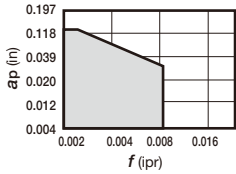



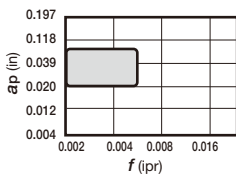

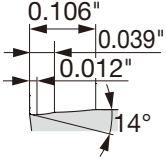
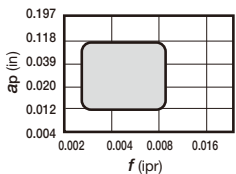

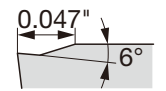
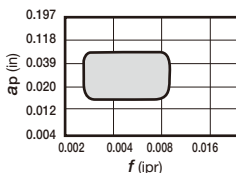


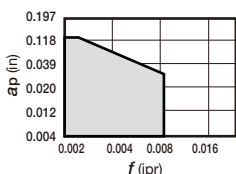
Application	Type	Chipbreaker design	Applicable range
 Finishing	<b>PSF</b>	 	
 Finishing	<b>PF</b>	 	
 Light cutting	<b>PSS</b>	 	
 Light cutting	<b>PS</b>	 	
 Light cutting	<b>TSF</b>	 	
 Light cutting	<b>TM</b>	 	
 Medium cutting	<b>PM</b>	 	

Grade 1  
 Insert 2  
 Ext. Toolholder 3  
 Int. Toolholder 4  
 Threading 5  
 Grooving 6  
 Shaper 7  
 Endmill 8  
 Drilling Tool 9  
 Technical Reference 10

## Double-sided positive inserts - Chipbreaker Overview

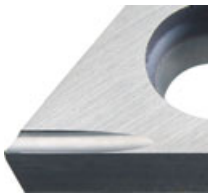
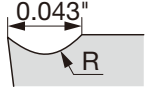
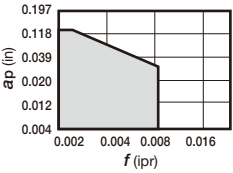
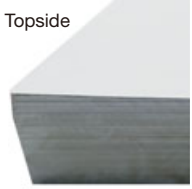


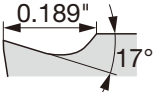
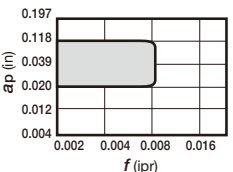

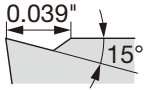
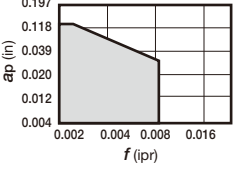

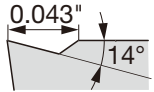
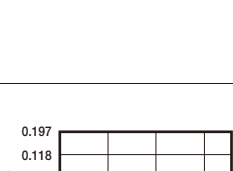

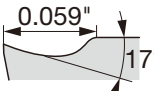
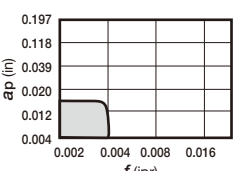
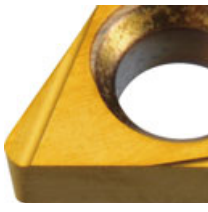

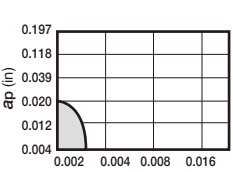
Application		Type	Chipbreaker design		Applicable range
	Precision finishing	<b>JSS</b>			
	Finishing	<b>JS</b>			
	Finishing	<b>JTS</b>			
	Finishing	<b>JRP</b>			
	Finishing	<b>SS</b>			
	Finishing	<b>TSW</b>			
	Finishing	<b>TS</b>			

# Positive Inserts - Chipbreaker Overview

Application	Type	Chipbreaker design	Applicable range
	Finishing	<b>AMX</b>  	
		<b>AZ7</b>  	
		<b>KHG</b>  	
		<b>AT</b>  	
	Light cutting	<b>TMV</b>  	
		<b>YL</b>  	
		<b>AM3</b>  	
		<b>U U1</b>  	

Grade 1  
 Insert 2  
 Ext. Toolholder 3  
 Int. Toolholder 4  
 Threading 5  
 Grooving 6  
 Shaper 7  
 Endmill 8  
 Drilling Tool 9  
 Technical Reference 10

## Positive Inserts - Chipbreaker Overview

Application	Type	Chipbreaker design		Applicable range		
PM NS	<b>UHG</b>					
		Light cutting	Topside  Flank side			
PM NS	<b>CL</b>					
		Medium cutting	<b>S</b>			
			<b>SX</b>			
PM NS	Internal Finishing	<b>FG</b>				
		<b>B1</b>				

# Positive Inserts - Chipbreaker Overview

Application	Type	Chipbreaker design	Applicable range	
	Internal Finishing	 		
	Internal Medium cutting	AM5	 	
		F1 F05	 	
		A A1	 	
		B2	 	
		B3	 	

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# Negative Inserts - Chipbreaker Overview

Application	Type	Chipbreaker design	Applicable range	
	Finishing	<b>D1</b>  		
	Light cutting	<b>UL</b>  		
			<b>TMV</b>  	
		<b>U2</b>  		
	Medium cutting	<b>ZP</b>  		













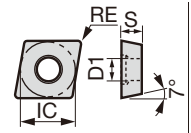
## Insert POSITIVE TYPE

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

**CC**

Rhombic, 80°  
with hole  
Positive 7°

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



Application	Chipbreaker	Designation		Coated										Coated cermet	Cermet	Dimension (in)				
		Inch	Metric	T9215	T9225	T6215	AH6225	AH6235	AH725	AH110	AH120	GH730	GH110	GT9530	NS9530	RE	IC	S		
Medium cutting		<b>PM</b>	CCMT 21.51 PM	CCMT060204-PM	●	●	●	●	●	●	●	●	●	●	●	●	0.016	0.250	0.094	
			CCMT 21.52 PM	CCMT060208-PM	●	●	●	●	●	●	●	●	●	●	●	●	●	0.031	0.250	0.094
			CCMT 32.51 PM	CCMT09T304-PM	●	●	●	●	●	●	●	●	●	●	●	●	●	0.016	0.375	0.156
			CCMT 32.52 PM	CCMT09T308-PM	●	●	●	●	●	●	●	●	●	●	●	●	●	0.031	0.375	0.156
			CCMT 32.53 PM	CCMT09T312-PM	●	●	●	●	●	●	●	●	●	●	●	●	●	0.047	0.375	0.156
			CCMT 432 PM	CCMT120408-PM			●	●	●	●								0.031	0.500	0.187
			CCMT 433 PM	CCMT120412-PM			●	●	●	●								0.047	0.500	0.187
		<b>24</b>	CCMT 21.50.5-24	CCMT060202-24		●									●		0.008	0.250	0.094	
			CCMT 21.51-24	CCMT060204-24	●	●					●				●		0.016	0.250	0.094	
			CCMT 21.52-24	CCMT060208-24	●	●	●				●				●		0.031	0.250	0.094	
			CCMT 32.50.5-24	CCMT09T302-24		●									●		0.008	0.375	0.156	
			CCMT 32.51-24	CCMT09T304-24	●	●					●				●		0.016	0.375	0.156	
			CCMT 32.52-24	CCMT09T308-24	●	●	●				●				●		0.031	0.375	0.156	
	CCMT 432-24	CCMT120408-24	●	●					●				●		0.031	0.500	0.187			

● : Line up



# Insert POSITIVE TYPE

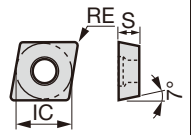
● : Continuous cutting  
 ● : Light interrupted cutting  
 ✱ : Heavy interrupted cutting

# CC



**Rhombic, 80°  
with hole  
Positive 7°**

<b>P</b>	Steel					●	●	●	●											
<b>M</b>	Stainless	●	●			●	●		●											
<b>N</b>	Non-ferrous							●												
<b>S</b>	Superalloy					●														
<b>H</b>	Hard material					●	●													



Application	Chipbreaker	Designation		Coated						Dimension (in)			
				ST4	DT4	QM3	TM4	VM1	ZM3	RE	IC	S	
		Inch	Metric										
<b>AZ7</b>		CCGT21.501AZ7	CCGT060200AZ7			●				0.001	0.250	0.094	
		CCGT21.504MAZ7	CCGT060201MAZ7			●				0.003	0.250	0.094	
		CCGT21.508MAZ7	CCGT060202MAZ7			●					0.007	0.250	0.094
		CCGT32.501AZ7	CCGT09T300AZ7		●	●	●		●		0.001	0.375	0.156
		CCGT32.504MAZ7	CCGT09T301MAZ7		●	●	●		●		0.003	0.375	0.156
		CCGT32.508MAZ7	CCGT09T302MAZ7		●	●	●		●		0.007	0.375	0.156
		CCGT32.51MAZ7	CCGT09T304MAZ7		●	●	●		●		0.015	0.375	0.156
	<b>KHG</b>		CCET21.502RKHG	CCET0602005RKHG						●	0.002	0.250	0.094
			CCET21.502LKHG	CCET0602005LKHG						●	0.002	0.250	0.094
			CCET21.503RKHG	CCET0602008RKHG						●	0.003	0.250	0.094
			CCET21.503LKHG	CCET0602008LKHG						●	0.003	0.250	0.094
			CCET 21.507RKHG	CCET0602018RKHG						●	0.007	0.250	0.094
			CCET 21.507LKHG	CCET0602018LKHG						●	0.007	0.250	0.094
CCET 21.508RKHG			CCET060202RKHG						●	0.008	0.250	0.094	
CCET 21.508LKHG			CCET060202LKHG						●	0.008	0.250	0.094	
CCET32.502RKHG			CCET09T3005RKHG			●	●			0.002	0.375	0.156	
CCET32.502LKHG			CCET09T3005LKHG					●		0.002	0.375	0.156	
CCET32.503RKHG			CCET09T3008RKHG				●	●		0.003	0.375	0.156	
CCET32.503LKHG			CCET09T3008LKHG					●		0.003	0.375	0.156	
CCET32.507RKHG			CCET09T3018RKHG				●	●		0.007	0.375	0.156	
CCET32.507LKHG	CCET09T3018LKHG					●		0.007	0.375	0.156			
CCET32.508RKHG	CCET09T302RKHG				●	●		0.008	0.375	0.156			
CCET32.508LKHG	CCET09T302LKHG					●		0.008	0.375	0.156			
<b>F1</b>		CCGT21.504FRF1	CCGT060201FRF1	●		●	●			0.004	0.250	0.094	
		CCGT21.508FRF1	CCGT060202FRF1	●		●	●			0.008	0.250	0.094	
		CCGT21.51FRF1	CCGT060204FRF1	●		●	●			0.016	0.250	0.094	
		CCGT32.508FRF1	CCGT09T302FRF1	●		●	●			0.008	0.375	0.156	
		CCGT32.51FRF1	CCGT09T304FRF1	●		●	●			0.016	0.375	0.156	

● : Line up

Reference pages: External toolholder → 3-37 -, Internal toolholder → 4-14 -

Grade  
 1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 Insert  
 Ext. Toolholder  
 Int. Toolholder  
 Threading  
 Grooving  
 Shaper  
 Endmill  
 Drilling Tool  
 Technical Reference

# Insert POSITIVE TYPE

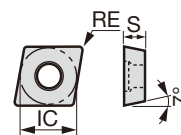
- : Continuous cutting
- ◐ : Light interrupted cutting
- ◑ : Heavy interrupted cutting

## CC



**Rhombic, 80°  
with hole  
Positive 7°**

Material	P	M	N	S	H	650	ST4	DM4	DT4	QM3	TM4	VM1	ZM3
Steel											●	●	●
Stainless		●	●	●							●	●	●
Non-ferrous			●								●	●	●
Superalloy				●							●	●	●
Hard material					●						●	●	●



Application	Chipbreaker	Designation		Coated										Dimension (in)				
				650	ST4	DM4	DT4	QM3	TM4	VM1	ZM3	RE	IC	S				
															Inch	Metric		
TMV		CCGT32.504MRTMV	CCGT09T301MRTMV	●	●	●					●			0.003	0.375	0.156		
		CCGT32.508MRTMV	CCGT09T302MRTMV	●	●	●					●				0.007	0.375	0.156	
		CCGT32.51MRTMV	CCGT09T304MRTMV	●	●	●					●				0.015	0.375	0.156	
YL		CCGT32.501YL	CCGT09T300YL				●			●				0.001	0.375	0.156		
		CCGT32.504MYL	CCGT09T301MYL	●	●	●	●	●	●	●				0.003	0.375	0.156		
		CCGT32.508MYL	CCGT09T302MYL	●	●	●	●	●	●	●	●				0.007	0.375	0.156	
		CCGT32.51MYL	CCGT09T304MYL	●	●	●	●	●	●	●	●				0.015	0.375	0.156	
		CCGT32.52MYL	CCGT09T308MYL		●	●	●	●	●	●	●				0.031	0.375	0.156	
U U1		CCGT21.501RU	CCGT060200RU				●					●		0.001	0.250	0.094		
		CCGT21.504RU	CCGT060201RU				●						●		0.004	0.250	0.094	
		CCGT21.504LU	CCGT060201LU											●		0.004	0.250	0.094
		CCGT21.508RU	CCGT060202RU				●							●		0.008	0.250	0.094
		CCGT21.508LU	CCGT060202LU											●		0.008	0.250	0.094
		CCGT32.501RU1	CCGT09T300RU1				●			●		●			0.001	0.375	0.156	
		CCGT32.501LU1	CCGT09T300LU1											●	0.001	0.375	0.156	
		CCGT32.504RU1	CCGT09T301RU1				●				●		●		0.004	0.375	0.156	
		CCGT32.504LU1	CCGT09T301LU1											●	0.004	0.375	0.156	
		CCGT32.508RU1	CCGT09T302RU1				●				●		●		0.008	0.375	0.156	
		CCGT32.508LU1	CCGT09T302LU1											●	0.008	0.375	0.156	
		CCGT32.51RU1	CCGT09T304RU1				●			●		●			0.016	0.375	0.156	
		CCGT32.51LU1	CCGT09T304LU1											●	0.016	0.375	0.156	
		AM3		CCGT21.501FNAM3	CCGT060200FNAM3				●			●	●			0.001	0.250	0.094
				CCGT21.504MFNAM3	CCGT060201MFNAM3	●		●	●	●						0.003	0.250	0.094
				CCGT21.508FNAM3	CCGT060202FNAM3										●	●	0.008	0.250
CCGT21.508MFNAM3	CCGT060202MFNAM3			●		●	●	●							0.007	0.250	0.094	
CCGT21.51FNAM3	CCGT060204FNAM3												●		0.016	0.250	0.094	
CCGT21.51MFNAM3	CCGT060204MFNAM3			●		●	●	●							0.015	0.250	0.094	
CCGT32.501FNAM3	CCGT09T300FNAM3						●				●	●			0.001	0.375	0.156	
CCGT32.504MFNAM3	CCGT09T301MFNAM3			●		●	●	●	●	●					0.003	0.375	0.156	
CCGT32.508FNAM3	CCGT09T302FNAM3										●	●			0.008	0.375	0.156	
CCGT32.508MFNAM3	CCGT09T302MFNAM3			●		●	●	●	●	●					0.007	0.375	0.156	
CCGT32.51FNAM3	CCGT09T304FNAM3										●	●			0.016	0.375	0.156	
CCGT32.51MFNAM3	CCGT09T304MFNAM3			●		●	●	●	●	●					0.015	0.375	0.156	
CCMT21.508FNAM3	CCMT060202FNAM3						●								0.008	0.250	0.094	
CCMT21.51FNAM3	CCMT060204FNAM3						●								0.016	0.250	0.094	
CCMT32.508FNAM3	CCMT09T302FNAM3				●				●				0.008	0.375	0.156			
CCMT32.51FNAM3	CCMT09T304FNAM3				●				●				0.016	0.375	0.156			
CCMT32.52FNAM3	CCMT09T308FNAM3				●								0.031	0.375	0.156			

● : Line up

Reference pages: External toolholder → [3-37](#) -, Internal toolholder → [4-14](#) -

















# Insert POSITIVE TYPE

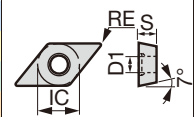
- : Continuous cutting
- ◐ : Light interrupted cutting
- ◑ : Heavy interrupted cutting

## DC

Rhombic, 55°  
with hole  
Positive 7°



Material	Coating	SH725	SH730																		
P Steel	●●●●	●●	●●																		
M Stainless	●●●●	●●	●●																		
N Non-ferrous																					
S Superalloy	●●																				
H Hard material																					



Application	Chipbreaker	Designation		Coated		Dimension (in)				
				SH725	SH730	RE	IC	S		
				Inch	Metric					
Application		JPP	DCET 21.5X MFR-JPP	DCET0702008MFR-JPP	●●	●●	<0.0031*	0.250	0.094	
			DCET 21.50 MFR-JPP	DCET070201MFR-JPP	●●	●●	<0.004*	0.250	0.094	
			DCET21.50.2 MFL-JPP	DCET070201MFL-JPP	●●	●●	<0.004*	0.250	0.094	
			DCET21.50.5 MFR-JPP	DCET070202MFR-JPP	●●	●●	<0.008*	0.250	0.094	
			DCET21.50.5 MFL-JPP	DCET070202MFL-JPP	●●	●●	<0.008*	0.250	0.094	
			DCET 32.5X MFR-JPP	DCET11T3008MFR-JPP	●●	●●	<0.0031*	0.375	0.156	
			DCET 32.50 MFR-JPP	DCET11T301MFR-JPP	●●	●●	<0.004*	0.375	0.156	
			DCET 32.50 MFL-JPP	DCET11T301MFL-JPP	●●	●●	<0.004*	0.375	0.156	
			DCET32.50.4 MFR-JPP	DCET11T3018MFR-JPP	●●	●●	<0.007*	0.375	0.156	
			DCET32.50.4 MFL-JPP	DCET11T3018MFL-JPP	●●	●●	<0.007*	0.375	0.156	
			DCET32.50.5 MFR-JPP	DCET11T302MFR-JPP	●●	●●	<0.008*	0.375	0.156	
			DCET32.50.5 MFL-JPP	DCET11T302MFL-JPP	●●	●●	<0.008*	0.375	0.156	
Finishing (sharp edge)		JRP	DCET 21.5X MFR-JRP	DCET0702008MFR-JRP	●●	●●	<0.0031*	0.250	0.094	
			DCET 21.50 MFR-JRP	DCET070201MFR-JRP	●●	●●	<0.004*	0.250	0.094	
			DCET 21.50 MFL-JRP	DCET070201MFL-JRP	●●	●●	<0.004*	0.250	0.094	
			DCET21.50.4 MFR-JRP	DCET0702018MFR-JRP	●●	●●	<0.007*	0.250	0.094	
			DCET21.50.4 MFL-JRP	DCET0702018MFL-JRP	●●	●●	<0.007*	0.250	0.094	
			DCET21.50.5 MFR-JRP	DCET070202MFR-JRP	●●	●●	<0.008*	0.250	0.094	
			DCET21.50.5 MFL-JRP	DCET070202MFL-JRP	●●	●●	<0.008*	0.250	0.094	
			DCET 32.5X MFR-JRP	DCET11T3008MFR-JRP	●●	●●	<0.0031*	0.375	0.156	
			DCET 32.50 MFR-JRP	DCET11T301MFR-JRP	●●	●●	<0.004*	0.375	0.156	
			DCET32.50.4 MFR-JRP	DCET11T3018MFR-JRP	●●	●●	<0.007*	0.375	0.156	
			DCET32.50.4 MFL-JRP	DCET11T3018MFL-JRP	●●	●●	<0.007*	0.375	0.156	
			DCET32.50.5 MFR-JRP	DCET11T302MFR-JRP	●●	●●	<0.008*	0.375	0.156	
			DCET32.50.5 MFL-JRP	DCET11T302MFL-JRP	●●	●●	<0.008*	0.375	0.156	
		JSP	DCET 21.5X MFN-JSP	DCET0702008MFN-JSP	●●	●●	<0.0031*	0.250	0.094	
			DCET 21.50 MFN-JSP	DCET070201MFN-JSP	●●	●●	<0.004*	0.250	0.094	
			DCET21.50.5 MFN-JSP	DCET070202MFN-JSP	●●	●●	<0.008*	0.250	0.094	
			DCET 32.5X MFN-JSP	DCET11T3008MFN-JSP	●●	●●	<0.0031*	0.375	0.156	
			DCET 32.50 MFN-JSP	DCET11T301MFN-JSP	●●	●●	<0.004*	0.375	0.156	
			DCET32.50.4 MFN-JSP	DCET11T3018MFN-JSP	●●	●●	<0.007*	0.375	0.156	
			DCET32.50.5 MFN-JSP	DCET11T302MFN-JSP	●●	●●	<0.008*	0.375	0.156	

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

● : Line up

Reference pages: External toolholder → 3-45 -, Internal toolholder → 4-18 -

Grade  
1

Insert  
2

Ext. Toolholder  
3

Int. Toolholder  
4

Threading  
5

Grooving  
6

Shaper  
7

Endmill  
8

Drilling Tool  
9

Technical Reference  
10

# Insert POSITIVE TYPE

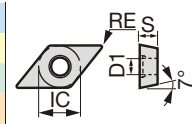
● : Continuous cutting  
 ◐ : Light interrupted cutting  
 ✱ : Heavy interrupted cutting

## DC



Rhombic, 55°  
with hole  
Positive 7°

	P Steel	M Stainless	N Non-ferrous	S Superalloy	H Hard material	T9215	T9225	T6215	AH8005	AH8015	AH6225	AH6235	AH905	AH725	AH120	GH730	GT9530	AT9530	NS9530	KS05F	TH10	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱



Application	Chipbreaker	Designation		Coated																Coated cermet	Cermet	Un-coated	Dimension (in)				
		Inch	Metric	T9215	T9225	T6215	AH8005	AH8015	AH6225	AH6235	AH905	AH725	AH120	GH730	GT9530	AT9530	NS9530	KS05F	TH10	RE	IC	S					
				DCMT 21.51 PSS	DCMT070204-PSS	●	●	●			●	●		●			●		●				0.016	0.250	0.094		
Finishing to medium cutting	<p>DCMT 21.52 PSS DCMT070208-PSS</p> <p>DCMT 32.51 PSS DCMT11T304-PSS</p> <p>DCMT 32.52 PSS DCMT11T308-PSS</p> <p>DCMT 32.53 PSS DCMT11T312-PSS</p>			●	●	●			●	●		●			●		●					0.031	0.250	0.094			
				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			0.016	0.375	0.156	
				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			0.031	0.375	0.156	
				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			0.047	0.375	0.156	
				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			0.008	0.250	0.094	
	Finishing to medium cutting	<p>DCMT 21.51 PS DCMT070204-PS</p> <p>DCMT 21.52 PS DCMT070208-PS</p> <p>DCMT 32.51 PS DCMT11T304-PS</p> <p>DCMT 32.52 PS DCMT11T308-PS</p> <p>DCMT 32.53 PS DCMT11T312-PS</p>			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			0.016	0.250	0.094	
					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			0.031	0.250	0.094
					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			0.008	0.375	0.156
					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			0.016	0.375	0.156
					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			0.031	0.375	0.156
Finishing to medium cutting		<p>DCMT 21.51 TM DCMT070204-TM</p> <p>DCMT 21.52 TM DCMT070208-TM</p> <p>DCMT 32.51 TM DCMT11T304-TM</p> <p>DCMT 32.52 TM DCMT11T308-TM</p>			●	●	●		●	●										●				0.016	0.250	0.094	
					●	●	●		●	●											●				0.031	0.250	0.094
					●	●	●		●	●											●				0.008	0.375	0.156
					●	●	●		●	●											●				0.016	0.375	0.156
					●	●	●		●	●											●				0.031	0.375	0.156
	Finishing to medium cutting	<p>DCMT 21.51 CM DCMT070204-CM</p> <p>DCMT 21.52 CM DCMT070208-CM</p> <p>DCMT 32.51 CM DCMT11T304-CM</p> <p>DCMT 32.52 CM DCMT11T308-CM</p> <p>DCMT 32.53 CM DCMT11T312-CM</p>																						0.016	0.250	0.094	
																									0.031	0.250	0.094
																									0.016	0.375	0.156
																									0.031	0.375	0.156
																									0.047	0.375	0.156
Finishing to medium cutting for non-ferrous alloys		<p>DCGT 21.51 AL DCGT070204-AL</p> <p>DCGT 32.51 AL DCGT11T304-AL</p> <p>DCGT 32.52 AL DCGT11T308-AL</p>																				●		0.008	0.250	0.094	
																							●		0.016	0.250	0.094
																							●		0.008	0.375	0.156
																							●		0.016	0.375	0.156
																							●		0.031	0.375	0.156
	Finishing to medium cutting	<p>DCGT 21.51 DCGT070204</p> <p>DCGT 32.51 DCGT11T304</p> <p>DCGT 32.52 DCGT11T308</p>																				●		0.008	0.250	0.094	
																							●		0.016	0.250	0.094
																							●		0.008	0.375	0.156
																							●		0.016	0.375	0.156
																							●		0.031	0.375	0.156
Finishing to medium cutting		<p>DCGT 21.51 R DCGT070204R</p> <p>DCGT 21.51 L DCGT070204L</p> <p>DCGT 32.51 R DCGT11T304R</p> <p>DCGT 32.51 L DCGT11T304L</p>																				●		0.008	0.250	0.094	
																							●		0.008	0.250	0.094
																							●		0.016	0.250	0.094
																							●		0.016	0.250	0.094
																							●		0.008	0.375	0.156

● : Line up

Reference pages: External toolholder → 3-45 -, Internal toolholder → 4-18 -



# Insert POSITIVE TYPE

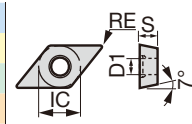
- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

## DC

Rhombic, 55°  
with hole  
Positive 7°



	P	M	N	S	H	T9215	T9225	T6215	AH6225	AH6235	AH725	AH110	AH120	GH730	GH110	GT9530	NS9530	TH10	
Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-ferrous	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Superalloy	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Hard material	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



Application	Chipbreaker	Designation		Coated												Coated cermet	Cermet	Uncoated	Dimension (in)			
		Inch	Metric	T9215	T9225	T6215	AH6225	AH6235	AH725	AH110	AH120	GH730	GH110	GT9530	NS9530	TH10	RE	IC	S			
Finishing to medium cutting		<b>23</b>	DCMT 21.51-23	DCMT070204-23													●		0.016	0.250	0.094	
			DCMT 32.51-23	DCMT11T304-23														●	0.016	0.375	0.156	
			DCMT 32.52-23	DCMT11T308-23														●	0.031	0.375	0.156	
Medium cutting		<b>PM</b>	DCMT 21.51 PM	DCMT070204-PM	●	●	●	●	●	●	●	●	●	●	●	●	●	●		0.016	0.250	0.094
			DCMT 21.52 PM	DCMT070208-PM	●	●	●	●	●	●	●	●	●	●	●	●	●	●		0.031	0.250	0.094
			DCMT 32.51 PM	DCMT11T304-PM	●	●	●	●	●	●	●	●	●	●	●	●	●	●		0.016	0.375	0.156
			DCMT 32.52 PM	DCMT11T308-PM	●	●	●	●	●	●	●	●	●	●	●	●	●	●		0.031	0.375	0.156
			DCMT 32.53 PM	DCMT11T312-PM		●	●	●	●	●										0.047	0.375	0.156
		<b>24</b>	DCMT 21.50.5-24	DCMT070202-24														●		0.008	0.250	0.094
			DCMT 21.51-24	DCMT070204-24	●	●							●				●	●		0.016	0.250	0.094
			DCMT 21.52-24	DCMT070208-24		●							●				●	●		0.031	0.250	0.094
			DCMT 32.50.5-24	DCMT11T302-24		●							●				●	●		0.008	0.375	0.156
Threading			DCMT 32.51-24	DCMT11T304-24	●	●						●				●	●		0.016	0.375	0.156	
			DCMT 32.52-24	DCMT11T308-24	●	●	●					●					●	●		0.031	0.375	0.156

● : Line up

Reference pages: External toolholder → 3-45 -, Internal toolholder → 4-18 -

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

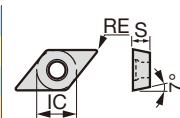
## Insert POSITIVE TYPE



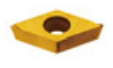
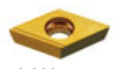
● : Continuous cutting  
 ● : Light interrupted cutting  
 ✱ : Heavy interrupted cutting

**DC**

Rhombic, 55°  
with hole  
Positive 7°

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



Application	Chipbreaker	Designation		Coated							Dimension (in)										
		Inch	Metric	ST4	DM4	DT4	QM3	TM4	VM1	ZM3	RE	IC	S								
Application	<b>AMX</b> 	DCGT21.504MAMX	DCGT070201MAMX	●	●	●		●									0.003	0.250	0.094		
		DCGT21.508MAMX	DCGT070202MAMX	●	●	●		●										0.007	0.250	0.094	
		DCGT21.51MAMX	DCGT070204MAMX		●	●		●										0.015	0.250	0.094	
		DCGT32.504MAMX	DCGT11T301MAMX	●	●	●		●										0.003	0.375	0.156	
		DCGT32.508MAMX	DCGT11T302MAMX	●	●	●		●										0.007	0.375	0.156	
		DCGT32.51MAMX	DCGT11T304MAMX	●	●	●		●										0.015	0.375	0.156	
	Application	<b>AZ7</b> 	DCGT21.501AZ7	DCGT070200AZ7					●										0.001	0.250	0.094
			DCGT21.504MAZ7	DCGT070201MAZ7					●										0.003	0.250	0.094
			DCGT21.508MAZ7	DCGT070202MAZ7					●										0.007	0.250	0.094
			DCGT32.501 AZ7	DCGT11T300AZ7		●	●	●		●									0.001	0.375	0.156
DCGT32.504MAZ7			DCGT11T301MAZ7		●	●	●		●									0.003	0.375	0.156	
DCGT32.508MAZ7			DCGT11T302MAZ7		●	●	●		●									0.007	0.375	0.156	
DCGT32.51MAZ7			DCGT11T304MAZ7		●	●	●		●									0.015	0.375	0.156	
DCGT32.52AZ7			DCGT11T308AZ7		●	●			●									0.031	0.375	0.156	
Finishing		<b>KHG</b> 	DCET21.502RKHG	DCET0702005RKHG								●							0.002	0.250	0.094
			DCET21.502LKHG	DCET0702005LKHG									●							0.002	0.250
	DCET21.503RKHG		DCET0702008RKHG									●							0.003	0.250	0.094
	DCET21.503LKHG		DCET0702008LKHG									●							0.003	0.250	0.094
	DCET21.507RKHG		DCET0702018RKHG									●							0.007	0.250	0.094
	DCET21.507LKHG		DCET0702018LKHG									●							0.007	0.250	0.094
	DCET21.508RKHG		DCET070202RKHG									●							0.008	0.250	0.094
	DCET21.508LKHG		DCET070202LKHG									●							0.008	0.250	0.094
	DCET32.502RKHG		DCET11T3005RKHG							●	●								0.002	0.375	0.156
	DCET32.502LKHG		DCET11T3005LKHG									●							0.002	0.375	0.156
DCET32.503RKHG	DCET11T3008RKHG								●	●								0.003	0.375	0.156	
DCET32.503LKHG	DCET11T3008LKHG										●							0.003	0.375	0.156	
DCET32.507RKHG	DCET11T3018RKHG								●	●								0.007	0.375	0.156	
DCET32.507LKHG	DCET11T3018LKHG										●							0.007	0.375	0.156	
DCET32.508RKHG	DCET11T302RKHG								●	●								0.008	0.375	0.156	
DCET32.508RKHG	DCET11T302LKHG										●							0.008	0.375	0.156	
Application	<b>AT</b> 		DCET32.504MRAT	DCET11T301MRAT								●							0.003	0.375	0.156
			DCET32.508MRAT	DCET11T302MRAT								●							0.007	0.375	0.156

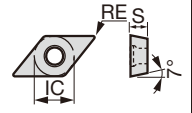
● : Line up

## DC



**Rhombic, 55°  
with hole  
Positive 7°**

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



Application	Chipbreaker	Designation		Coated								Diamond coated	Dimension (in)			
				650	ST4	DM4	DT4	QM3	TM4	VM1	ZM3	UC1	RE	IC	S	
		Inch	Metric													
 	<b>TMV</b>	DCGT32.504MRTMV	DCGT11T301MRTMV	●	●	●				●				0.003	0.375	0.156
		DCGT32.508MRTMV	DCGT11T302MRTMV	●	●	●				●				0.007	0.375	0.156
		DCGT32.51MRTMV	DCGT11T304MRTMV	●	●	●				●				0.015	0.375	0.156
		DCGT32.504MRTMV-WP	DCGT11T301MRTMV-WP	●	●	●				●				0.003	0.375	0.156
		DCGT32.508MRTMV-WP	DCGT11T302MRTMV-WP	●	●	●				●				0.007	0.375	0.156
 	<b>YL</b>	DCGT21.504MYL	DCGT070201MYL			●		●						0.003	0.250	0.094
		DCGT21.508MYL	DCGT070202MYL			●		●						0.007	0.250	0.094
		DCGT32.501YL	DCGT11T300YL					●		●				0.001	0.375	0.156
		DCGT32.504MYL	DCGT11T301MYL	●	●	●	●	●	●					0.003	0.375	0.156
		DCGT32.508MYL	DCGT11T302MYL	●	●	●	●	●	●					0.007	0.375	0.156
		DCGT32.51MYL	DCGT11T304MYL	●	●	●	●	●	●					0.015	0.375	0.156
 	<b>U U1</b>	DCGT21.501RU	DCGT070200RU								●	●		0.001	0.250	0.094
		DCGT21.504RU	DCGT070201RU								●	●		0.004	0.250	0.094
		DCGT21.508RU	DCGT070202RU								●	●		0.008	0.250	0.094
		DCGT21.508LU	DCGT070202LU									●		0.008	0.250	0.094
		DCGT32.501RU1	DCGT11T300RU1				●		●	●	●			0.001	0.375	0.156
		DCGT32.501LU1	DCGT11T300LU1									●		0.001	0.375	0.156
		DCGT32.504RU1	DCGT11T301RU1				●		●	●	●			0.004	0.375	0.156
		DCGT32.504LU1	DCGT11T301LU1									●		0.004	0.375	0.156
		DCGT32.508RU1	DCGT11T302RU1				●		●	●	●			0.008	0.375	0.156
		DCGT32.508LU1	DCGT11T302LU1									●		0.008	0.375	0.156
		DCGT32.51RU1	DCGT11T304RU1				●		●	●	●			0.016	0.375	0.156
		DCGT32.51LU1	DCGT11T304LU1									●		0.016	0.375	0.156
 	<b>AM3</b>	DCGT21.504FNAM3	DCGT070201FNAM3								●	●		0.004	0.250	0.094
		DCGT21.508FNAM3	DCGT070202FNAM3								●	●		0.008	0.250	0.094
		DCGT21.51FNAM3	DCGT070204FNAM3								●	●		0.016	0.250	0.094
		DCGT21.501FNAM3	DCGT070200FNAM3					●		●	●	●		0.001	0.250	0.094
		DCGT21.504MFNAM3	DCGT070201MFNAM3	●	●		●	●	●					0.003	0.250	0.094
		DCGT21.508MFNAM3	DCGT070202MFNAM3	●	●		●	●	●					0.007	0.250	0.094
		DCGT21.51MFNAM3	DCGT070204MFNAM3	●	●		●	●	●					0.015	0.250	0.094
		DCGT32.501FNAM3	DCGT11T300FNAM3				●		●	●	●			0.001	0.375	0.156
		DCGT32.504MFNAM3	DCGT11T301MFNAM3	●	●		●	●	●	●				0.003	0.375	0.156
		DCGT32.508FNAM3	DCGT11T302FNAM3						●		●	●		0.008	0.375	0.156
		DCGT32.508MFNAM3	DCGT11T302MFNAM3	●	●		●	●	●	●				0.007	0.375	0.156
		DCGT32.51FNAM3	DCGT11T304FNAM3						●		●	●		0.016	0.375	0.156
		DCGT32.51MFNAM3	DCGT11T304MFNAM3	●	●		●	●	●	●				0.015	0.375	0.156
		DCMT21.508FNAM3	DCMT070202FNAM3			●								0.008	0.250	0.094
		DCMT21.51FNAM3	DCMT070204FNAM3			●								0.016	0.250	0.094
		DCMT21.504FNAM3	DCMT11T301FNAM3									●		0.004	0.375	0.156
		DCMT21.508FNAM3	DCMT11T302FNAM3									●		0.008	0.375	0.156
	DCMT21.51FNAM3	DCMT11T304FNAM3									●		0.016	0.375	0.156	
	DCMT21.52FNAM3	DCMT11T308FNAM3			●								0.031	0.375	0.156	

● : Line up

Reference pages: External toolholder → 3-45 -, Internal toolholder → 4-18 -



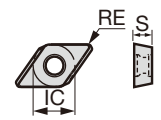


## Insert POSITIVE TYPE / DOUBLE SIDED

- : Continuous cutting
- ◐ : Light interrupted cutting
- ◑ : Heavy interrupted cutting

**DX**Rhombic, 55°  
with hole

	P	M	N	S	H	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Steel	●	●	●	●	●																
Stainless	●	●	●	●	●																
Non-ferrous																					
Superalloy	●	●																			
Hard material																					



Application	Chipbreaker	Designation		Coated			Coated cermet	Cermet	Uncoated	Dimension (in)		
		Inch	Metric	AH8015	AH725	SH725	GT9530	NS9530	KS05F	RE	IC	S
Finishing (sharp edge)		<b>JRP</b>	DXGU 220MFRE JRP	DXGU070301MFRE-JRP**	●					<0.004*	0.250	0.125
			DXGU 220MFLE JRP	DXGU070301MFLE-JRP**	●					<0.004*	0.250	0.125
			DXGU 220.5MFRE JRP	DXGU070302MFRE-JRP**	●					<0.008*	0.250	0.125
			DXGU 220.5MFLE JRP	DXGU070302MFLE-JRP**	●					<0.008*	0.250	0.125
Finishing		<b>JSS</b>	DXGU 220MFR JSS	DXGU070301MFR-JSS	●					<0.004*	0.250	0.125
			DXGU 220MFL JSS	DXGU070301MFL-JSS	●					<0.004*	0.250	0.125
			DXGU 220.5MFR JSS	DXGU070302MFR-JSS	●					<0.008*	0.250	0.125
			DXGU 220.5MFL JSS	DXGU070302MFL-JSS	●					<0.008*	0.250	0.125
Finishing		<b>JSS</b>	DXGU 220MR JSS	DXGU070301MR-JSS	●					<0.004*	0.250	0.125
			DXGU 220ML JSS	DXGU070301ML-JSS	●					<0.004*	0.250	0.125
			DXGU 220.5MR JSS	DXGU070302MR-JSS	●					<0.008*	0.250	0.125
			DXGU 220.5ML JSS	DXGU070302ML-JSS	●					<0.008*	0.250	0.125
Light cutting (sharp edge)		<b>JS</b>	DXGU 220MFR JS	DXGU070301MFR-JS <sup>(1)</sup>	●					<0.004*	0.250	0.125
			DXGU 220MFL JS	DXGU070301MFL-JS <sup>(1)</sup>	●					<0.004*	0.250	0.125
			DXGU 220.5MFR JS	DXGU070302MFR-JS <sup>(1)</sup>	●					<0.008*	0.250	0.125
			DXGU 220.5MFL JS	DXGU070302MFL-JS <sup>(1)</sup>	●					<0.008*	0.250	0.125
			DXGU 221MFR JS	DXGU070304MFR-JS <sup>(1)</sup>	●					<0.016*	0.250	0.125
Light cutting		<b>JTS</b>	DXGU 220MFR JTS	DXGU070301MFR-JTS	●					<0.004*	0.250	0.125
			DXGU 220MFL JTS	DXGU070301MFL-JTS	●					<0.004*	0.250	0.125
			DXGU 220.5MFR JTS	DXGU070302MFR-JTS	●					<0.008*	0.250	0.125
			DXGU 220.5MFL JTS	DXGU070302MFL-JTS	●					<0.008*	0.250	0.125
Light cutting		<b>JTS</b>	DXGU 220MR JTS	DXGU070301MR-JTS	●					<0.004*	0.250	0.125
			DXGU 220ML JTS	DXGU070301ML-JTS	●					<0.004*	0.250	0.125
			DXGU 220.5MR JTS	DXGU070302MR-JTS	●					<0.008*	0.250	0.125
			DXGU 220.5ML JTS	DXGU070302ML-JTS	●					<0.008*	0.250	0.125

\* Corner radius (RE) with a sign of inequality (&lt;) means minus tolerance.

\*\* For external turning applications

(1) Due to chipbreaker profile, max ap for face or ID turning is 1 mm

● : Line up

Reference pages: External toolholder → 3-74 -, Internal toolholder → 4-36 -



# Insert POSITIVE TYPE / DOUBLE SIDED

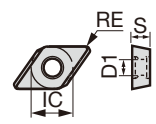
- : Continuous cutting
- : Light interrupted cutting
- ✱ : Heavy interrupted cutting

# DX

**Rhombic, 55° with hole**



<b>P</b> Steel	●	●	●	✱																	
<b>M</b> Stainless	●	●			●	●	●	●													
<b>N</b> Non-ferrous																					
<b>S</b> Superalloy					●	●															
<b>H</b> Hard material																					

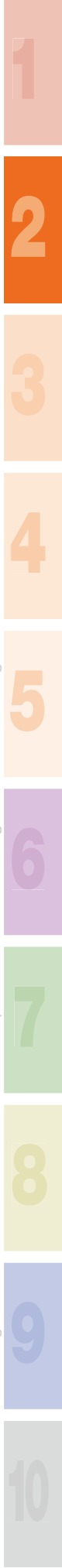


Application	Chipbreaker	Designation		Coated					Coated cermet		Cermet	Uncoated		Dimension (in)				
				T9215	T9225	AH8015	AH725	SH725	GT9530	NS9530	KS05F	RE	IC	S				
		Inch	Metric															
Finishing to medium cutting		<b>TS</b>	<b>DXGU 220.5R TS</b>	<b>DXGU070302R-TS</b>			●	●		●		●		0.008	0.250	0.125		
			DXGU 220.5L TS	DXGU070302L-TS			●	●		●		●		0.008	0.250	0.125		
			DXGU 221R TS	DXGU070304R-TS			●	●		●		●		0.016	0.250	0.125		
			DXGU 221L TS	DXGU070304L-TS			●	●		●		●		0.016	0.250	0.125		
			DXGU 222R TS	DXGU070308R-TS			●	●		●		●		0.031	0.250	0.125		
			DXGU 222L TS	DXGU070308L-TS			●	●		●		●		0.031	0.250	0.125		
Finishing to medium cutting		<b>TS</b>	<b>DXMU 220.5R TS</b>	<b>DXMU070302R-TS</b>	●	●	●	●						0.008	0.250	0.125		
			DXMU 220.5L TS	DXMU070302L-TS	●	●	●	●						0.008	0.250	0.125		
			DXMU 221R TS	DXMU070304R-TS	●	●	●	●						0.016	0.250	0.125		
			DXMU 221L TS	DXMU070304L-TS	●	●	●	●						0.016	0.250	0.125		
			DXMU 222R TS	DXMU070308R-TS	●	●	●	●						0.031	0.250	0.125		
			DXMU 222L TS	DXMU070308L-TS	●	●	●	●						0.031	0.250	0.125		

\* 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

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



# Insert POSITIVE TYPE

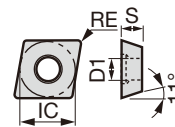
● : Continuous cutting  
 ● : Light interrupted cutting  
 ✱ : Heavy interrupted cutting

## EP



Rhombic, 75°  
with hole  
Positive 11°

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



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

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

● : Line up

Reference pages: Internal toolholder → 4-11 -























# Insert POSITIVE TYPE

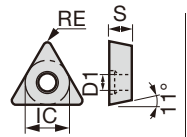
- : Continuous cutting
- ◐ : Light interrupted cutting
- ◑ : Heavy interrupted cutting

## TP



Triangular  
with hole  
Positive 11°

Material	Steel	Stainless	Non-ferrous	Superalloy	Hard material	Coated	Coated cermet	Cermet	Uncoated
P	●●●●●	●●	●	●	●	●●	●●	●●	●●
M	●●	●●	●	●	●	●●	●●	●●	●●
N	●●	●●	●	●	●	●●	●●	●●	●●
S	●●	●●	●	●	●	●●	●●	●●	●●
H	●●	●●	●	●	●	●●	●●	●●	●●



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

● : Line up

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



































# Insert POSITIVE TYPE / DOUBLE SIDED

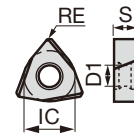
- : Continuous cutting
- ◐ : Light interrupted cutting
- ◑ : Heavy interrupted cutting

## WX



Trigon, 80°  
with hole

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



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

\*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

Reference pages: External toolholder → 3-72 -, Internal toolholder → 4-35





# Insert NEGATIVE TYPE

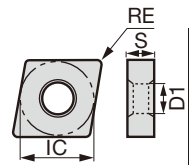
- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

## CN



Rhombic, 80°  
with hole

	P	M	N	S	H	Coated	Coated cermet	Cermet	Un-coated
Steel	●	◐	◐	◐	◐	●	●	●	●
Stainless	●	●	◐	◐	◐	●	●	●	●
Non-ferrous	◐	◐	◐	◐	◐	●	●	●	●
Superalloy	◐	◐	◐	◐	◐	●	●	●	●
Hard material	◐	◐	◐	◐	◐	●	●	●	●



Application	Chipbreaker	Designation		Coated										Coated cermet	Cermet	Un-coated	Dimension (in)						
				T9205	T9215	T9225	T9235	T6215	AH8005	AH8015	AH6225	AH6235	AH110	AH120	GH330	GT9530	GT720	NS9530	NS520	TH10	RE	IC	S
				Inch		Metric																	
Finishing		<b>SF</b>	CNMG 321 SF	CNMG090304-SF																			
			CNMG 322 SF	CNMG090308-SF					●											0.016	0.375	0.125	
			CNMG 431 SF	CNMG120404-SF					●											0.031	0.375	0.125	
			CNMG 432 SF	CNMG120408-SF					●											0.016	0.500	0.187	
			CNMG 433 SF	CNMG120412-SF					●											0.031	0.500	0.187	
		<b>SS</b>	CNMG 331E SS	CNMG090404E-SS																			
			CNMG 332E SS	CNMG090408E-SS																0.016	0.375	0.187	
			CNMG 431 SS	CNMG120404-SS					●											0.031	0.375	0.187	
			CNMG 432 SS	CNMG120408-SS					●											0.016	0.500	0.187	
			CNMG 433 SS	CNMG120412-SS					●											0.031	0.500	0.187	
		<b>HRF</b>	CNMG 431 HRF	CNMG120404-HRF																			
			CNMG 432 HRF	CNMG120408-HRF																0.016	0.500	0.187	
			CNMG 433 HRF	CNMG120412-HRF																0.031	0.500	0.187	
	Finishing (wiper)		<b>FW</b>	CNMG 331E FW	CNMG090404E-FW	●	●	●												0.016	0.375	0.187	
				CNMG 332E FW	CNMG090408E-FW	●	●	●													0.031	0.375	0.187
			CNMG 431 FW	CNMG120404-FW		●														0.016	0.500	0.187	
			CNMG 432 FW	CNMG120408-FW	●	●	●													0.031	0.500	0.187	
		<b>AFW</b>	CNMG 431 AFW	CNMG120404-AFW		●	●													0.016	0.500	0.187	
		CNMG 432 AFW	CNMG120408-AFW	●	●	●	●												0.031	0.500	0.187		
Finishing		<b>O1</b>	CNGG 320.5-01	CNGG090302-01															0.008	0.375	0.125		
			CNGG 321-01	CNGG090304-01																0.016	0.375	0.125	
			CNGG 322-01	CNGG090308-01																0.031	0.375	0.125	
			CNGG 430-01	CNGG120401-01																0.004	0.500	0.187	
			CNGG 430.5-01	CNGG120402-01													●	●		0.008	0.500	0.187	
			CNGG 431-01	CNGG120404-01													●	●		0.016	0.500	0.187	
			CNGG 432-01	CNGG120408-01													●	●		0.031	0.500	0.187	
			<b>11</b>	CNMG 431-11	CNMG120404-11												●	●		0.016	0.500	0.187	
			CNMG 432-11	CNMG120408-11												●	●		0.031	0.500	0.187		

\* Please see Tungaloy General Catalog vol.5 L011 - L015 about the adjustment of the machining program for rounding or taper machining by using SW/FW. Please contact our sales representatives if you have any question.

● : Line up

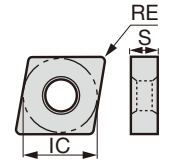
## Insert NEGATIVE TYPE

● : Continuous cutting  
 ● : Light interrupted cutting  
 ✱ : Heavy interrupted cutting

**CN**

Rhombic, 80°  
with hole

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



Application	Chipbreaker	Designation	Coated										Coated cermet	Cermet	Dimension (in)						
			T9205	T9215	T9225	T9235	T6215	AH8015	AH6225	AH6235	AH725	AH110	AH120	GH110	GT9530	NS9530	RE	IC	S		
Finishing for mild steel		Inch	CNMG 431-17													0.016	0.500	0.187			
		Metric	CNMG120404-17													0.031	0.500	0.187			
Finishing		C	CNGG 431 R-C													0.016	0.500	0.187			
			CNGG 431 L-C													0.016	0.500	0.187			
			CNGG 432 R-C													0.031	0.500	0.187			
			CNGG 432 L-C													0.031	0.500	0.187			
Medium cutting		TM	CNMG 321 TM	●	●													0.016	0.375	0.125	
			CNMG 322 TM	●	●	●													0.031	0.375	0.125
			CNMG 331E TM	●	●	●	●	●						●			0.016	0.375	0.187		
			CNMG 332E TM	●	●	●	●	●						●			0.031	0.375	0.187		
			CNMG 333E TM	●	●	●	●	●						●			0.047	0.375	0.187		
			CNMG 431 TM	●	●	●	●	●	●	●	●	●	●	●				0.016	0.500	0.187	
			CNMG 432 TM	●	●	●	●	●	●	●	●	●	●	●				0.031	0.500	0.187	
			CNMG 433 TM	●	●	●	●	●	●	●	●	●	●	●				0.047	0.500	0.187	
			CNMG 434 TM	●	●	●	●	●	●	●	●	●	●	●				0.063	0.500	0.187	
			CNMG 542 TM	●													0.031	0.625	0.250		
			CNMG 543 TM	●	●	●	●						●			0.047	0.625	0.250			
			CNMG 642 TM	●	●	●	●						●			0.031	0.750	0.250			
			CNMG 643 TM	●	●	●	●						●			0.047	0.750	0.250			
Medium cutting for mild steel		PM	CNMG 331E PM	●	●	●	●	●								0.016	0.375	0.187			
			CNMG 332E PM	●	●	●	●	●								0.031	0.375	0.187			
			CNMG 333E PM	●	●	●	●	●								0.047	0.375	0.187			
			CNMG 431-PM	●	●	●	●	●	●	●	●	●	●	●				0.016	0.500	0.187	
			CNMG 432-PM	●	●	●	●	●	●	●	●	●	●	●				0.031	0.500	0.187	
			CNMG 433-PM	●	●	●	●	●	●	●	●	●	●	●				0.047	0.500	0.187	
			CNMG 434-PM	●	●	●	●	●	●	●	●	●	●	●				0.063	0.500	0.187	
Medium cutting		ZM	CNMG 331E ZM	●	●	●	●	●								0.016	0.375	0.187			
			CNMG 332E ZM	●	●	●	●	●								0.031	0.375	0.187			
			CNMG 333E ZM	●	●	●	●	●								0.047	0.375	0.187			
			CNMG 431 ZM	●	●	●	●	●	●	●	●	●	●	●				0.016	0.500	0.187	
			CNMG 432 ZM	●	●	●	●	●	●	●	●	●	●	●	●	●		0.031	0.500	0.187	
			CNMG 433 ZM	●	●	●	●	●	●	●	●	●	●	●	●	●		0.047	0.500	0.187	
Medium cutting		AM	CNMG 432 AM	●	●													0.031	0.500	0.187	
			CNMG 433 AM	●	●													0.047	0.500	0.187	
			CNMG 434 AM	●	●													0.063	0.500	0.187	

● : Line up

Reference pages: External toolholder → 3-89 -



# Insert NEGATIVE TYPE

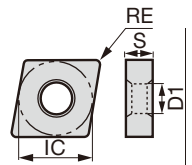
- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

## CN



Rhombic, 80°  
with hole

	P	M	N	S	H	Coated	Coated cermet	Cermet	Un-coated
Steel	●	◐	◐	◐	◐	●	●	●	●
Stainless	●	●	◐	◐	◐	●	●	●	●
Non-ferrous	◐	◐	◐	◐	◐	◐	◐	◐	◐
Superalloy	◐	◐	◐	◐	◐	◐	◐	◐	◐
Hard material	◐	◐	◐	◐	◐	◐	◐	◐	◐



Application	Chipbreaker	Designation		Coated														Coated cermet	Cermet	Un-coated	Dimension (in)							
		Inch	Metric	T9205	T9215	T9225	T9235	T6215	AH8005	AH8015	AH6225	AH6235	AH905	AH725	AH110	AH120	GT9530	GT720	NS9530	NS520	TH10	RE	IC	S				
Application		<b>NM</b>	CNMG 432 NM	CNMG120408-NM	●	●	●	●														●			0.031	0.500	0.187	
			CNMG 433 NM	CNMG120412-NM	●	●	●																			0.047	0.500	0.187
Application		<b>DM</b>	CNMG 431 DM	CNMG120404-DM		●	●	●		●	●														0.016	0.500	0.187	
			CNMG 432 DM	CNMG120408-DM	●	●	●	●	●		●	●													0.031	0.500	0.187	
			CNMG 433 DM	CNMG120412-DM	●	●	●	●	●		●	●													0.047	0.500	0.187	
			CNMG 434 DM	CNMG120416-DM	●	●	●	●	●		●	●													0.063	0.500	0.187	
Medium cutting		<b>All-round</b>	CNMG 321	CNMG090304		●	●														●			0.016	0.375	0.125		
			CNMG 322	CNMG090308	●	●	●	●														●			0.031	0.375	0.125	
			CNMG 431	CNMG120404	●	●	●	●							●	●	●					●	●		0.016	0.500	0.187	
			CNMG 432	CNMG120408	●	●	●	●							●	●	●					●	●	●	0.031	0.500	0.187	
			CNMG 433	CNMG120412	●	●	●	●							●	●						●	●		0.047	0.500	0.187	
			CNMG 434	CNMG120416	●	●	●	●																	0.063	0.500	0.187	
			CNMG 542	CNMG160608	●	●	●	●								●									0.031	0.625	0.250	
			CNMG 543	CNMG160612	●	●	●	●								●									0.047	0.625	0.250	
			CNMG 544	CNMG160616	●	●	●	●																	0.063	0.625	0.250	
			CNMG 642	CNMG190608		●	●	●																	0.031	0.750	0.250	
			CNMG 643	CNMG190612	●	●	●	●									●								0.047	0.750	0.250	
			CNMG 644	CNMG190616		●	●	●									●								0.063	0.750	0.250	
		Application		<b>SM</b>	CNMG 331E SM	CNMG090404E-SM					●		●															
					CNMG 332E SM	CNMG090408E-SM					●		●															
	CNMG 333E SM			CNMG090412E-SM					●		●																	
	CNMG 431 SM			CNMG120404-SM					●		●	●		●														
	CNMG 432 SM			CNMG120408-SM					●		●	●	●	●	●													
	CNMG 433 SM			CNMG120412-SM					●		●	●	●	●														
	CNMG 543 SM			CNMG160612-SM					●		●																	
	CNMG 544 SM			CNMG160616-SM							●																	
	CNMG 643 SM			CNMG190612-SM							●																	
	CNMG 644 SM			CNMG190616-SM							●																	
Application		<b>SDM</b>	CNMG 431 SDM	CNMG120404-SDM					●	●	●	●	●															
			CNMG 432 SDM	CNMG120408-SDM					●	●	●	●	●															
			CNMG 433 SDM	CNMG120412-SDM					●	●	●	●	●															

● : Line up

Reference pages: External toolholder → 3-89 -

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10





# Insert NEGATIVE TYPE

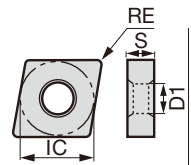
- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

## CN



Rhombic, 80°  
with hole

	P	M	N	S	H	Steel	Stainless	Non-ferrous	Superalloy	Hard material
●	●	●	●	●	●	●	●	●	●	●
◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱



Application	Chipbreaker	Designation		Coated											Coated cermet	Cermet	Uncoated	Dimension (in)									
		Inch	Metric	T9215	T9225	T9235	AH8005	AH8015	AH6225	AH6235	AH905	AH725	AH110	AH120	GH330	GH110	GT720	NS9530	KS05F	TH10	RE	IC	S				
Medium cutting		<b>P</b>	CNCG 431 R-P	CNCG120404R-P																	●	●	●	0.016	0.500	0.187	
			CNCG 431 L-P	CNCG120404L-P																		●	●	●	0.016	0.500	0.187
			CNCG 432 R-P	CNCG120408R-P																		●	●	●	0.031	0.500	0.187
			CNCG 432 L-P	CNCG120408L-P																		●	●	●	0.031	0.500	0.187
		<b>S</b>	CNMG 431 R-S	CNMG120404R-S	●	●			●	●					●		●	●						0.016	0.500	0.187	
			CNMG 431 L-S	CNMG120404L-S	●	●			●	●					●		●	●				0.016	0.500	0.187			
			CNMG 432 R-S	CNMG120408R-S	●	●			●	●					●		●	●				0.031	0.500	0.187			
			CNMG 432 L-S	CNMG120408L-S	●	●			●	●					●		●	●				0.031	0.500	0.187			
		<b>27</b>	CNMG 431-27	CNMG120404-27	●	●													●					0.016	0.500	0.187	
			CNMG 432-27	CNMG120408-27	●	●	●								●				●					0.031	0.500	0.187	
			CNMG 433-27	CNMG120412-27	●																			0.047	0.500	0.187	
		<b>28</b>	CNGP 430-28	CNGP120401-28																				0.004	0.500	0.187	
			CNGP 430.5-28	CNGP120402-28																				0.008	0.500	0.187	
		CNGP 431-28	CNGP120404-28																●				0.016	0.500	0.187		
		CNGP 432-28	CNGP120408-28																●				0.031	0.500	0.187		
		CNCG 430.5-28	CNCG120402-28																●				0.008	0.500	0.187		
		CNCG 431-28	CNCG120404-28																●				0.016	0.500	0.187		
		CNCG 432-28	CNCG120408-28																●				0.031	0.500	0.187		
		CNMG 431-28	CNMG120404-28		●		●	●						●	●				●				0.016	0.500	0.187		
		CNMG 432-28	CNMG120408-28				●	●						●	●				●				0.031	0.500	0.187		
		CNMG 433-28	CNMG120412-28					●	●					●									0.047	0.500	0.187		
	<b>33</b>	CNMG 432-33	CNMG120408-33																●				0.031	0.500	0.187		
		CNMG 434-33	CNMG120416-33	●																			0.063	0.500	0.187		
		CNMG 543-33	CNMG160612-33	●																			0.047	0.625	0.250		
		CNMG 643-33	CNMG190612-33	●																			0.047	0.750	0.250		
	<b>37</b>	CNMG 431-37	CNMG120404-37	●															●				0.016	0.500	0.187		
		CNMG 432-37	CNMG120408-37	●	●														●			●	0.031	0.500	0.187		
		CNMG 433-37	CNMG120412-37	●																			0.047	0.500	0.187		
	<b>38</b>	CNMG 431-38	CNMG120404-38																●				0.016	0.500	0.187		
		CNMG 432-38	CNMG120408-38	●															●				0.031	0.500	0.187		

● : Line up

Reference pages: External toolholder → 3-89 -

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

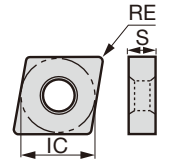
Insert **NEGATIVE TYPE**

● : Continuous cutting  
 ● : Light interrupted cutting  
 ✱ : Heavy interrupted cutting

**CN**

Rhombic, 80°  
with hole

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



Application	Chipbreaker	Designation		Coated				Diamond coated	Dimension (in)			
				DM4	QM3	TM4	ZM3	UC1	RE	IC	S	
		Inch	Metric									
Light cutting		<b>UL</b>	CNCG431FNUL	CNCG120404FNUL	●	●	●			0.016	0.500	0.187
			CNCG432FNUL	CNCG120408FNUL	●	●	●			0.031	0.500	0.187
Medium cutting		<b>ZP</b>	CNCG431FNZP	CNCG120404FNZP	●	●	●			0.016	0.500	0.187
			CNCG432FNZP	CNCG120408FNZP	●	●	●			0.031	0.500	0.187
		<b>ZP</b>	CNMG431FNZP	CNMG120404FNZP				●		0.016	0.500	0.187
			CNMG432FNZP	CNMG120408FNZP				●		0.031	0.500	0.187

● : Line up























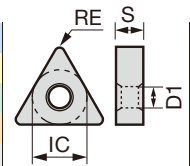
## Insert NEGATIVE TYPE

● : Continuous cutting  
 ● : Light interrupted cutting  
 ✱ : Heavy interrupted cutting

**TN**

Triangular  
with hole

	P	M	N	S	H
Steel	●●●●✱	●●	●●	●●	●●
Stainless	●●	●●	●●	●●	●●
Non-ferrous	●●	●●	●●	●●	●●
Superalloy	●●	●●	●●	●●	●●
Hard material	●●	●●	●●	●●	●●



Application	Chipbreaker	Designation		Coated										Coated cermet	Cermet	Uncoated	Dimension (in)								
		Inch	Metric	T9205	T9215	T9225	T9235	T6215	AH8005	AH8015	AH6225	AH6235	AH120	GH330	SH725	GT9530	AT9530	NS9530	NS520	KS20	RE	IC	S		
Finishing		<b>TS</b>	TNMG 330.5E TS	TNMG110402E-TS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	0.008	0.250	0.187		
			TNMG 231E TS	TNMG110404E-TS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	0.016	0.250	0.187	
			TNMG 232E TS	TNMG110408E-TS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	0.031	0.250	0.187	
			TNMG 330.5 TS	TNMG160402-TS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	0.008	0.375	0.187	
			TNMG 331 TS	TNMG160404-TS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	0.016	0.375	0.187	
			TNMG 332 TS	TNMG160408-TS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	0.031	0.375	0.187	
			TNMG 333 TS	TNMG160412-TS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	0.047	0.375	0.187	
		<b>SF</b>	TNMG 331 SF	TNMG160404-SF					●		●											0.016	0.375	0.187	
			TNMG 332 SF	TNMG160408-SF					●		●												0.031	0.375	0.187
			TNMG 333 SF	TNMG160412-SF					●		●												0.047	0.375	0.187
Finishing		<b>SS</b>	TNMG 231E SS	TNMG110404E-SS																	0.016	0.250	0.187		
			TNMG 232E SS	TNMG110408E-SS																			0.031	0.250	0.187
			TNMG 331 SS	TNMG160404-SS					●		●	●	●	●	●						●		0.016	0.375	0.187
			TNMG 332 SS	TNMG160408-SS					●		●	●	●	●	●						●		0.031	0.375	0.187
			TNMG 333 SS	TNMG160412-SS					●		●	●	●	●	●								0.047	0.375	0.187
			TNMG 431 SS	TNMG220404-SS					●		●	●	●	●	●								0.016	0.500	0.187
			TNMG 432 SS	TNMG220408-SS					●		●	●	●	●	●								0.031	0.500	0.187
		TNMG 433 SS	TNMG220412-SS					●		●	●	●	●	●								0.047	0.500	0.187	
		<b>HRF</b>	TNMG 331 HRF	TNMG160404-HRF						●	●												0.016	0.375	0.187
			TNMG 332 HRF	TNMG160408-HRF						●	●												0.031	0.375	0.187
Finishing (wiper)		<b>FW</b>	TNMG 231E FW	TNMG110404E-FW	●																	0.016	0.250	0.187	
			TNMG 232E FW	TNMG110408E-FW	●																		0.031	0.250	0.187
			TNMG 332 FW	TNMG110408E-FW	●																		0.031	0.375	0.187
			TNMG 331 FW	TNMG160404-FW	●																		0.016	0.375	0.187
			TNMG 332 FW	TNMG160408-FW	●																		0.031	0.375	0.187
					*Wiper																				
Finishing (sharp edge)		<b>01</b>	TNGG 330.5 F-01	TNGG160402F-01																		0.008	0.375	0.187	
			TNGG 331 F-01	TNGG160404F-01											●								0.016	0.375	0.187
			TNGG 332 F-01	TNGG160408F-01											●								0.031	0.375	0.187

\* Please see Tungaloy General Catalog vol.5 L011 - L015 about the adjustment of the machining program for rounding or taper machining by using SW/FW. Please contact our sales representatives if you have any question.

● : Line up

Reference pages: External toolholder → 3-82 -









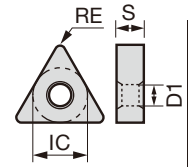
## Insert NEGATIVE TYPE

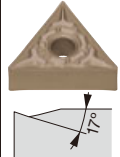
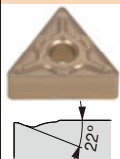
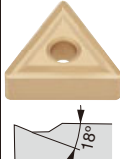
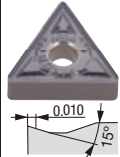
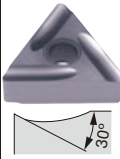

● : Continuous cutting  
 ● : Light interrupted cutting  
 \* : Heavy interrupted cutting

**TN**

 Triangular with hole

	P	M	N	S	H
Steel	●●●*	●●	●●	●●	●●
Stainless	●●	●●	●●	●●	●●
Non-ferrous	●●	●●	●●	●●	●●
Superalloy	●●	●●	●●	●●	●●
Hard material	●●	●●	●●	●●	●●



Application	Chipbreaker	Designation	Coated										Coated cermet	Cermet	Uncoated	Dimension (in)						
			T9215	T9225	T6215	AH6225	AH6235	AH905	AH120	GH110	GH330	SH725	GT9530	AT9530	NS9530	KS20	TH10	RE	IC	S		
			Inch		Metric																	
Medium cutting		<b>TQ</b> TNMG 331 TQ	TNMG160404-TQ	●	●												●	●	●	0.016	0.375	0.187
		TNMG 332 TQ	TNMG160408-TQ	●	●													●	●	●	0.031	0.375
		<b>TA</b> TNMG 331 TA	TNMG160404-TA	●	●															0.016	0.375	0.187
		TNMG 332 TA	TNMG160408-TA	●	●															0.031	0.375	0.187
		TNMG 333 TA	TNMG160412-TA	●	●															0.047	0.375	0.187
		<b>SA</b> TNMG 331 SA	TNMG160404-SA			●	●	●		●										0.016	0.375	0.187
		TNMG 332 SA	TNMG160408-SA			●	●	●		●							●			0.031	0.375	0.187
		TNMG 333 SA	TNMG160412-SA			●	●	●		●							●			0.047	0.375	0.187
		TNMG 432 SA	TNMG220408-SA			●	●	●		●							●			0.031	0.500	0.187
		TNMG 433 SA	TNMG220412-SA			●	●	●		●										0.047	0.500	0.187
		<b>HMM</b> TNMG 331 HMM	TNMG160404-HMM																	0.016	0.375	0.187
		TNMG 332 HMM	TNMG160408-HMM																	0.031	0.375	0.187
TNMG 333 HMM		TNMG160412-HMM																	0.047	0.375	0.187	
Medium cutting (sharp edge)		<b>P</b> TNGG 330.5 FR-P	TNGG160402FR-P																0.008	0.375	0.187	
		TNGG 330.5 FL-P	TNGG160402FL-P																	0.008	0.375	0.187
		TNGG 331 FR-P	TNGG160404FR-P																	0.016	0.375	0.187
		TNGG 331 FL-P	TNGG160404FL-P																	0.016	0.375	0.187
		TNGG 332 FR-P	TNGG160408FR-P																	0.031	0.375	0.187
		TNGG 332 FL-P	TNGG160408FL-P																	0.031	0.375	0.187
Medium cutting		<b>P</b> TNGG 330.5 R-P	TNGG160402R-P																0.008	0.375	0.187	
		TNGG 330.5 L-P	TNGG160402L-P																0.008	0.375	0.187	
		TNGG 331 R-P	TNGG160404R-P																0.016	0.375	0.187	
		TNGG 331 L-P	TNGG160404L-P																0.016	0.375	0.187	
		TNGG 332 R-P	TNGG160408R-P																0.031	0.375	0.187	
		TNGG 332 L-P	TNGG160408L-P																0.031	0.375	0.187	

● : Line up

Reference pages: External toolholder → 3-82 -



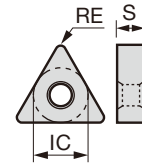
## Insert NEGATIVE TYPE

● : Continuous cutting  
 ● : Light interrupted cutting  
 ✱ : Heavy interrupted cutting

**TN**

Rhombic, 60°  
with hole

	P	M	N	S	H	650	ST4	DM4	DT4	QM3	TM4	VM1	ZM3	UC1	Dimension (in)		
Steel	●																
Stainless		●●●●															
Non-ferrous			●●●●														
Superalloy				●●●●													
Hard material					●●												



Application	Chipbreaker	Designation		Coated									Diamond coated	Dimension (in)					
		Inch	Metric	650	ST4	DM4	DT4	QM3	TM4	VM1	ZM3	UC1	RE	IC	S				
Finishing		<b>D1</b>	TNEG3308FLD1	TNEG160402FLD1								●				0.008	0.375	0.187	
			TNEG3308FRD1	TNEG160402FRD1									●				0.008	0.375	0.187
			TNEG331FLD1	TNEG160404FLD1									●				0.016	0.375	0.187
			TNEG331FRD1	TNEG160404FRD1									●				0.016	0.375	0.187
			TNEG332FLD1	TNEG160408FLD1									●				0.031	0.375	0.187
			TNEG332FRD1	TNEG160408FRD1									●				0.031	0.375	0.187
Medium cutting		<b>TMV</b>	TNGG3308MRTMV	TNGG160402MRTMV	●	●	●				●					0.007	0.375	0.187	
			TNGG331MRTMV	TNGG160404MRTMV	●	●	●				●						0.015	0.375	0.187
Light cutting		<b>UL</b>	TNGG3304MFNUL	TNGG160401MFNUL	●	●	●			●	●					0.003	0.375	0.187	
			TNGG3308MFNUL	TNGG160402MFNUL	●	●	●			●	●						0.007	0.375	0.187
			TNGG331MFNUL	TNGG160404MFNUL	●	●	●			●	●						0.015	0.375	0.187
			TNGG332MFNUL	TNGG160408MFNUL	●	●	●			●	●						0.031	0.375	0.187
Medium cutting		<b>U2</b>	TNGG3304FRU2	TNGG160401FRU2								●	●			0.004	0.375	0.187	
			TNGG3308FLU2	TNGG160402FLU2			●						●				0.008	0.375	0.187
			TNGG3308FRU2	TNGG160402FRU2			●						●				0.008	0.375	0.187
			TNGG331FLU2	TNGG160404FLU2			●						●				0.016	0.375	0.187
			TNGG331FRU2	TNGG160404FRU2			●						●				0.016	0.375	0.187
			TNGG332FLU2	TNGG160408FLU2			●						●				0.031	0.375	0.187
			TNGG332FRU2	TNGG160408FRU2			●						●				0.031	0.375	0.187
Medium cutting		<b>ZP</b>	TNGG3308FNZP	TNGG160402FNZP			●		●	●	●	●				0.008	0.375	0.187	
			TNGG331FNZP	TNGG160404FNZP			●		●	●	●	●					0.016	0.375	0.187
			TNGG332FNZP	TNGG160408FNZP			●		●	●	●						0.031	0.375	0.187
		<b>ZP</b>	TNMG3308FNZP	TNMG160402FNZP									●				0.008	0.375	0.187
	TNMG331FNZP	TNMG160404FNZP									●					0.016	0.375	0.187	
	TNMG332FNZP	TNMG160408FNZP									●					0.031	0.375	0.187	

● : Line up

Reference pages: External toolholder → 3-82 -







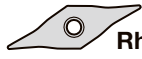




# Insert NEGATIVE TYPE

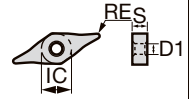
- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

## YN



Rhombic, 25°  
with hole

	P	M	N	S	H
Steel	●●●●✱	●●	●	●	●●
Stainless	●●	●●	●	●	●●
Non-ferrous			●	●	●●
Superalloy				●	●●
Hard material					●●



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

● : Line up

Reference pages: External toolholder → [3-95](#) -











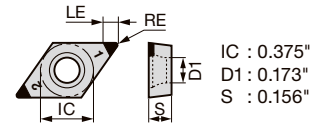
# CBN Insert POSITIVE TYPE

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

## DC



### 55° Rhombic with hole, Positive 7°



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

Material	IC	RE	D1	S	IC	RE	D1	S
K Cast iron	●	●	●	●	●	●	●	●
S Superalloy	●	●	●	●	●	●	●	●
H Hard material	●	●	✱	●	●	●	●	●
Sintered metal	●	●	●	●	●	●	●	●

Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*				BXA10	BXA20	BR35F	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX470	BX480	BX815	BX930
	Inch	Metric	RE	LE				Burr	Flank wear	Crater wear	Chipping														
Precision finishing	2QP-DCGW 32.50.5 F	2QP-DCGW11T302F	0.008	0.106	2		○					●	●									●			
	2QP-DCGW 32.50.5-LF	2QP-DCGW11T302-LF	0.008	0.106	2		○					●	●												
	2QP-DCGW 32.50.5-L	2QP-DCGW11T302-L	0.008	0.106	2		○					●	●												
	2QP-DCGW 32.51 F	2QP-DCGW11T304F	0.016	0.098	2		○																●		
	2QP-DCGW 32.51-E	2QP-DCGW11T304-E	0.016	0.098	2		○																	●	
	2QP-DCGW 32.51-LT	2QP-DCGW11T304-LT	0.016	0.098	2																			●	
	2QP-DCGW 32.51-LF	2QP-DCGW11T304-LF	0.016	0.098	2		○					●	●												
	2QP-DCGW 32.51-L	2QP-DCGW11T304-L	0.016	0.098	2		○					●	●												
	2QP-DCGW 32.52-LF	2QP-DCGW11T308-LF	0.031	0.083	2		○					●	●												
2QP-DCGW 32.52-L	2QP-DCGW11T308-L	0.031	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	0.008	0.106	2		○						●												
	2QP-DCMW 32.50.5	2QP-DCMW11T302	0.008	0.106	2		○												●	●	●				
	2QP-DCGW 32.50.5-LC	2QP-DCGW11T302-LC	0.008	0.106	2					○			●	●											
	2QP-DCGW 32.51	2QP-DCGW11T304	0.016	0.098	2		○					●	●	●	●	●	●						●	●	
	2QP-DCGW 32.51-SR	2QP-DCGW11T304SR	0.016	0.098	2		○						●												
	2QP-DCMW 32.51	2QP-DCMW11T304	0.016	0.098	2		○												●	●	●			●	
	Q-DCMW 32.51	Q-DCMW11T304	0.016	0.083	1		○																		
	2QP-DCGW 32.51-LC	2QP-DCGW11T304-LC	0.016	0.098	2					○			●	●											
	2QP-DCGW 32.52	2QP-DCGW11T308	0.031	0.083	2		○					●	●	●	●	●	●						●		
	2QP-DCGW 32.52-SR	2QP-DCGW11T308SR	0.031	0.083	2		○						●												
2QP-DCMW 32.52	2QP-DCMW11T308	0.031	0.083	2		○													●	●	●				
2QP-DCGW 32.52-LC	2QP-DCGW11T308-LC	0.031	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	0.016	0.098	2								●												
	2QP-DCGW 32.52-H	2QP-DCGW11T308-H	0.031	0.083	2								●												
	2QP-DCGW 32.52-HC	2QP-DCGW11T308HC	0.031	0.083	2									●											

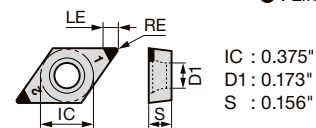
\*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

## DC with chipbreaker



### 55° Rhombic with hole, Positive 7°



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

Material	IC	RE	D1	S	IC	RE	D1	S
K Cast iron	●	●	●	●	●	●	●	●
S Superalloy	●	●	●	●	●	●	●	●
H Hard material	●	●	✱	●	●	●	●	●
Sintered metal	●	●	●	●	●	●	●	●

Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*				BXA10	BXA20	BR35F	BXM10
	Inch	Metric	RE	LE				Burr	Flank wear	Crater wear	Chipping				
Precision finishing	2QP-DCGT 32.51 HP	2QP-DCGT11T304-HP	0.016	0.098	2		○					●	●	●	●
	2QP-DCGT 32.51 HS	2QP-DCGT11T304-HS	0.016	0.098	2		○					●	●	●	●
	2QP-DCGT 32.52 HP	2QP-DCGT11T308-HP	0.031	0.083	2		○					●	●	●	●
	2QP-DCGT 32.52 HS	2QP-DCGT11T308-HS	0.031	0.083	2		○					●	●	●	●

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

● : Line up

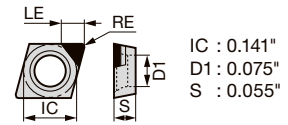
Reference pages: External toolholder → 3-45 -, Internal toolholder → 4-18 -



# EP



**75° Rhombic,  
Positive 11°  
with hole**



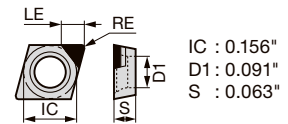
Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*					BX310	BX470	
	Inch	Metric	RE	LE				Burr	Flank wear	Crater wear	Chipping	Sintered metal			
												●			●●
Finishing	1QP-EPGW 4.51.80.5	1QP-EPGW03X102	0.008	0.055	1	○						●	●		
	1QP-EPGW 4.51.81	1QP-EPGW03X104	0.016	0.051	1	○						●	●		

\*Indicates the insert to use if the wear indicated is what happens with the standard hone. ● : Line up

# EP



**75° Rhombic,  
Positive 11°  
with hole**



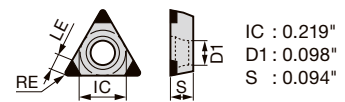
Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*					BX310	BX470	
	Inch	Metric	RE	LE				Burr	Flank wear	Crater wear	Chipping	Sintered metal			
												●			●●
Finishing	1QP-EPGW 520.5	1QP-EPGW040102	0.008	0.067	1	○						●	●		
	1QP-EPGW 521	1QP-EPGW040104	0.016	0.063	1	○						●	●		

\*Indicates the insert to use if the wear indicated is what happens with the standard hone. ● : Line up

# TC



**Triangular Positive 7°  
with hole**



Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*					BXA10	BXA20	
	Inch	Metric	RE	LE				Burr	Flank wear	Crater wear	Chipping	Sintered metal			
												●			●●
Finishing	3QP-TCGW 730.5	3QP-TCGW090202	0.008	0.091	3	○						●	●		
	3QP-TCGW 731	3QP-TCGW090204	0.016	0.087	3	○						●	●		
	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: EP: Internal toolholder → 4-11 -

TC: External toolholder → 3-71, Internal toolholder → 4-24 -

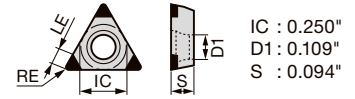
# CBN Insert POSITIVE TYPE

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

## TC



### Triangular Positive 7° with hole



Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*					BXA10	BXA20	
	Inch	Metric	RE	LE				Burr	Flank wear	Crater wear	Chipping				
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		○					●	●		

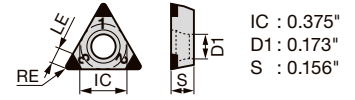
\*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

## TC



### Triangular Positive 7° with hole



Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*					BXA10	BXA20	
	Inch	Metric	RE	LE				Burr	Flank wear	Crater wear	Chipping				
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		○					●	●		

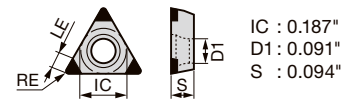
\*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

## TP



### Triangular Positive 11° with hole



Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*					BXA10	BXA20	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX930	
	Inch	Metric	RE	LE				Burr	Flank wear	Crater wear	Chipping												
Finishing	3QP-TPGW 630.5	3QP-TPGW080202	0.008	0.091	3		○					●	●										
	3QP-TPGW 631	3QP-TPGW080204	0.016	0.087	3		○					●	●	●	●	●	●						
	3QP-TPMW 631	3QP-TPMW080204		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 → 3-71, Internal toolholder → 4-24 -  
TP: Internal toolholder → 4-25 -





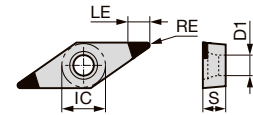




# VB



**35° Rhombic  
Positive 5°  
with hole**



IC : 0.250"  
 D1 : 0.110"  
 S : 0.094"

Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*					BXA10	BXA20
			RE	LE				Burr	Flank wear	Crater wear	Chipping			
	Inch	Metric												
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		○					●	●	

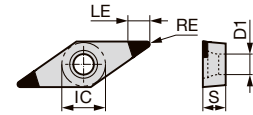
\*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

# VB



**35° Rhombic  
Positive 5°  
with hole**



IC : 0.250"  
 D1 : 0.110"  
 S : 0.125"

Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*					BXA10	BXA20	BR35F	BXM10	BXM20	BXA30	BXA40	BX310	BX330	BX360	BX930		
			RE	LE				Burr	Flank wear	Crater wear	Chipping														
	Inch	Metric																							
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	0.031	0.087	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



























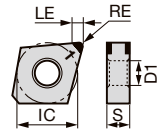




# CBN Insert NEGATIVE TYPE

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

## GN



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



### 70° Rhombic with hole

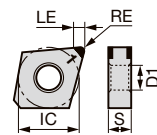
Material	Cast iron	Superalloy	Hard material	Sintered metal
Cast iron	●			
Superalloy		●		
Hard material	●	●	✱	●
Sintered metal			●	●

Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*					BXA10	BXA20	BR35F	BXM20	BX360	BX470	BX930
			RE	LE				Burr	Flank wear	Crater wear	Chipping								
	Inch	Metric																	
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			○				●	●						
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		○					●	●						
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

Material	Cast iron	Superalloy	Hard material	Sintered metal
Cast iron	●			
Superalloy		●		
Hard material	●	●	●	
Sintered metal			●	●

Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*					BXA10	BXA20	BXM10
			RE	LE				Burr	Flank wear	Crater wear	Chipping				
	Inch	Metric													
Precision finishing	2QP-GNGG 431 HP	2QP-GNGG120404-HP	0.016	0.083	2		○					●	●	●	
	2QP-GNGG 431 HS	2QP-GNGG120404-HS		0.083	2		○					●	●	●	
Precision finishing	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 → **3-89 -**







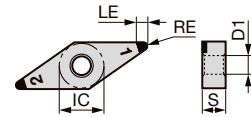




## VN with chipbreaker



**35° Rhombic with hole**



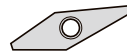
IC : 0.375"  
D1 : 0.150"  
S : 0.187"

Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*					BXA10	BXA20	BXM10	BXM20	BXA40						
			Inch	Metric				RE	LE	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	○							●	●									
Precision finishing	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	○											●						

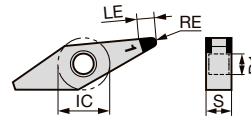
\*Indicates the insert to use if the wear indicated is what happens with the standard hone.

● : Line up

## YN



**25° Rhombic with hole**



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

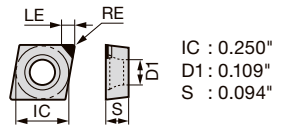
Application	Designation		Dimension (in)		No. of corners	Wiper	Standard	Improve issue*					BXA20		
			Inch	Metric				RE	LE	Burr	Flank wear	Crater wear		Chipping	BXA20
Precision finishing	2QP-YNGA 331-LF	2QP-YNGA160404-LF	0.016	0.122	2	○						●			
	2QP-YNGA 331-L	2QP-YNGA160404-L		0.122	2	○						●			
	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



# CC

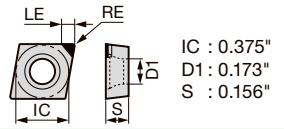


**80° Rhombic Positive 7° with hole**

Application	Designation		Dimension (in)		No. of corners	Chipbreaker														
	Inch	Metric	RE	LE			DX110	DX120	DX140											
	N Non-ferrous										●●●●●●									
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	0.008	0.094	1			●												
	1QP-CCGT 21.51 NS	1QP-CCGT060204-NS	0.016	0.122	1	○	●													
	1QP-CCMT 21.51	1QP-CCMT060204	0.016	0.094	1	○	●													
	CCMT 21.51 DIA	CCMT060204-DIA	0.016	0.094	1	○	●													
	CCGW 21.51 DIA	CCGW060204-DIA	0.016	0.094	1			●												

● : Line up

# CC

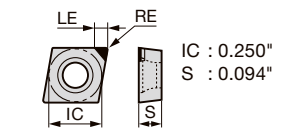


**80° Rhombic Positive 7° with hole**

Application	Designation		Dimension (in)		No. of corners	Chipbreaker														
	Inch	Metric	RE	LE			DX110	DX120	DX140	DX160										
	N Non-ferrous										●●●●●●●●									
Finishing	CCMT 32.50.5 DIA	CCMT09T302-DIA	0.008	0.094	1	○	●													
	CCGW 32.50.5 DIA	CCGW09T302-DIA	0.008	0.138	1			●												
	1QP-CCGT 32.51 NS	1QP-CCGT09T304-NS	0.016	0.122	1	○	●													
	1QP-CCMT 32.51	1QP-CCMT09T304	0.016	0.094	1	○	●													
	CCMT 32.51 DIA	CCMT09T304-DIA	0.016	0.094	1	○	●													
	CCGW 32.51 DIA	CCGW09T304-DIA	0.016	0.138	1			●	●											
	1QP-CCGT 32.52 NS	1QP-CCGT09T308-NS	0.031	0.118	1	○	●													
	CCGW 32.52 DIA	CCGW09T308-DIA	0.031	0.134	1			●												

● : Line up

# CC

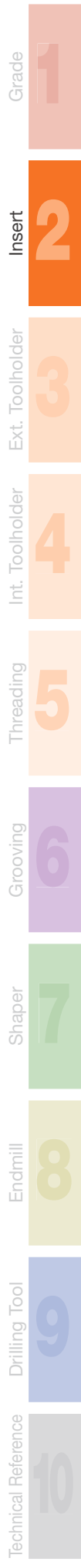


**80° Rhombic Positive 7° with hole**

Application	Designation		Dimension (in)		No. of corners	Chipbreaker													
	Inch	Metric	RE	LE			PD2												
	N Non-ferrous										●●								
Finishing	CCMT21.504PBF	CCMT060201PBF	0.004	0.091	1	○	●												
	CCMT21.508PBF	CCMT060202PBF	0.008	0.091	1	○	●												
	CCMT21.51PBF	CCMT060204PBF	0.016	0.091	1	○	●												

● : Line up

Reference pages: External toolholder → 3-37 -, Internal toolholder → 4-14 -



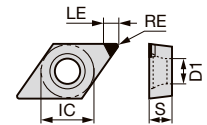




# DC



**55° Rhombic  
 Positive 7°  
 with hole**



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

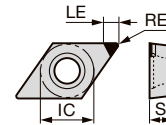
Application	Designation		Dimension (in)		No. of corners	Chipbreaker															
			RE	LE			DX110	DX120	DX140												
			Inch	Metric			0.008	0.016	0.031												
Finishing	DCMT 32.50.5 DIA	DCMT11T302-DIA	0.125	0.125	1	○	●	●	●												
	DCGW 32.50.5 DIA	DCGW11T302-DIA	0.125	0.125	1	○	●	●													
	1QP-DCGT 32.51 NS	1QP-DCGT11T304-NS	0.118	0.118	1	○	●	●													
	DCMT 32.51 DIA	DCMT11T304-DIA	0.118	0.118	1	○	●	●													
	DCGW 32.51 DIA	DCGW11T304-DIA	0.118	0.118	1	○	●	●													
	1QP-DCGT 32.52 NS	1QP-DCGT11T308-NS	0.118	0.118	1	○	●	●													
	DCGW 32.52 DIA	DCGW11T308-DIA	0.106	0.106	1	○	●	●													

● : Line up

# DC



**55° Rhombic  
 Positive 7°  
 with hole**



IC : 0.250"  
 S : 0.094"

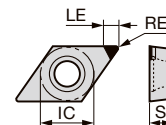
Application	Designation		Dimension (in)		No. of corners	Chipbreaker											
			RE	LE			PD2										
			Inch	Metric			0.004	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	
Finishing	DCMT21.504PBF	DCMT070201PBF	0.004	0.091	1	○	●										
	DCMT21.508PBF	DCMT070202PBF	0.008	0.091	1	○	●										
	DCMT21.504PF	DCMT070201PF	0.004	0.091	1	○	●										
	DCMT21.508PF	DCMT070202PF	0.008	0.091	1	○	●										

● : Line up

# DC



**55° Rhombic  
 Positive 7°  
 with hole**



IC : 0.375"  
 S : 0.156"

Application	Designation		Dimension (in)		No. of corners	Chipbreaker										
			RE	LE			PD1	PD2								
			Inch	Metric			0.004	0.016	0.008	0.016	0.004	0.008	0.016	0.031	0.004	0.008
Finishing	DCMT32.504PBF	DCMT11T301PBF	0.004	0.091	1	○	●	●								
	DCMT32.508PBF	DCMT11T302PBF	0.008	0.091	1	○	●	●								
	DCMT32.51PBF	DCMT11T304PBF	0.016	0.091	1	○	●	●								
	DCMT32.508PF	DCMT11T302PF	0.008	0.091	1	○	●	●								
	DCMT32.51PF	DCMT11T304PF	0.016	0.091	1	○	●	●								
	DCMW32.504	DCMW11T301	0.004	0.169	1	○	●	●								
	DCMW32.508	DCMW11T302	0.008	0.169	1	○	●	●								
	DCMW32.51	DCMW11T304	0.016	0.157	1	○	●	●								
	DCMW32.52	DCMW11T308	0.031	0.150	1	○	●	●								

● : Line up

Reference pages: External toolholder → 3-45 -, Internal toolholder → 4-18 -

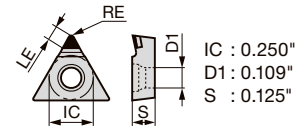
Grade  
 Insert  
 Ext. Toolholder  
 Int. Toolholder  
 Threading  
 Grooving  
 Shaper  
 Endmill  
 Drilling Tool  
 Technical Reference



# TC



## Triangular Positive 7° with hole



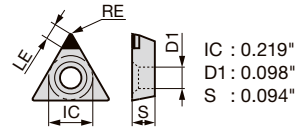
Application	Designation		Dimension (in)		No. of corners	Chipbreaker															
			RE	LE																	
			Inch	Metric																	
Finishing	TCMT 220.5 DIA	TCMT110302-DIA	0.008	0.094	1	○	●	●													
	1QP- TCMT 221	1QP-TCMT110304	0.016	0.087	1	○	●														
	TCMT 221 DIA	TCMT110304-DIA		0.087	1	○	●														

● : Line up

# TP



## Triangular Positive 11° with hole



Application	Designation		Dimension (in)		No. of corners	Chipbreaker															
			RE	LE																	
			Inch	Metric																	
Finishing	TPGA 73Y DIA	TPGA090202-DIA	0.008	0.094	1	○	●														
	TPGA 731 DIA	TPGA090204-DIA	0.016	0.087	1	○	●														

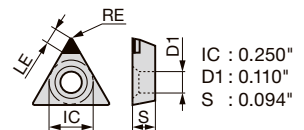
Tungaloy's standard hole specification (ISO non-compliant)

● : Line up

# TP



## Triangular Positive 11° with hole



Application	Designation		Dimension (in)		No. of corners	Chipbreaker															
			RE	LE																	
			Inch	Metric																	
Finishing	TPGA 21.50 DIA	TPGA110202-DIA	0.008	0.094	1	○	●														
	TPGA 21.51 DIA	TPGA110204-DIA	0.016	0.087	1	○	●														

Tungaloy's standard hole specification (ISO non-compliant)

● : Line up

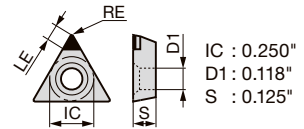
Reference pages: TC: External toolholder → 3-71, Internal toolholder → 4-24 -  
 TP: Internal toolholder → 4-25 -

## PCD Insert POSITIVE TYPE

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

**TP**

**Triangular  
Positive 11°  
with hole**



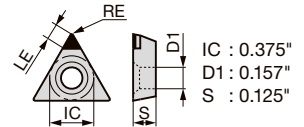
Application	Designation		Dimension (in)		No. of corners	Chipbreaker	DX140													
	Inch	Metric	RE	LE																
	Finishing	TPGA 220.5 DIA	TPGA110302-DIA	0.008				0.094	1	●	●	●	●	●	●	●	●	●	●	●
TPGA 221 DIA		TPGA110304-DIA	0.016	0.087	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
TPGA 222 DIA		TPGA110308-DIA	0.031	0.114	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Tungaloy's standard hole specification (ISO non-compliant)

● : Line up

**TP**

**Triangular  
Positive 11°  
with hole**



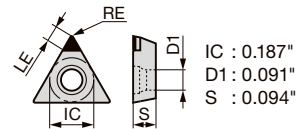
Application	Designation		Dimension (in)		No. of corners	Chipbreaker	DX140													
	Inch	Metric	RE	LE																
	Finishing	TPGA 320.5 DIA	TPGA160302-DIA	0.008				0.130	1	●	●	●	●	●	●	●	●	●	●	●
TPGA 321 DIA		TPGA160304-DIA	0.016	0.125	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
TPGA 322 DIA		TPGA160308-DIA	0.031	0.114	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Tungaloy's standard hole specification (ISO non-compliant)

● : Line up

**TP**

**Triangular  
Positive 11°  
with hole**



Application	Designation		Dimension (in)		No. of corners	Chipbreaker	DX140														
	Inch	Metric	RE	LE																	
	Finishing	TPGW 63Y DIA	TPGW080202-DIA	0.008				0.094	1	●	●	●	●	●	●	●	●	●	●	●	●
TPGW 631 DIA		TPGW080204-DIA	0.016	0.091	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

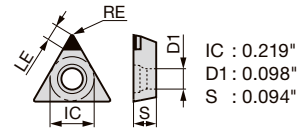
● : Line up

Reference pages: Internal toolholder → 4-25 -

# TP



## Triangular Positive 11° with hole



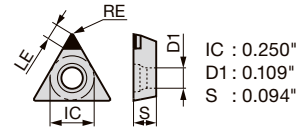
Application	Designation		Dimension (in)		No. of corners	Chipbreaker																	
	Inch	Metric	RE	LE																			
Finishing	TPGW 73Y DIA		TPGW090202-DIA		0.008	0.094	1		●	●													
	TPGW 731 DIA		TPGW090204-DIA		0.016	0.087	1		●														

● : Line up

# TP



## Triangular Positive 11° with hole



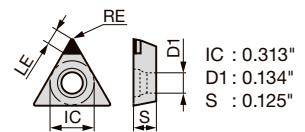
Application	Designation		Dimension (in)		No. of corners	Chipbreaker																	
	Inch	Metric	RE	LE																			
Finishing	TPGW 21.50.5 DIA		TPGW110202-DIA		0.008	0.094	1		●	●													
	TPGW 21.51 DIA		TPGW110204-DIA		0.016	0.087	1		●														

● : Line up

# TP



## Triangular Positive 11° with hole



Application	Designation		Dimension (in)		No. of corners	Chipbreaker																		
	Inch	Metric	RE	LE																				
Finishing	TPGW 2.520.5 DIA		TPGW130302-DIA		0.008	0.130	1		●	●														
	TPGW 2.521 DIA		TPGW130304-DIA		0.016	0.125	1		●															

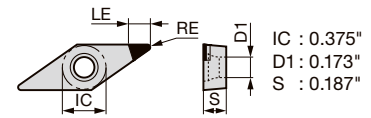
● : Line up



# VC



**35° Rhombic  
 Positive 7°  
 with hole**



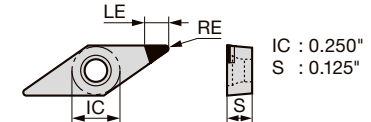
Application	Designation		Dimension (in)		No. of corners	Chipbreaker														
	Inch	Metric	RE	LE			DX110	DX120	DX140											
Finishing	VCMT 330.5 DIA	VCMT160402-DIA	0.008	0.189	1	○	●													
	VCGW 330.5 DIA	VCGW160402-DIA		0.189	1	○		●												
	1QP-VCGT 331 NS	1QP-VCGT160404-NS	0.016		3	○	●													
	VCMT 331 DIA	VCMT160404-DIA		0.173	1	○		●												
	VCGW 331 DIA	VCGW160404-DIA		0.173	1	○			●											
	1QP-VCGT 332 NS	1QP-VCGT160408-NS	0.031		3	○	●													

● : Line up

# VC



**35° Rhombic  
 Positive 7°  
 with hole**



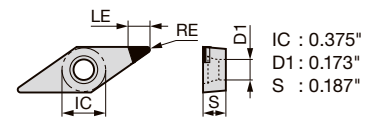
Application	Designation		Dimension (in)		No. of corners	Chipbreaker														
	Inch	Metric	RE	LE			PD1													
Finishing	VCMW2204	VCMW110301	0.004	0.118	1		●													
	VCMW2208	VCMW110302	0.008	0.130	1		●													
	VCMW221	VCMW110304	0.016	0.130	1		●													

● : Line up

# VB



**35° Rhombic  
 Positive 5°  
 with hole**



Application	Designation		Dimension (in)		No. of corners	Chipbreaker														
	Inch	Metric	RE	LE			DX110													
Finishing	1QP-VBGT 331 NS	1QP-VBGT160404-NS	0.016	3	1	○	●													
	1QP-VBGT 332 NS	1QP-VBGT160408-NS	0.031	3	1	○	●													

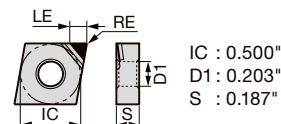
● : Line up

Reference pages: VC: External toolholder → 3-62 -, Internal toolholder → 4-19 -  
 VB: External toolholder → 3-59 -, Internal toolholder → 4-33



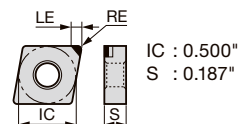
PCD Insert **NEGATIVE TYPE**

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

**CN****80° Rhombic  
with hole**

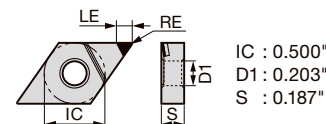
Application	Designation		Dimension (in)		No. of corners	Chipbreaker			
	Inch	Metric	RE	LE			DX110	DX120	DX140
	N Non-ferrous							●●●●●	
Finishing	1QP-CNMM 430.5	1QP-CNMM120402	0.008	0.109	1	○	●		
	CNMM 430.5-DIA	CNMM120402-DIA		0.138	1	○	●		
	1QP-CNMM 431	1QP-CNMM120404	0.016	0.109	1	○	●		
	CNMM 431-DIA	CNMM120404-DIA		0.138	1	○	●		
	CNGA 431 DIA	CNGA120404-DIA	0.031	0.138	1			●	
	CNGA 432 DIA	CNGA120408-DIA		0.109	1			●	

● : Line up

**CN****80° Rhombic  
with hole**

Application	Designation		Dimension (in)		No. of corners	Chipbreaker			
	Inch	Metric	RE	LE			PD2		
	N Non-ferrous							●●	
Finishing	CNMX431PF	CNMX120404PF	0.016	0.134	1		●		
	CNMX432PF	CNMX120408PF	0.031	0.134	1		●		

● : Line up

**DN****55° Rhombic  
with hole**

Application	Designation		Dimension (in)		No. of corners	Chipbreaker			
	Inch	Metric	RE	LE			DX120	DX140	DX160
	N Non-ferrous							●●●●●	
Finishing	DNMM 430.5-DIA	DNMM150402-DIA	0.008	0.130	1	○	●		
	DNMM 431-DIA	DNMM150404-DIA		0.122	1	○	●		
	DNGA 431 DIA	DNGA150404-DIA	0.016	0.122	1		●	●	
	DNGA 432 DIA	DNGA150408-DIA		0.109	1		●		

● : Line up

Reference pages: CN: External toolholder → **3-89 -**  
 DN: External toolholder → **3-92 -**







# 3. External Toolholders

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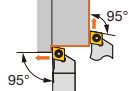
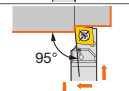
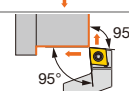
# Main products

	<p><b>MINIFORCE MINI FTURN</b> Economical double-sided inserts with excellent sharpness</p> 	<p>DXGU 3-74 - WXGU 3-72 - VXGU 3-78 -</p>
	<p><b>MINIFORCE MINI FTURN / J-SERIES</b> Stepped-head off-set toolholder</p> 	<p>DC** 3-48 CC** 3-37 VB** 3-60 -</p>
	<p><b>MINIFORCE MINI FTURN / J-SERIES</b> Round shank toolholder series</p>	<p>DC** 3-53 - DXGU 3-76 - VXGU 3-80 -</p>
	<p><b>MODUMTURN</b> Interchangeable head toolholder</p> 	<p>DC** 3-45 - WXGU 3-72 DXGU 3-74 - VB** 3-59 - CC** 3-37 - VXGU 3-78 - Shank 3-130 -</p>
	<p><b>J-SERIES</b> Back turning toolholder</p>	<p>3-108</p>
	<p><b>Y-axis holder Series</b>  Solves chip evacuation problems using gravity</p>	<p>3-50 -</p>
	<p><b>TFX Series</b>  Maximum depth of cut 5.0 mm</p>	<p>3-102 -</p>
	<p><b>DS-ACH</b> Instantly adjust cutting edge height, reducing time</p>	<p>3-42 -</p>
	<p><b>TBP</b>  High rigidity with vertically mounted inserts and screw clamps for back turning</p>	<p>3-111 -</p>

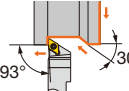
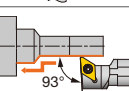
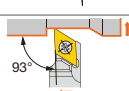
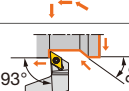

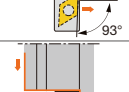
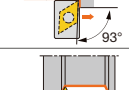
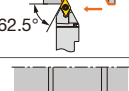
# Quick Guide

Inch

## CC\*\* inserts

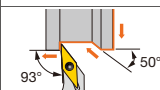
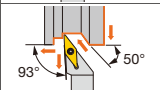
Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder			Clamping style		Offset	Page
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Screw-on	Back-clamp		
95°		<b>JSCL2CR/L</b> <b>SCLCR/L-N</b>	CC** 2/3			●	●	●						✓		without	<b>3-38</b> <b>3-40</b>
		<b>SCLCR-OH/</b> <b>OH2/OH3</b>	CC**3				●	●				●		✓		with	<b>3-38</b> <b>3-39</b>
		<b>SCLCR-F</b>	CC**3				●							✓		with	<b>3-41</b>

## DC\*\* inserts

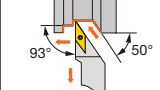
Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Cylindrical shank (shank dia.)				Holder			Clamping style		Offset	Page
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Screw-on	Back-clamp		
93°		<b>JSDJ2CR/L</b>	DC**2/3			●	●	●									✓		without	<b>3-47</b>	
		<b>JS-SDUCL</b>	DC**2/3									●	●				✓		-	<b>3-53</b>	
		<b>SDJCR-OH/OH</b> <b>2/OH3</b>	DC**3				●	●									✓		with	<b>3-46</b> <b>3-47</b>	
		<b>SDJCR-F</b>	DC**3				●										✓		with	<b>3-49</b>	
		<b>Y-SDJCR-OH/</b> <b>OH2</b>	DC**2/3			●	●								●	●	✓		without	<b>3-50</b>	
		<b>Y-SDJCR</b>	DC**2/3			●	●	●							●		✓		without	<b>3-51</b>	
62.5°		<b>JSDNCN</b>	DC**2/3			●	●	●									✓		with	<b>3-56</b>	
		<b>Y-SDNCN</b>	DC**3				●							●		✓		with	<b>3-57</b>		



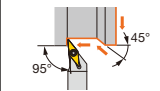
## VB\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder			Clamping style		Offset	Page
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Screw-on	Back-clamp		
93°		JSVJ2BR/L	VB**2			●	●	●						✓		without	3-59
		JSVJBR/L	VB**2/3							●	●			✓		with	3-61

## VC\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder			Clamping style		Offset	Page
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Screw-on	Back-clamp		
93°		SVJCR/L	VC**3						●	●	●				✓	with	3-63

## VP\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder			Clamping style		Offset	Page
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Screw-on	Back-clamp		
95°		JSVL2PR/L	VP**6				●	●						✓		without	3-68

# Quick Guide

Inch



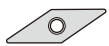
## WXGU inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder			Clamping style		Offset	Page	
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Screw-on	Back-clamp			
95°		<b>JSWL2XR/L</b>	WXGU			●	●	●							✓		without	<b>3-73</b>
		<b>JPWL2XR/L</b>	WXGU			●	●	●							✓		without	<b>3-73</b>



## DX\*U inserts





Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Cylindrical shank (shank dia.)				Holder			Clamping style		Offset	Page
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Screw-on	Back-clamp		
93°		<b>JSDJ2XR/L</b>	DX*U			●	●	●									✓		without	<b>3-75</b>	
		<b>JPDJ2XR/L</b>	DX*U			●	●	●										✓		without	<b>3-75</b>
		<b>JS-SDUXL</b>	DX*U								●	●	●					✓		-	<b>3-76</b>





## VXGU inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Cylindrical shank (shank dia.)				Holder			Clamping style		Offset	Page	
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Screw-on	Back-clamp			
93°		<b>JSVJ2XR/L</b>	VXGU			●	●	●										✓		without	<b>3-79</b>	
		<b>JPVJ2XR/L</b>	VXGU			●	●	●											✓		without	<b>3-79</b>
		<b>JS***-SVUXL</b>	VXGU								●	●	●					✓		-	<b>3-80</b>	

## TN\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)						Holder			Clamping style		Offset	Page		
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Lever-lock			Double-clamp	
91°		PTGNR/L	TN**2							●	●				✓		with	3-83
91°		PTGNR/L -CHP	TN**2/3							●	●			●	✓		with	3-84
100°		PTXNR-N	TN**3			●	●	●							✓		with	3-86
105°		ATQNR/L	TN**3							●	●					✓	with	3-88

## CN\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)						Holder			Clamping style		Offset	Page		
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Lever-lock			Double-clamp	
95°		PCLNR/L	CN**/ GN**3							●	●			●	✓		with	3-90
95°		PCLNR/L-CHP	CN**/ GN**3/4							●	●			●	✓		with	3-91

# Quick Guide

Inch



## DN\*\* inserts

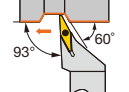
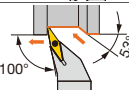
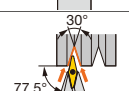
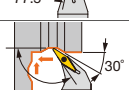
Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder			Clamping style		Offset	Page	
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Lever-lock	Double-clamp			
93°		<b>PDJNR/L</b>	DN**/ FN**3						●	●	●				✓		with	<b>3-92</b>
		<b>PDJNR/L-CHP</b>	DN**/ FN**3/4							●	●		●		✓		with	<b>3-93</b>
107.5°		<b>ADQNR/L</b>	DN**/ FN**3/4						●	●						✓	with	<b>3-94</b>



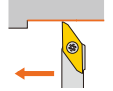
## V/YN\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder			Clamping style			Offset	Page	
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Lever-lock	Back-clamp	Double-clamp			
93°		<b>JPVJ2NR/L</b>	VN**2.3				●	●								✓		without	<b>3-95</b>
		<b>PVJNR/L-CHP</b>	VN**2.3/3, YN**3						●	●		●		✓			with	<b>3-95</b>	
72.5°		<b>AVVNN</b>	VN**2.3/3, YN**3						●	●						✓	with	<b>3-96</b>	
117.5°		<b>PVQNR/L-CHP</b>	VN**/YN3						●	●		●		✓			with	<b>3-96</b>	

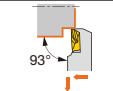

**YWMT inserts**

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder			Clamping style		Offset	Page
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Modular head	Y-axis feed	Through-coolant	Screw-on	Back-clamp		
93°		<b>SYJBR/L</b>	YWMT16							●	●				✓		with <b>3-97</b>
100°		<b>SYHBR/L</b>	YWMT16							●	●				✓		with <b>3-97</b>
77.5°		<b>SYIBN</b>	YWMT16							●	●				✓		with <b>3-98</b>
122.5°		<b>SYQBR/L</b>	YWMT16							●	●				✓		with <b>3-98</b>


**CSVF inserts**

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Clamping style		Offset	Page
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Screw-on	Back-clamp		
91°		<b>CSVRL</b>	CSVF			●	●					✓		with <b>3-100</b>


**TF\*\* inserts**

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder	Clamping style		Offset	Page
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Through-coolant	Screw-on	Back-clamp		
93°		<b>TFTR-OH2/OH3</b>	TFX33/TF33					●			●	✓		with <b>3-102</b>	

# Quick Guide

Inch



## TBP inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder		Cutting edge effective length	Cutting depth maximum	Clamping style		Offset	Page
				0.250 x 0.250	0.375 x 0.375	0.375 x 0.472	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Y-axis feed	Through-coolant			Screw-on	Back-clamp		
Back turning		<b>TBPR-OH/OH2/OH3</b>	TBP			●	●	●				●	3 mm - 4.8 mm	5.3 mm	✓		-	<b>3-111</b> <b>3-112</b>
		<b>TBPR/L</b>	TBP	●			●	●					3 mm - 4.8 mm	5.3 mm	✓		-	<b>3-112</b>
		<b>Y-TBPR-OH</b>	TBP				●				●	●	3 mm - 4.8 mm	-	✓		-	<b>3-113</b>
		<b>Y-TBPR</b>	TBP	●			●	●			●		3 mm - 4.8 mm	-	✓		-	<b>3-113</b>



## TBPA inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder		Cutting edge effective length	Cutting depth maximum	Clamping style		Offset	Page
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Through-coolant	Screw-on			Back-clamp			
Back turning		<b>CTPAR/L-OH / OH2</b>	TBPA				●	●				●	4.5 mm - 6.3 mm	5.3 mm - 6.8 mm	✓		-	<b>3-116</b> <b>3-117</b>
		<b>CTPAR/L</b>	TBPA				●	●					4.5 mm - 6.3 mm	5.3 mm - 6.8 mm	✓		-	<b>3-117</b>



## TBVC inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Cutting edge effective length	Cutting depth maximum	Clamping style			Offset	Page	
				0.250 x 0.250	0.375 x 0.375	0.375 x 0.472	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000			Clamp-on	Screw-on	Back-clamp			
Back turning		<b>TBVCR-F</b>	TBVC VC..1103..				●					7 mm	8.5 mm	✓			-	<b>3-121</b>



## TBMH inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder		Cutting edge effective length	Cutting depth maximum	Clamping style		Offset	Page
				0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Y-axis feed	Through-coolant			Screw-on	Back-clamp		
Back turning		<b>GTTT-OH/OH2/OH3</b>	TBMH				●	●				●	0.3 mm - 1.3 mm	1.6 mm	✓		-	<b>3-123</b> <b>3-124</b>
		<b>GTTT</b>	TBMH			●	●	●	●				0.3 mm - 1.3 mm	1.6 mm - 2.7 mm	✓		-	<b>3-125</b>
		<b>Y-GTTT-OH</b>	TBMH				●				●	●	0.3 mm - 1.3 mm	1.6 mm	✓		-	<b>3-126</b>
		<b>Y-GTTT</b>	TBMH			●	●	●			●		0.3 mm - 1.3 mm	1.6 mm	✓		-	<b>3-126</b>



## TBDP inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Holder	Cutting edge effective length	Cutting depth maximum	Clamping style			Offset	Page	
				0.250 x 0.250	0.375 x 0.375	0.375 x 0.472	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000				Y-axis feed	Clamp-on	Screw-on			Back-clamp
Back turning		<b>TBDPR/L</b>	TBDP			●	●	●					3.5 mm	3 mm - 5 mm	✓			-	<b>3-120</b>



# Quick Guide

Metric



## CC\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)													
				8 x 8	10 x 10	10 x 12	10 x 14	10 x 15	10 x 20	12 x 12	12 x 14	12 x 16	12 x 18	12 x 24	16 x 16	16 x 20	20 x 20
95°		<b>QC-JSCL2CR-Y-CHP</b>	CC**09								●		●			●	●
		<b>QC-JSCL2CR-CHP</b>	CC**06/09			●					●		●			●	●
		<b>SCLCR-OH/OH2/OH3</b>	CC**09			●	●					●				●	
		<b>JSCL2CR/L SCLCR/L-N</b>	CC**06/09	●	●						●					●	
		<b>JTCL2CR/L</b>	CC**06/09		●						●					●	
		<b>JSCLCR-F15 SCLCR-F</b>	CC**09						●	●			●	●	●		●
		<b>DS-SCLL-ACH</b>	CC**09														
		<b>DS-SCLL</b>	CC**06/09														
		<b>QR-SCLCL-CHP</b>	CC**09														
		<b>C3SCLCL-CHP</b>	CC**09														

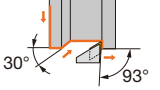
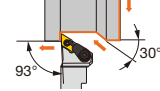
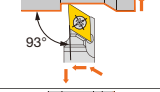
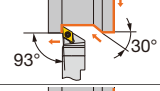
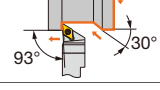
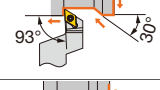
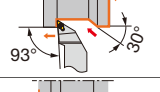

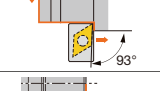
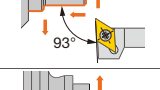
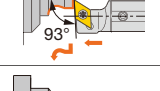
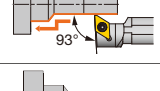
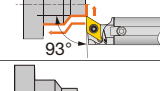
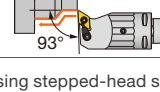
\* When using stepped-head shank, the "Offset" will be "with".

	Cylindrical shank (shank dia.)									Tung Cap	Holder			Clamping style		Offset	Page
	ø14	ø15.875	ø16	ø19.05	ø20	ø22	ø25	ø25.4	ø32		C3	Modular head	Y-axis feed	Through-coolant	Screw-on		
											●	●	●	✓		without*	3-37
											●		●	✓		without*	3-37
													●	✓		with	3-38 3-39
														✓		without	3-38 3-40
															✓	without	3-40
														✓		with	3-41
			●	●	●	●	●	●						✓		-	3-42
	●	●	●	●	●	●	●	●						✓		-	3-43
			●	●	●						●		●	✓		-	3-44
									●			●	✓			-	3-44

# Quick Guide

Metric

## DC\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)													
				8 x 8	10 x 10	10 x 12	10 x 14	10 x 15	10 x 20	10 x 16	12 x 10	12 x 12	12 x 14	12 x 16	12 x 18	12 x 24	
93°		<b>QC-JSDJ2CR-Y-CHP</b>	DC**11									●		●			
		<b>QC-JSDJ2CR-CHP</b>	DC**07/11			●						●		●			
		<b>SDJCR-OH/OH 2/OH3</b>	DC**11				●						●				
		<b>JSDJ2CR/L SDJC-N-OH</b>	DC**07/11	●	●								●				
		<b>JTDJ2CR/L</b>	DC**07/11		●								●				
		<b>JSDJCR-F15 SDJCR-F</b>	DC**07/11						●	●	●				●	●	●
		<b>JSDJCR/L</b>	DC**07/11	●	●								●				
		<b>Y-SDJCR-OH/OH2</b>	DC**11										●				
		<b>Y-SDJCR</b>	DC**07/11		●								●				
		<b>CH-SDUCL</b>	DC**11		●								●				
		<b>DS-SDUL-ACH</b>	DC**11														
		<b>JS-SDUCL DS-SDUL</b>	DC**07/11														
		<b>QR-SDUCL-CHP</b>	DC**11														
		<b>C3SDUCL-CHP</b>	DC**11														

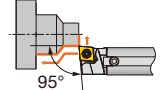
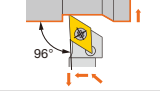
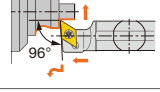
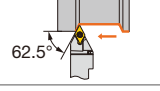
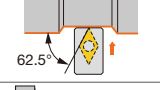
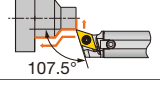
\* When using stepped-head shank, the "Offset" will be "with".

	Cylindrical shank (shank dia.)				Tung Cap	Holder			Clamping style		Offset	Page									
	16 x 16	16 x 20	16 x 28	20 x 20		ø14	ø15.875	ø16	ø19.05	ø20			ø22	ø25	ø25.4	ø32	C3	Modular head	Y-axis feed	Through-coolant	Screw-on
	●	●													●	●	●	✓		without*	3-45
	●	●													●		●	✓		without*	3-45
	●																●	✓		with	3-46 3-47
	●																	✓		without	3-47
	●																	✓		without	3-48
		●	●															✓		with	3-48 3-49
	●																	✓		with	3-49
	●															●	●	✓		without	3-50
	●															●		✓		without	3-51
	●			●														✓		-	3-51
						●	●	●	●	●	●	●						✓		-	3-52
						●	●	●	●	●	●	●						✓		-	3-53
						●	●	●							●		●	✓		-	3-54
													●				●	✓		-	3-54

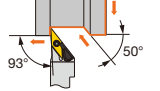
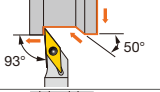

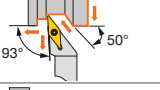
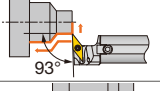
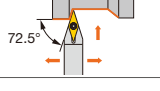
# Quick Guide

Metric

## DC\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)																	
				8 x 8	10 x 10	10 x 12	10 x 14	10 x 15	10 x 20	10 x 16	12 x 10	12 x 12	12 x 14	12 x 16	12 x 18	12 x 24					
95°		<b>QR-SDLCL-CHP</b>	DC**11																		
96°		<b>SDXCR-N</b>	DC**11		●																●
		<b>DS-SDXL</b>	DC**11																		
62.5°		<b>JSDNCN</b> <b>SDNCN</b>	DC**07/11	●	●																●
		<b>Y-SDNCN</b>	DC**11																		●
107.5°		<b>QR-SDQCL-CHP</b>	DC**11																		

## VB\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)					Cylindrical shank (shank dia.)			Holder		Clamping style		Offset	Page	
				10 x 10	12 x 12	12 x 16	16 x 16	16 x 20	ø16	ø19.05	ø20	Modular head	Through-coolant	Screw-on	Back-clamp			
93°		<b>QC-JSVJ2BR-CHP</b>	VB**11		●	●	●	●					●	●	✓		without*	<b>3-59</b>
		<b>JSVJ2BR/L</b>	VB**11	●	●		●								✓		without	<b>3-59</b>
		<b>JSVJBR-F15</b>	VB**11			●		●							✓		with	<b>3-60</b>
		<b>JSVJBR/L</b>	VB**11	●	●		●								✓		with	<b>3-60</b>
		<b>QR-SVUBL-CHP</b>	VB**11							●	●	●	●	●	✓		-	<b>3-61</b>
72.5°		<b>JSVNBN</b>	VB**11	●	●		●							✓		with	<b>3-61</b>	

\* When using stepped-head shank, the "Offset" will be "with".

	Cylindrical shank (shank dia.)				Tung Cap	Holder			Clamping style		Offset	Page									
	16 x 16	16 x 20	16 x 28	20 x 20		ø14	ø15.875	ø16	ø19.05	ø20			ø22	ø25	ø25.4	ø32	C3	Modular head	Y-axis feed	Through-coolant	Screw-on
							●	●	●						●		●	✓		-	3-55
	●																	✓		without	3-55
								●	●		●							✓		-	3-56
	●			●														✓		with	3-56 3-57
	●															●		✓		without	3-57
						●	●	●							●		●	✓		-	3-58

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9

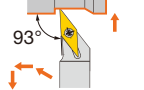
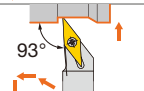
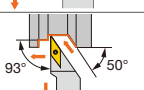
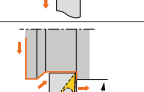
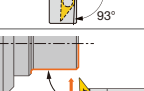
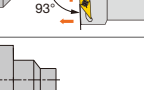
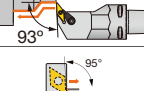

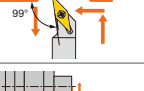
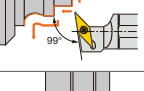
Technical Reference

10

# Quick Guide

Metric

## VC\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)							Cylindrical shank (shank dia.)					
				8 x 8	10 x 10	10 x 12	10 x 14	12 x 12	12 x 14	16 x 16	20 x 20	ø14	ø15.875	ø16	ø19.05	ø20
93°		SVJCR-OH	VC**1103				●		●	●						
		SVJCR/L	VC**1103	●	●			●		●						
		SVJCR/L	VC**1604								●	●				
		Y-SVJCR-OH	VC**1103					●		●						
		CH-SVUCL	VC**1103		●			●		●	●					
		C3SVUCL-CHP	VC**1103													
95°		Y-SVXCL	VC**1103					●								
99°		SVXCR/L-N	VC**1103			●		●								
		DS-SVXL	VC**1103									●	●	●	●	
72.5°		SVVCN	VC**1103	●	●			●		●	●					

\* When using stepped-head shank, the "Offset" will be "with".



	ø22	ø25	ø25.4	Tung Cap C3	Holder		Clamping style		Offset	Page
					Y-axis feed	Through-coolant	Screw-on	Back-clamp		
						●	✓		without	3-62
							✓		without	3-62
							✓		with	3-63
					●	●	✓		without	3-63
							✓		-	3-64
				●	●		✓		-	3-64
					●		✓		without	3-65
							✓		without	3-65
	●	●	●				✓		-	3-66
							✓		with	3-66 3-67

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9

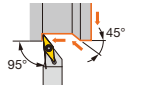

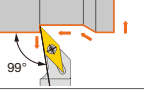
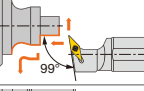
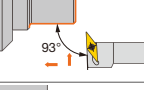
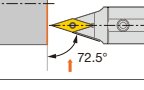
Technical Reference

10

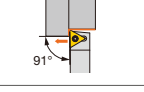
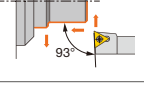
# Quick Guide

Metric

## VP\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)				Cylindrical shank (shank dia.)					Clamping style		Offset	Page
				10 x 10	10 x 12	12 x 12	16 x 16	ø16	ø19.05	ø20	ø22	ø25.4	Screw-on	Back-clamp		
95°		<b>JSVL2PR/L</b>	VP**08/11	●		●	●						✓		without	<b>3-68</b>
117.5°		<b>JSVP2PR/L</b>	VP**08/11	●		●	●						✓		without	<b>3-68</b>
99°		<b>SVXPR/L</b>	VP**11		●	●							✓		without	<b>3-69</b>
		<b>DS-SVXP</b>	VP**08						●	●	●	●	✓		-	<b>3-69</b>
93°		<b>CH-SVUPL</b>	VP**08	●		●							✓		-	<b>3-70</b>
72.5°		<b>DS-SWVPN-ACH</b>	VP**11					●	●	●	●	●	✓		-	<b>3-70</b>

## TC\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)					Clamping style		Offset	Page	
				8 x 8	8 x 10	10 x 10	12 x 12	16 x 16	Screw-on	Back-clamp			
91°		<b>JSTACR/L</b>	TC**08/11	●		●	●	●		✓		without	<b>3-71</b>
93°		<b>CH-STUCL</b>	TC**09			●	●			✓		-	<b>3-71</b>



# WXGU inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)						Holder			Clamping style		Offset	Page		
				10 x 10	10 x 12	10 x 16	12 x 12	12 x 16	16 x 16	16 x 20	20 x 20	Modular head	Y-axis feed	Through-coolant			Screw-on	Back-clamp
95°		<b>QC-JSWL2XR-Y-CHP</b>	WXGU				●	●	●	●		●	●	●	✓		without*	<b>3-72</b>
		<b>QC-JSWL2XR-CHP</b>	WXGU		●		●	●	●	●		●		●	✓		without*	<b>3-72</b>
		<b>JSWL2XR/L</b>	WXGU	●			●		●		●				✓		without	<b>3-73</b>
		<b>JPWL2XR/L</b>	WXGU	●			●		●							✓	without	<b>3-73</b>

\* When using stepped-head shank, the "Offset" will be "with".

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

# Quick Guide

Metric



## DX\*U inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)						Cylindrical shank (shank dia.)							
				10 x 10	10 x 12	10 x 16	12 x 12	12 x 16	16 x 16	16 x 20	20 x 20	ø14	ø15.875	ø16	ø19.05	ø20	
		<b>QC-JSDJ2XR-Y-CHP</b>	DX*U				●	●	●	●							
		<b>QC-JSDJ2XR-CHP</b>	DX*U		●		●	●	●	●							
93°		<b>JSDJ2XR/L</b>	DX*U	●			●		●			●					
		<b>JPDJ2XR/L</b>	DX*U	●			●		●								
		<b>JS-SDUXL</b>	DX*U									●	●	●	●	●	
		<b>QR-SDUXL-CHP</b>	DX*U											●	●	●	
95°		<b>QR-SDLXL-CHP</b>	DX*U											●	●	●	
107.5°		<b>QR-SDQXL-CHP</b>	DX*U											●	●	●	
62.5°		<b>QC-JSDNXR-CHP</b>	DX*U		●		●	●	●	●							

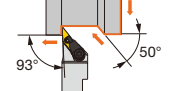
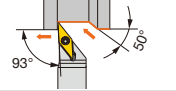
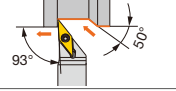
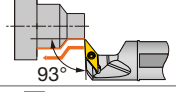
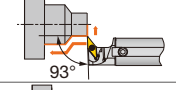
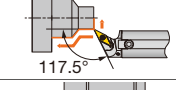
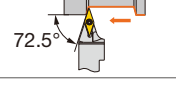
\* When using stepped-head shank, the "Offset" will be "with".

				Holder			Clamping style		Offset	Page
	ø22	ø25	ø25.4	Modular head	Y-axis feed	Through-coolant	Screw-on	Back-clamp		
				●	●	●	✓		without*	3-74
				●		●	✓		without*	3-74
							✓		without	3-75
								✓	without	3-75
	●	●	●				✓		-	3-76
				●		●	✓		-	3-76
				●		●	✓		-	3-77
				●		●	✓		-	3-77
				●		●	✓		with	3-78

# Quick Guide

Metric

## VXGU inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)						Cylindrical shank (shank dia.)						
				10 x 10	10 x 12	10 x 16	12 x 12	12 x 16	16 x 16	16 x 20	20 x 20	ø15.875	ø16	ø19.05	ø20	ø22
93°		<b>QC-JSVJ2XR-CHP</b>	VXGU		●		●	●	●	●						
		<b>JSVJ2XR/L</b>	VXGU	●			●		●		●					
		<b>JPVJ2XR/L</b>	VXGU	●			●		●							
		<b>JS***-SVUXL</b>	VXGU									●	●	●	●	●
		<b>QR-SVUXL-CHP</b>	VXGU										●	●	●	
117.5°		<b>QR-SVQXL-CHP</b>	VXGU									●	●	●		
72.5°		<b>QC12-JSVXR-CHP</b>	VXGU		●		●	●	●	●						

\* When using stepped-head shank, the "Offset" will be "with".

	Holder		Clamping style		Offset	Page	
	ø25	ø25.4	Modular head	Through-coolant			Screw-on
			●	●	✓	without*	<b>3-78</b>
					✓	without	<b>3-79</b>
						without	<b>3-79</b>
	●	●			✓	-	<b>3-80</b>
			●	●	✓	-	<b>3-80</b>
			●	●	✓	-	<b>3-81</b>
			●	●	✓	with	<b>3-81</b>

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9

Technical Reference

10



# Quick Guide

Metric



## TN\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)					Cylindrical shank (shank dia.)						Tung Cap	
				10 x 16	12 x 16	16 x 16	16 x 20	20 x 20	ø16	ø19.05	ø20	ø22	ø25	ø25.4		C3
95°		<b>QC-PTL2NR-Y-CHP</b>	TN**1604			●	●									
		<b>QC-PTL2NR-CHP</b>	TN**1604			●	●									
91°		<b>JTTLNR/L</b>	TN**1604		●	●										
		<b>PTGNR/L</b>	TN**1104/ 1604			●		●								
		<b>PTGNR/L -CHP</b>	TN**1104/ 1604					●								
100°		<b>PTXNR-N</b>	TN**1604	●	●	●										
		<b>DS-PTXL-ACH</b>	TN**1604						●	●	●	●	●	●		
93°		<b>DS-PTXL</b>	TN**1604						●	●	●	●		●		
		<b>C3PTUNL</b>	TN**1604													●
105°		<b>ATQNR/L</b>	TN**1604					●								

	Holder			Clamping style				Offset	Page
	Modular head	Y-axis feed	Through-coolant	Lever-lock	Back-clamp	Double-clamp	Screw-on		
	●	●	●	✓				without	3-82
	●		●	✓				without	3-82
					✓			without	3-83
				✓				with	3-83
			●	✓				with	3-84
				✓				with	3-84
			●	✓				without	3-85
				✓				without	3-86
				✓				-	3-87
				✓				-	3-87
			●	✓				-	3-88
						✓		with	3-88

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9

Technical Reference

10

# Quick Guide

Metric



## CN\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)			Holder	Clamping style			Offset	Page
				16 x 16	16 x 20	20 x 20		Through-coolant	Lever-lock	Double-clamp		
95°		<b>PCL2NR</b> <b>PCLNR-N</b>	CN**1204		●	●			✓		without	<b>3-89</b>
		<b>PCLNR/L</b>	CN**0904/ 1204	●		●			✓		with	<b>3-90</b>
		<b>PCLNR/L-CHP</b>	CN**0904/ 1204			●	●		✓		with	<b>3-91</b>



## DN\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)			Holder	Clamping style			Offset	Page
				16 x 16	16 x 25	20 x 20		Through-coolant	Lever-lock	Double-clamp		
93°		<b>PDJNR/L</b>	DN**1104/ 1504/1506	●		●			✓		with	<b>3-92</b>
		<b>PDJNR/L-CHP</b>	DN**1104/ 1504			●	●		✓		with	<b>3-93</b>
107.5°		<b>ADQNR/L</b>	DN**1104/ 1504/1506			●				✓	with	<b>3-94</b>



## V/YN\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)			Holder	Clamping style			Offset	Page	
				12 x 12	16 x 16	20 x 20		Through-coolant	Lever-lock	Back-clamp			Double-clamp
93°		<b>JPVJ2NR/L</b>	VN**1204	●	●					✓		without	<b>3-95</b>
		<b>PVJNR/L-CHP</b>	VN**1204 V/YN**1604			●	●		✓			with	<b>3-95</b>
72.5°		<b>AVVNN</b>	VN**1204 V/YN**1604			●					✓	with	<b>3-96</b>
117.5°		<b>PVQNR/L-CHP</b>	V/YN**1604			●	●		✓			with	<b>3-96</b>



## YWMT inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)				Clamping style		Offset	Page
				20 x 20				Screw-on	Back-clamp		
93°		<b>SYJBR/L</b>	YWMT16	●	●	●	●	✓		with	<b>3-97</b>
100°		<b>SYHBR/L</b>	YWMT16	●	●	●	●	✓		with	<b>3-97</b>
77.5°		<b>SYIBN</b>	YWMT16	●	●	●	●	✓		with	<b>3-98</b>
122.5°		<b>SYQBR/L</b>	YWMT16	●	●	●	●	✓		with	<b>3-98</b>



## JV\*N inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)				Clamping style		Offset	Page
				6 x 6	7 x 7	8 x 8	10 x 10	Screw-on	Back-clamp		
Front turning		<b>JSXXR/L05</b>	JVFN45R/L	●	●	●	●	✓		without	<b>3-99</b>



## CSVF inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)					Clamping style		Offset	Page
				7 x 7	8 x 8	9.5 x 9.5	10 x 10	12 x 12	Screw-on	Back-clamp		
91°		<b>CSVRL</b>	CSVF	●	●	●	●	●	✓		with	<b>3-100</b>



## CSVB inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)					Cutting edge effective length	Cutting depth maximum	Clamping style		Offset	Page
				7 x 7	8 x 8	9.5 x 9.5	10 x 10	12 x 12			Screw-on	Back-clamp		
Back turning		<b>CSVRL</b>	CSVB	●	●	●	●	●	0.7 mm - 1 mm	2 mm	✓		with	<b>3-105</b>

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

# Quick Guide

Metric



## TF\*\* inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)						Holder	Clamping style		Offset	Page	
				10 x 10	10 x 14	12 x 12	12 x 14	16 x 16	20 x 20		Through-coolant	Screw-on			Back-clamp
93°		<b>TFTR-OH</b>	TFX33/TF33		●		●	●			●	✓		with	<b>3-102</b>
		<b>TFTR</b>	TFX33/TF33	●		●		●	●			✓		without	<b>3-103</b>



## TBP inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)						Cylindrical shank (shank dia.)			Holder			
				8 x 8	10 x 10	10 x 12	12 x 12	13 x 13	16 x 16	ø19.05	ø20	ø25.4	Y-axis feed	Through-coolant		
Back turning		<b>TBPR-OH/OH2/OH3</b>	TBP			●	●			●					●	
		<b>TBPR/L</b>	TBP	●	●		●			●						
		<b>Y-TBPR-OH</b>	TBP				●			●					●	●
		<b>Y-TBPR</b>	TBP		●		●								●	
		<b>DS-TBPL</b>	TBP								●	●	●			



## TBPA inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)				Holder	Cutting edge effective length	Cutting depth maximum	Clamping style		Offset	Page
				10 x 10	12 x 12	16 x 16	20 x 20				Through-coolant	Screw-on		
Back turning		<b>TBPAR-OH</b>	TBPA		●	●	●	●	4.5 mm - 6.3 mm	5.3 mm - 6.8 mm	✓		-	<b>3-116</b>
		<b>CTPAR/L-OH /OH2</b>	TBPA		●	●		●	4.5 mm - 6.3 mm	5.3 mm - 6.8 mm	✓		-	<b>3-116</b> <b>3-117</b>
		<b>CTPAR/L</b>	TBPA	●	●	●	●		4.5 mm - 6.3 mm	5.3 mm - 6.8 mm	✓		-	<b>3-117</b>
		<b>CH-TBPAL</b>	TBPA			●	●			4.5 mm - 6.3 mm	5.3 mm - 6.8 mm	✓		-

	Cutting edge effective length	Cutting depth maximum	Clamping style		Offset	Page
			Screw-on	Back-clamp		
	3 mm - 4.8 mm	5.3 mm	✓		-	<b>3-111</b> <b>3-112</b>
	3 mm - 4.8 mm	5.3 mm	✓		-	<b>3-112</b>
	3 mm - 4.8 mm	-	✓		-	<b>3-113</b>
	3 mm - 4.8 mm	-	✓		-	<b>3-113</b>
	3 mm - 4.8 mm	5.3 mm	✓		-	<b>3-113</b>

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9

Technical Reference

10

# Quick Guide

Metric



## J10E inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)						Holder		Cutting edge effective length	Cutting depth maximum	Clamping style		Page
				10 x 10	10 x 12	12 x 12	12 x 16	16 x 16	16 x 20	Modular head	Through-coolant			Screw-on	Back-clamp	
Back turning		<b>QC-JSEGR-CHP</b>	J10ER		●	●	●	●	●	●	●	3 mm	3.3 mm	✓		<b>3-108</b>
		<b>JSEGR/L</b>	J10ER/L	●		●		●				3 mm	3.3 mm	✓		<b>3-108</b>

\* When using stepped-head shank, the "Offset" will be "with".



## TBVC inserts

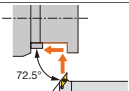
Cutting edge angle	Application	Designation	Insert	Square shank (height x width)				Cutting edge effective length	Cutting depth maximum	Clamping style		Offset	Page
				10 x 10	12 x 12	16 x 16	20 x 20			Screw-on	Back-clamp		
Back turning		<b>TBVC VC..1103..</b>	TBVC VC..1103..	●	●	●	●	7 mm	8.5 mm	✓		-	<b>3-121</b>



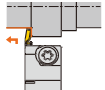
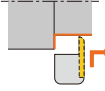
## TBMH inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)						Cylindrical shank (shank dia.)						
				8 x 8	8 x 10	10 x 10	10 x 12	12 x 12	16 x 16	20 x 20	ø14	ø15.875	ø16	ø19.05	ø20	ø22
Back turning		<b>GTTR-OH/OH2/OH3</b>	TBMH				●	●	●							
		<b>GTTR</b>	TBMH	●		●		●	●	●						
		<b>Y-GTTR-OH</b>	TBMH					●	●							
		<b>Y-GTTR</b>	TBMH			●		●								
		<b>DS-GTTL</b>	TBMH								●	●	●	●	●	●
		<b>CH-GTTL</b>	TBMH			●		●	●							

## VC.. inserts

Cutting edge angle	Application	Designation	Insert	Square shank (height x width)		Cutting edge effective length	Cutting depth maximum	Clamping style		Offset	Page
				16 x 16	20 x 20			Screw-on	Back-clamp		
Back turning 		<b>CH-SVXCL</b>	VC..1103..	●	●	7 mm	7 mm	✓		-	<b>3-122</b>

## TBDP inserts

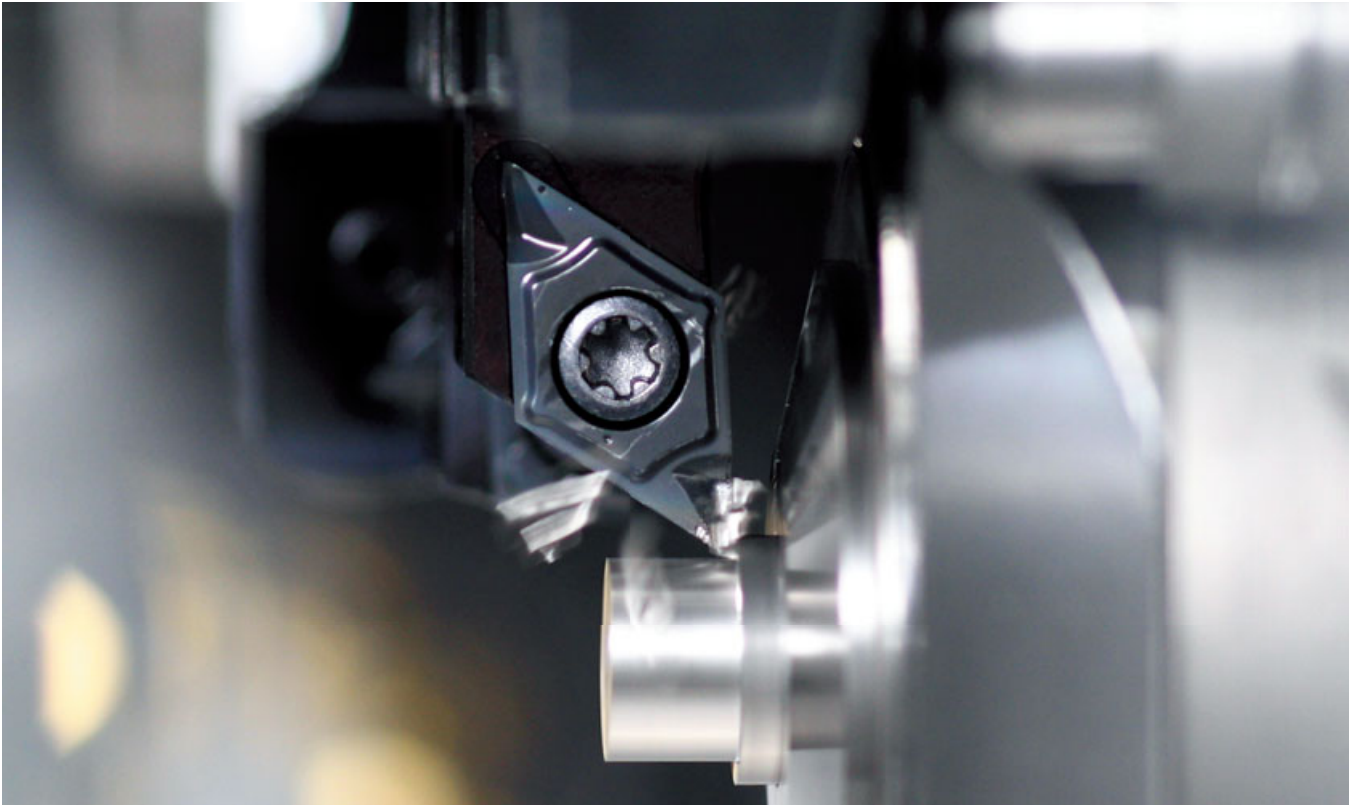
Cutting edge angle	Application	Designation	Insert	Square shank (height x width)				Holder	Cutting edge effective length	Cutting depth maximum	Clamping style			Offset	Page
				10 x 10	12 x 12	16 x 16	20 x 20				Clamp-on	Screw-on	Back-clamp		
Back turning 		<b>TBDPR/L</b>	TBDP	●	●	●	●		3.5 mm	3 mm - 5 mm	✓			-	<b>3-120</b>
Back turning 		<b>Y-TBDPR</b>	TBDP		●			●	3.5 mm	5 mm	✓			-	<b>3-120</b>

	ø25	ø25.4	ø32	Holder		Cutting edge effective length	Cutting depth maximum	Clamping style		Offset	Page
				Y-axis feed	Through-coolant			Screw-on	Back-clamp		
				●		0.3 mm - 1.3 mm	1.6 mm	✓		-	<b>3-123</b> <b>3-124</b>
						0.3 mm - 1.3 mm	1.6 mm - 2.7 mm	✓		-	<b>3-125</b>
				●	●	0.3 mm - 1.3 mm	1.6 mm	✓		-	<b>3-126</b>
				●		0.3 mm - 1.3 mm	1.6 mm	✓		-	<b>3-126</b>
	●	●	●			0.3 mm - 1.3 mm	1.6 mm	✓		-	<b>3-127</b>
						0.3 mm - 1.3 mm	1.5 mm	✓		-	<b>3-127</b>



# TMV Chipbreaker

For front turning | Specially designed for vibration cutting on automatic lathes



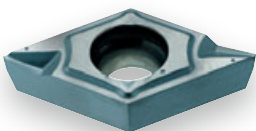
## N°1 Chipbreaker for vibration machining

**Reliably long tool life and stable chip evacuation during vibration cutting**

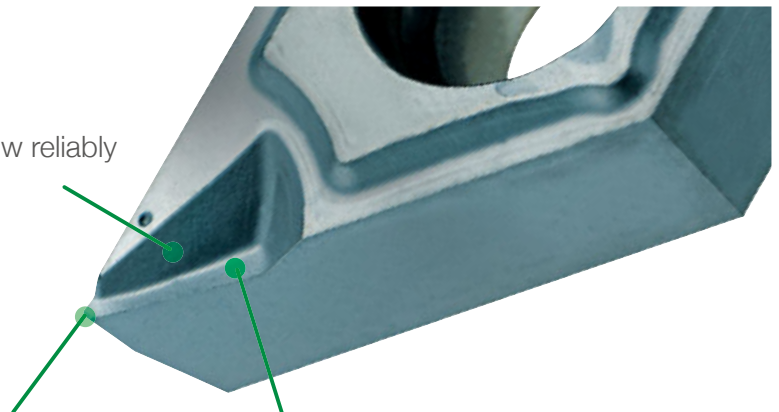
### Performance

- **Significantly reducing damage of cutting edge**  
Extended lifespan can be expected even in the machining of difficult-to-cut materials
- **More stable of chip control**  
Stable chip formation during vibration cutting

### What is the unique point?



Controls chip flow reliably

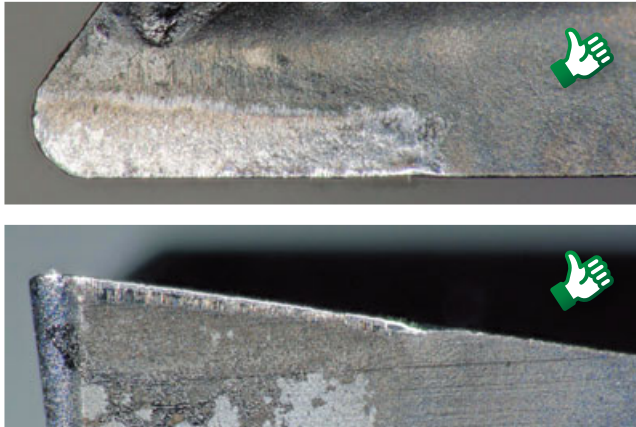


Shape to prevent cutting edge damage from chipping

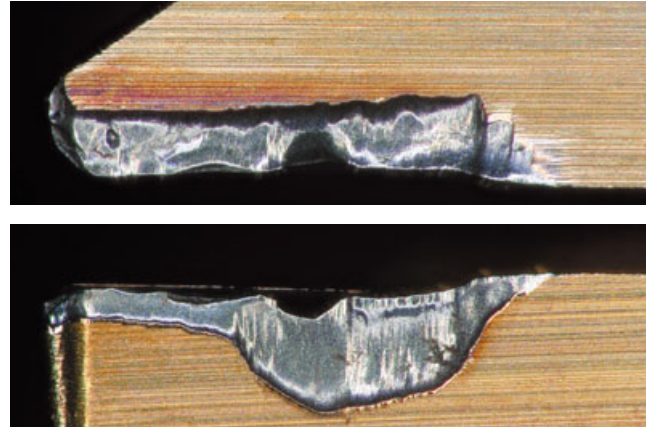
Rake face shape to withstand high cutting feeds

# Achieving extended tool life and stable cutting performance in vibration cutting

## TMV Chipbreaker



## conventional



## Cutting conditions

Grade	Work materials	Operation	Cutting conditions		
			Cutting speed (m/min)	Feed (mm/rev)	D.O.C. (mm)
ST4	Austenitic stainless steel ( SUS304 / SUS316 etc )	Front turning	40 - 100	0.02 - 0.06	0.5 - 2.0
DM4	Carbon steel / Alloy steel ( S45C / SCM435 etc )		50 - 120		
TM4	Non-ferrous ( Aluminum / Titanium etc )		60 - 150		

## Vibration condition

CITIZEN MACHINERY CO., LTD. ( LFV )		
P	Q	D
Mode 1	0.5	0.5

\* Our products are designed with a low cutting edge, please use them after aligning with the center.

\* When using insert radius R0.08, please set the feed rate to 0.02 mm/rev or less.

If you want to increase the feed rate beyond 0.02 mm/rev. we recommend using the [ Mode 2 / E4.0 / R0.5 ]

Star precision Co., Ltd. ( Step Cycle Pro )	
A ( Chip length factor )	D ( Amplitude factor )
More than 2.0	More than 2.0

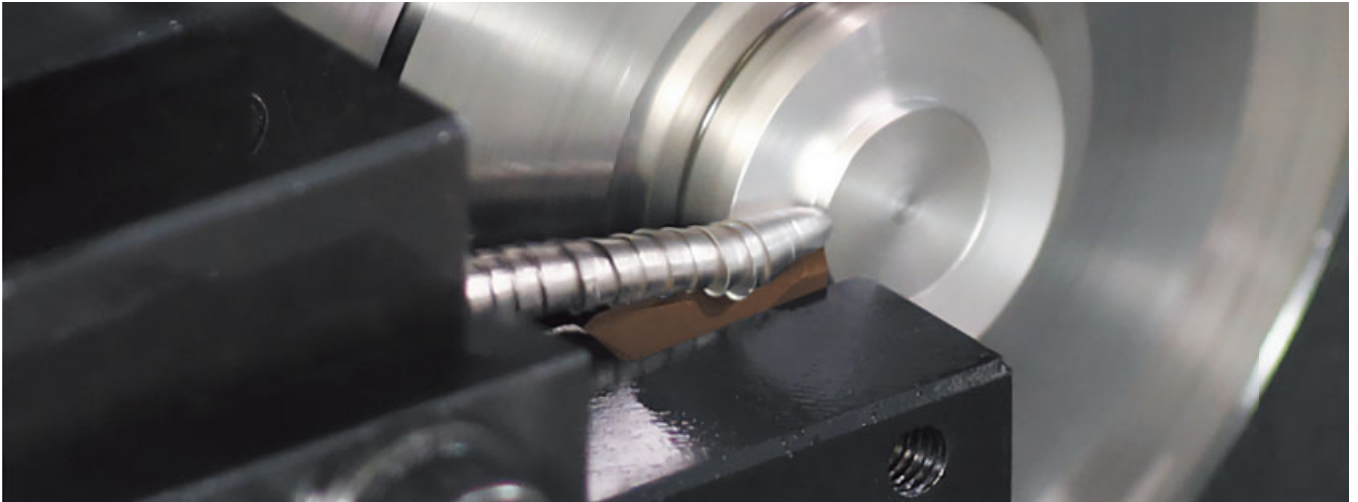
\* Our products are designed with a low cutting edge, please use them after aligning with the center.

\* When using insert radius R0.08, please set the feed rate to 0.02 mm/rev or less.

Grade  
1  
Insert  
2  
Ext. Toolholder  
3  
Int. Toolholder  
4  
Threading  
5  
Grooving  
6  
Shaper  
7  
Endmill  
8  
Drilling Tool  
9  
Technical Reference  
10

# The Front Max

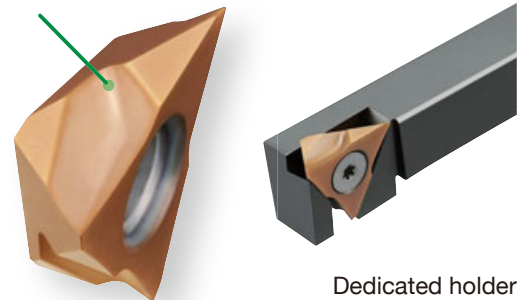
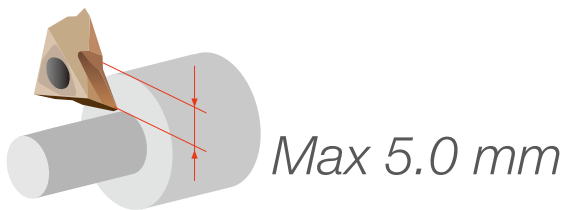
For front turning | Swiss CNC Lathes



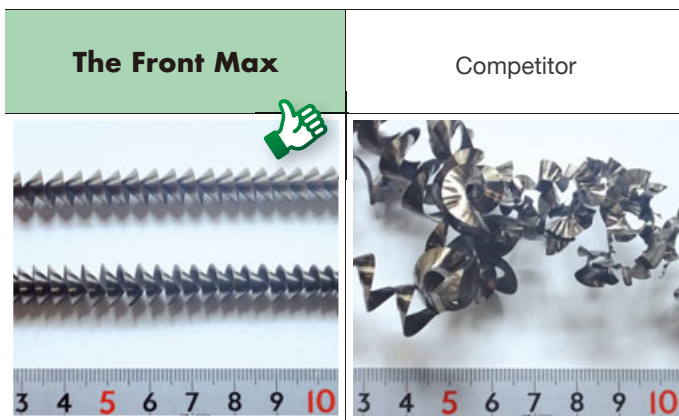
Maximum depth of cut 5.0 mm  
Single pass machining reduces cycle time

**Fewer machining passes reduce insert wear. Tool life can be extended.**

Uniquely Designed Chipbreaker Achieves Excellent Chip Control And Machined Surfaces.

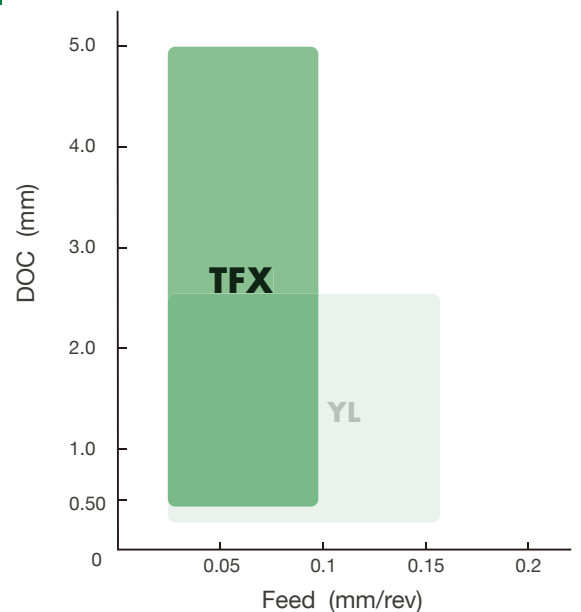


## Case study



material: AISI304  
ap 5.0mm vc=80m/min f=0.03mm/rev WET

## Functioning range

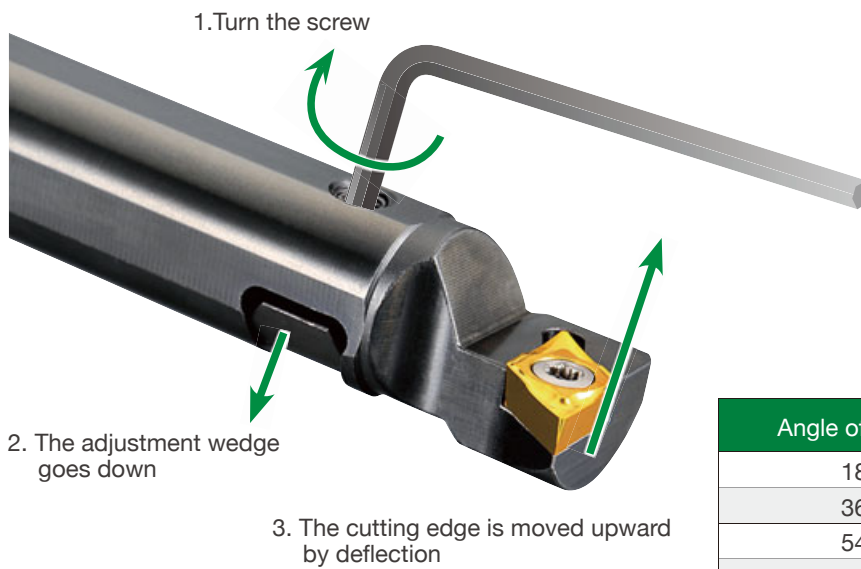




# Adjustable centerline height DS tool holders

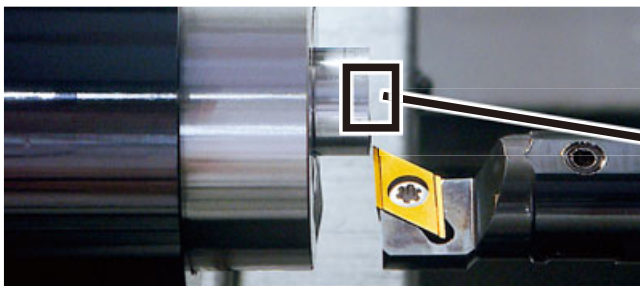
For front turning | Swiss CNC Lathes

Instantly adjust cutting edge height, reducing time and elevating quality

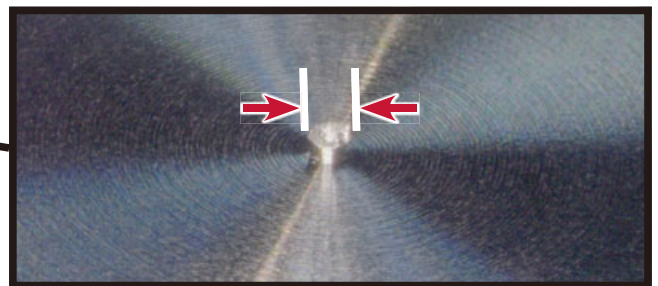


Angle of rotation	Increase cutting edge height
180°	0.05
360°	0.10
540°	0.20
720°	0.30

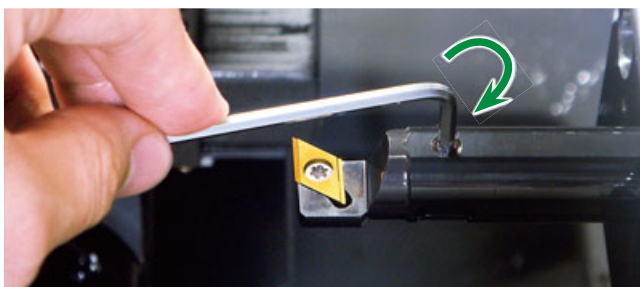
\* The amount of cutting edge height increase differs depending on the model number.



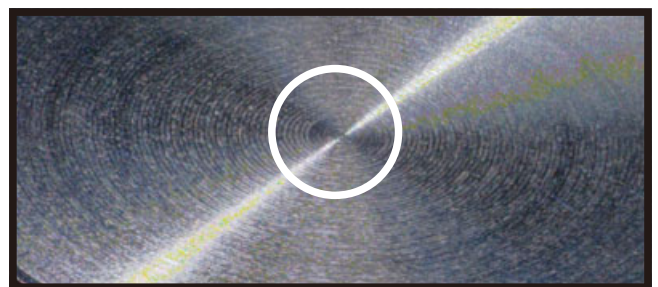
1. Take a facing test cut slightly below centerline



2. Measure the dia. of center boss



3. Raise the center height by one half of the dia. of the boss.



4. Re-machine the end face

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

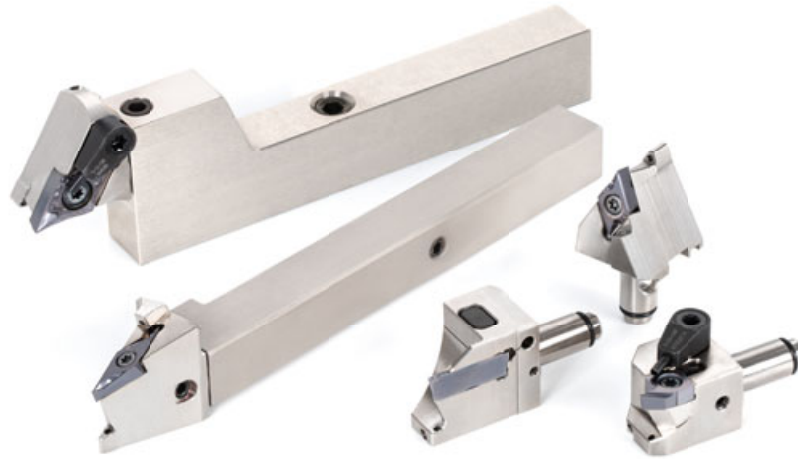
Grooving

Shaper

Endmill

Drilling Tool

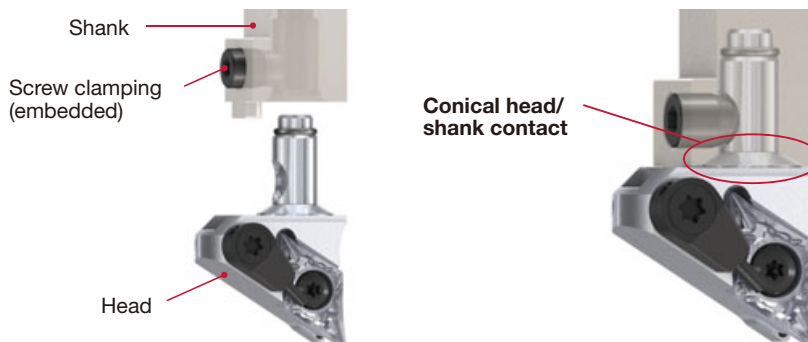
Technical Reference



## 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.



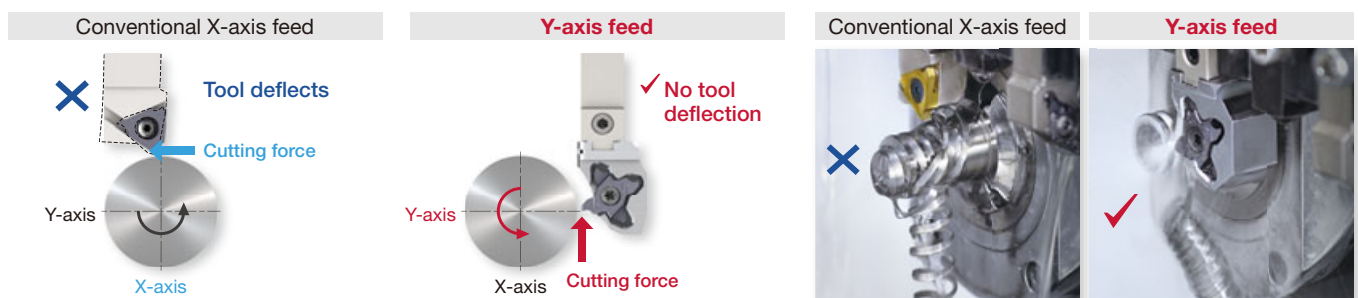
### Benefits of Y-axis feed

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



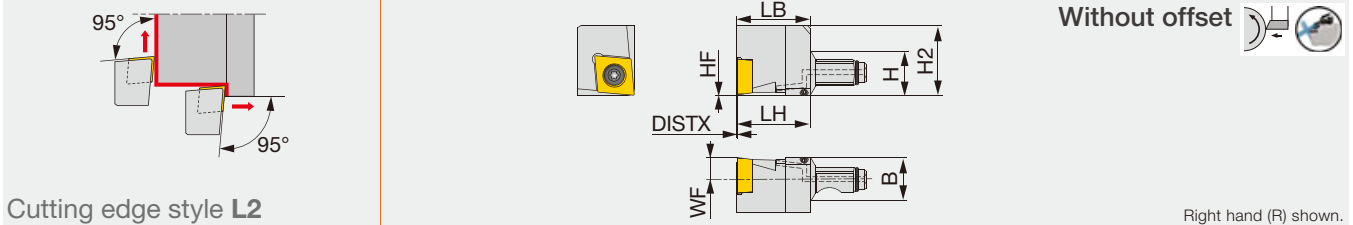
# CC



**Rhombic, 80°  
with hole  
Positive 7°**

## MODUM<sup>INI</sup>TURN QC12/16-JSCL2CR-Y-CHP

Screw-on Y-axis turning modular head with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability

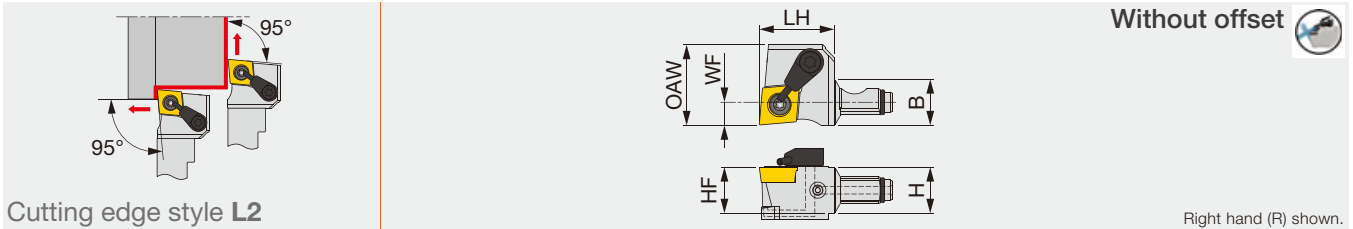


Metric	H	B	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*
QC12-JSCL2CR09-Y-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	0 (0")	6 (0.236")	19.8 (0.780")	18.6 (0.732")	0.3 (0.012")	0.2 (0.008")	CC**09T3... (CC**32.5...)	1.2 (0.89)
QC16-JSCL2CR09-Y-CHP	16 (1.000")	16 (1.000")	21 (0.827")	0 (0")	8 (0.315")	21.3 (0.839")	16 (0.630")	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

## QC10/12/16-JSCL2CR-CHP

Screw-on modular head with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC10-JSCL2CR06-CHP	10 (0.625")	10 (0.625")	17 (0.669")	10 (0.394")	5 (0.197")	13 (0.512")	0.2 (0.008")	CC**09T3... (CC**32.5...)	1.2 (0.89)
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)
QC16-JSCL2CR09-CHP	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	8 (0.315")	20 (0.787")	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-Y-CHP	CSTB-4SD	-	T-8F	ORSS-0454.5X1.0NBR70
QC16-JSCL2CR09-Y-CHP	CSTB-4SD	-	T-8F	ORSS-0757.5X1.0NBR70
QC10-JSCL2CR06-CHP	CSTB-2.5	-	T-8F	ORSS-0353.5X1.0NBR70
QC12-JSCL2CR09-CHP	CSTB-4SD	S-CU-CHP	T-8F	ORSS-0454.5X1.0NBR70
QC16-JSCL2CR09-CHP	CSTB-4SD	S-CU-CHP	T-8F	ORSS-0757.5X1.0NBR70

Reference pages : Inserts → 2-11 -, CBN → 2-87 -, PCD → 2-119 -, Shank, Accessory → 3-130 -

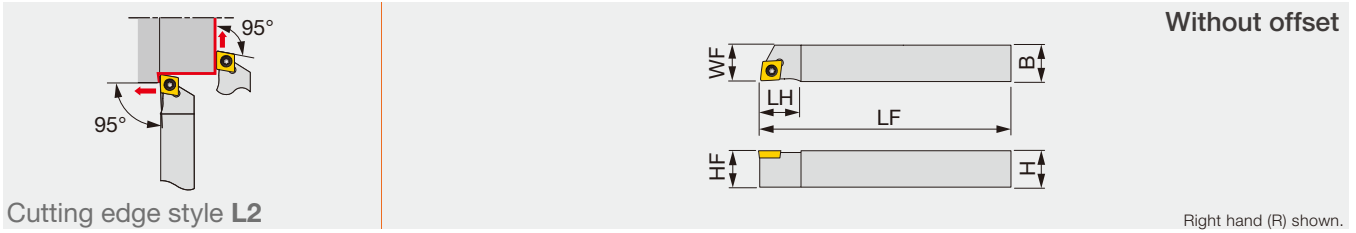
Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

# 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

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

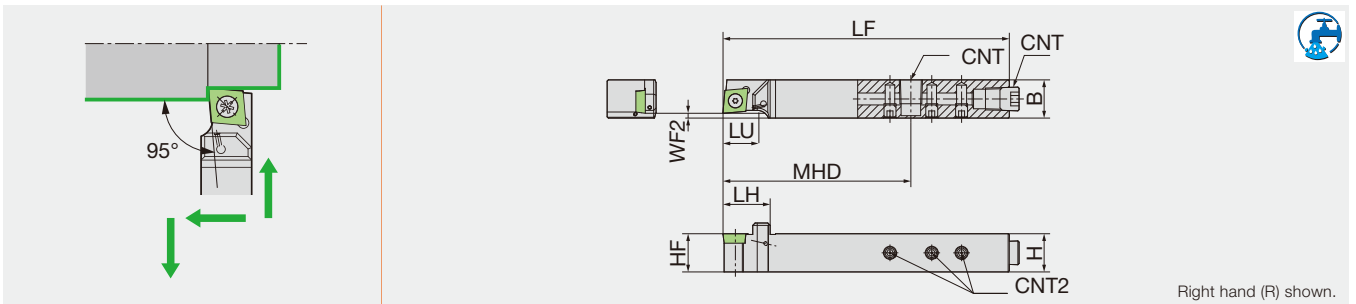
Torque: Recommended clamping torque: lbs-ft (\*N-m)  
\*\*RE: Standard corner radius

### SPARE PARTS

Designation	Clamping screw	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)

### SCLCR-OH3

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Inch	H	B	LF	LH	HF	LU	MHD	WF2	CNT	CNT2	Insert
SCLCR103XL-F079-OH3	0.625	0.625	4.724	0.787	0.625	0.697	3.100	0.079	NPT1/8	M5	CC**32.5...

Metric	H	B	LF	LH	HF	LU	MHD	WF2	CNT	CNT2	Insert
SCLCR1012H09N-OH3	10	12	100	17	10	12	62.5	0	M6*1	M5	CC**09T3...
SCLCR1616X09N-F02OH3	16	16	120	20	16	17.7	78.75	2	Rc1/8	M5	CC**09T3...

NOTE: Reference Chart of OH3 Hole Position → 10-1

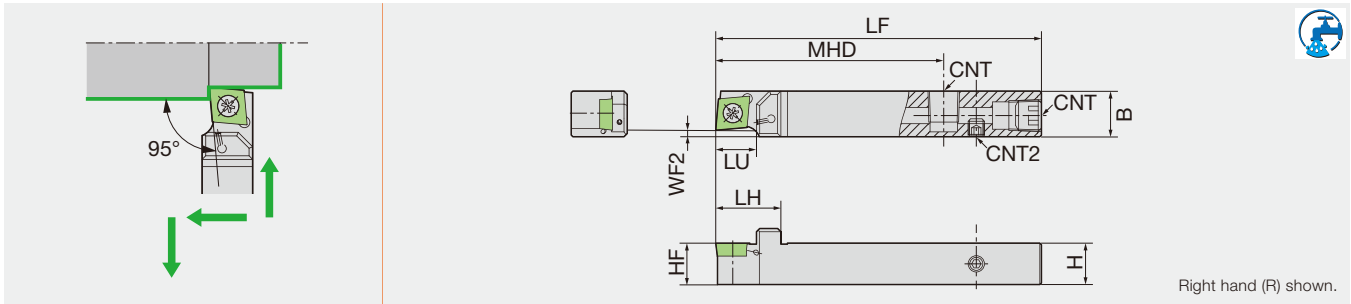
### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	SCREW (FOR CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
SCLCR103XL-F079-OH3	LRIS-4*10	SPR1/8	SS0505SC	LLR-25S	LW-2.5
SCLCR1012H09N-OH3	LRIS-4*10	SS0605SC	SS0505SC	LLR-25S	LW-2.5
SCLCR1616X09N-F02OH3	LRIS-4*10	SPR1/8	SS0505SC	LLR-25S	LW-2.5

Reference pages : Inserts → 2-11 -, CBN → 2-87 -, PCD → 2-119 -

## SCLCR-OH2

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



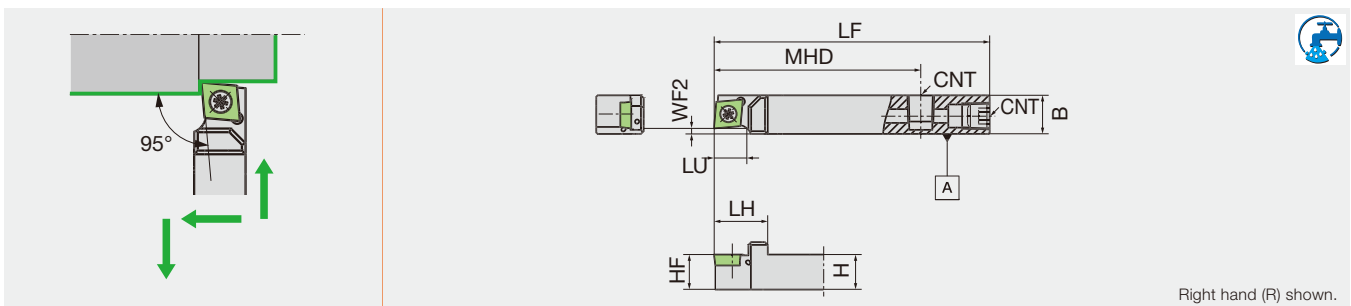
Inch	H	B	LF	LH	HF	LU	MHD	WF2	CNT	CNT2	Insert
SCLCR083H-F079-OH2	0.500	0.551	3.937	0.787	0.500	0.472	2.756	0.079	NPT1/8	M5	CC**32.5...
SCLCR103XL-F079-OH2	0.625	0.551	4.724	0.787	0.625	0.697	2.756	0.079	NPT1/8	M5	CC**32.5...
Metric	H	B	LF	LH	HF	LU	MHD	WF2	CNT	CNT2	Insert
SCLCR1214H09N-F02OH2	12	14	100	19.5	12	12	70	2	Rc1/8	M5	CC**09T3...
SCLCR1616X09N-F02OH2	16	16	120	19.5	16	17.7	70	2	Rc1/8	M5	CC**09T3...

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
SCLCR083H-F079-OH2	LRIS-4*10	SPNPT1/8	SS0505SC	LLR-25S	LW-2.5
SCLCR103XL-F079-OH2	LRIS-4*10	SPNPT1/8L	SS0505SC	LLR-25S	LW-2.5
SCLCR**09N-F02OH2	LRIS-4*10	SPR1/8	SS0505SC	LLR-25S	LW-2.5

## SCLCR-OH

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Inch	H	B	LF	LH	HF	LU	MHD	WF2	CNT	Insert
SCLCR082H-F079-OH	0.500	0.551	3.937	0.768	0.500	0.472	2.953	0.079	NPT1/8	CC**21.5...
SCLCR083H-F079-OH	0.500	0.551	3.937	0.768	0.500	0.472	2.953	0.079	NPT1/8	CC**32.5...
SCLCR103HL-F079-OH	0.625	0.551	3.937	0.768	0.625	0.697	2.953	0.079	NPT1/8	CC**32.5...
Metric	H	B	LF	LH	HF	LU	MHD	WF2	CNT	Insert
SCLCR1014F09N-F02OH	10	14	80	19.5	10	12	55	2	M6*1	CC**09T3...
SCLCR1214H09N-F02OH	12	14	100	19.5	12	12	75	2	Rc1/8	CC**09T3...
SCLCR1616H09N-F02OH	16	16	100	19.5	16	17.7	75	2	Rc1/8	CC**09T3...

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Wrench (for Clamp screw)	Wrench (for CNT)
SCLCR082H-F079-OH	LRIS-2.5*7	SPNPT1/8	-	CLR-15S
SCLCR083H-F079-OH	LRIS-4*10	SPNPT1/8	-	LLR-25S
SCLCR103HL-F079-OH	LRIS-4*10	SPR1/8	SS0505SC	LLR-25S
SCLCR1014F09N-F02OH	LRIS-4*10	SS0605SC	LLR-25S	LW-3
SCLCR**H09N-F02OH	LRIS-4*10	SPR1/8	LLR-25S	-

Reference pages : Inserts → 2-11 -, CBN → 2-87 -, PCD → 2-119 -

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



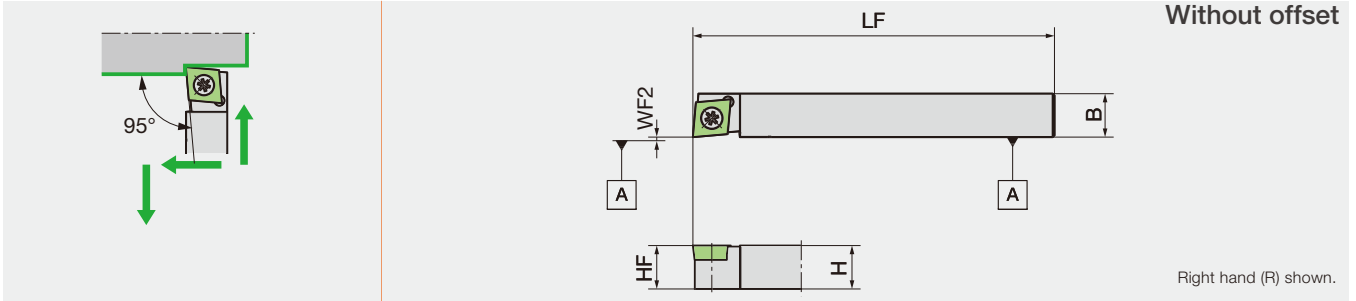
# CC



**Rhombic, 80° with hole Positive 7°**

## SCLC-N

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts



Inch	H	B	LF	HF	WF2	Insert
SCLCL062C	0.375	0.375	4.724	0.375	0	CC**21.5...
SCLCL082C	0.500	0.500	4.724	0.500	0	CC**21.5...
SCLCR062C	0.375	0.375	4.724	0.375	0	CC**21.5...
SCLCR082C	0.500	0.500	4.724	0.500	0	CC**21.5...

Metric	H	B	LF	HF	WF2	Insert
SCLCR0808X06N	8	8	120	8	0	CC**0602...
SCLCL0808X06N	8	8	120	8	0	CC**0602...

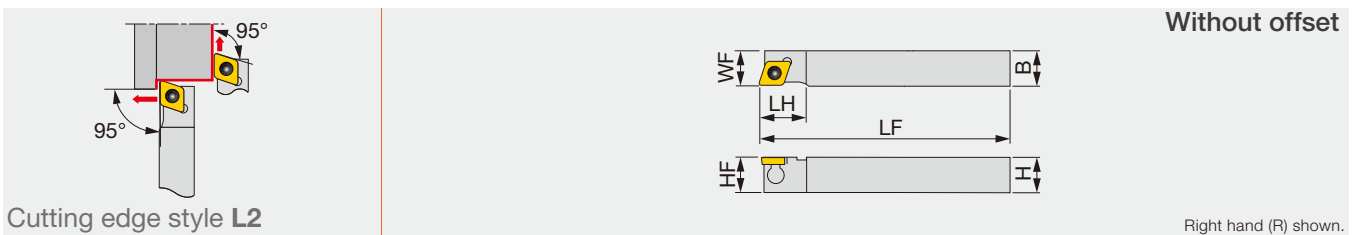
### SPARE PARTS

Designation	Clamp screw	Wrench (for Clamp screw)
SCLCL062C	LRIS-2.5*7	CLR-15S
SCLCL082C	LRIS-2.5*7	CLR-15S
SCLCR062C	LRIS-2.5*7	CLR-15S
SCLCR082C	LRIS-2.5*7	CLR-15S
SCLCR0808X06N	LRIS-2.5*7	CLR-15S

## J-SERIES

### JTCL2CR/L

Back-clamp toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style L2

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

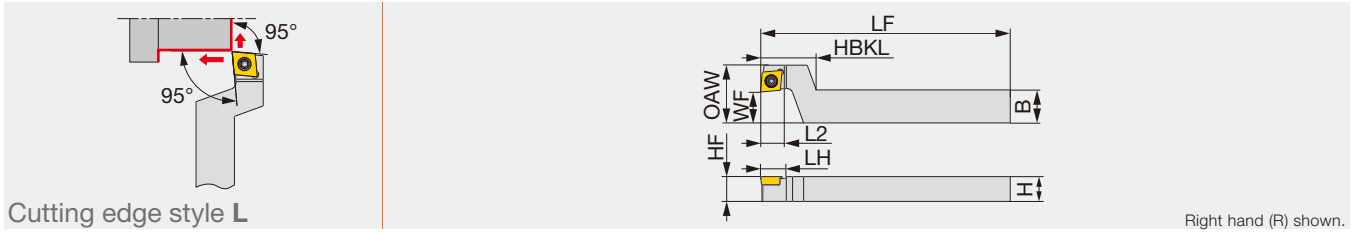
### SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTCL2CR/L*06	JCP-2	JDS-3525	P-2F
JTCL2CR/L*09	JCP-3	JDS-5040	P-2.5F

Reference pages : Inserts → 2-11 -, CBN → 2-87 -, PCD → 2-119 -

## 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)

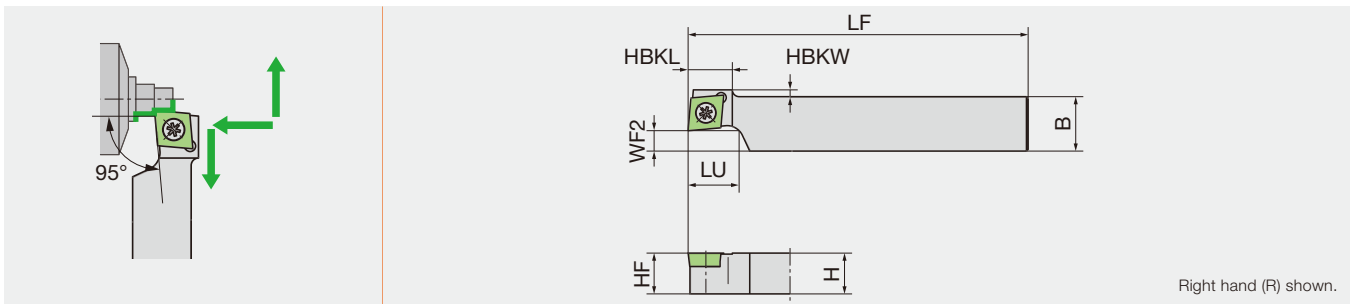
RE\*\*: Standard corner radius

### SPARE PARTS

Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSCLCR**F15	CSTB-4SD	T-8F	(T-8L)

## SCLC-N-F

Screw-on stepped-head toolholder with 95° approach angle, for positive 80° rhombic inserts



Right hand (R) shown.

Inch	H	B	LF	HBKW	HBKL	HF	LU	WF2	Insert
SCLCR083C-F250	0.500	0.728	4.724	-	-	0.500	0.591	0.250	CC**32.5...
SCLCR083C-F500	0.500	0.984	4.724	-	-	0.500	0.591	0.500	CC**32.5...

Metric	H	B	LF	HBKW	HBKL	HF	LU	WF2	Insert
SCLCR1015X09N-F05	10	15	120	2	13	10	12	5	CC**09T3...
SCLCR1020X09N-F10	10	20	120	2	13	10	12	10	CC**09T3...
SCLCR1218X09N-F06	12	18	120	-	13	12	12	6	CC**09T3...
SCLCR1224X09N-F12	12	24	120	-	13	12	12	12	CC**09T3...

### SPARE PARTS

Designation	Clamp screw	Wrench (for Clamp screw)
SCLCR1**	LRIS-4*10	LLR-25S

Reference pages : Inserts → 2-11 -, CBN → 2-87 -, PCD → 2-119 -

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

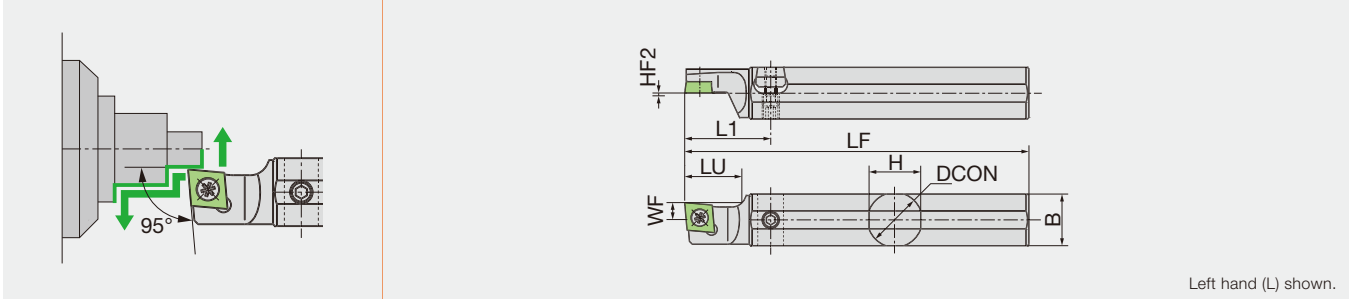
**CC**



**Rhombic, 80° with hole Positive 7°**

**DS-SCL-ACH**

Screw-on round-shank toolholder with 95° approach angle, for positive 80° rhombic inserts, with adjustable centerline height capability



Left hand (L) shown.

Metric	H	B	LF	DCON	HF2	LU	L1	WF	Insert
DS-SCLL16F-09-ACH	15.5	15.5	80	16	Type B(0~+0.3)	20	30	6	CC**09T3...
DS-SCLL19-09-ACH	18	18	120	19.05	Type A(0~+0.2)	20	30	6	CC**09T3...
DS-SCLL20-09-ACH	19	19	120	20	Type A(0~+0.2)	20	30	6	CC**09T3...
DS-SCLL22-09-ACH	21	21	120	22	Type A(0~+0.2)	20	30	6	CC**09T3...
DS-SCLL25-09-ACH	24	24	150	25.4	Type A(0~+0.2)	20	30	6	CC**09T3...
DS-SCLL25-09MET-ACH	24	24	150	25	Type A(0~+0.2)	20	30	6	CC**09T3...

NOTE: Use a right-handed (R) or non-handed insert.

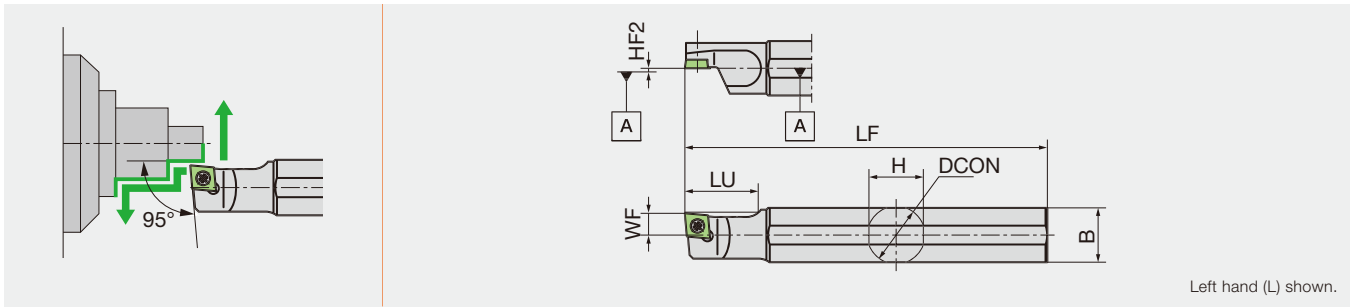
**SPARE PARTS**



Designation	Clamp screw	Screw (for Wedge)	Wedge	Wrench (for Clamp screw)	Wrench (for Wedge)
DS-SCLL**-ACH	LRIS-4*8	WS060415-003	ACH-W18	LLR-25S-20*65	LW-3
DS-SCLL25-09**-ACH	LRIS-4*8	WS060419-004	ACH-W24	LLR-25S-20*65	LW-3

## DS-SCL

Screw-on round-shank toolholder with 95° approach angle, for positive 80° rhombic inserts



Metric	H	B	LF	DCON	HF2	LU	WF	Insert
DS-SCLL15H-06	15	15	100	15.875	0	20	6	CC**0602...
DS-SCLL15H-09	15	15	100	15.875	0	20	6	CC**09T3...
DS-SCLL16F-06	15	15	80	16	0	20	6	CC**0602...
DS-SCLL16F-09	15	15	80	16	0	20	6	CC**09T3...
DS-SCLL19-06	18	18	120	19.05	0	20	6	CC**0602...
DS-SCLL19-09	18	18	120	19.05	0	20	6	CC**09T3...
DS-SCLL19GX-09	18	18	85	19.05	0	20	6	CC**09T3...
DS-SCLL20-06	19	19	120	20	0	20	6	CC**0602...
DS-SCLL20-09	19	19	120	20	0	20	6	CC**09T3...
DS-SCLL20X-06	19	19	95	20	0	20	6	CC**0602...
DS-SCLL20X-09	19	19	95	20	0	20	6	CC**09T3...
DS-SCLL22-06	21	21	120	22	0	20	6	CC**0602...
DS-SCLL22-09	21	21	120	22	0	20	6	CC**09T3...
DS-SCLL25-06	24	24	120	25.4	0	20	6	CC**0602...
DS-SCLL25-06MET	24	24	120	25	0	20	6	CC**0602...
DS-SCLL25-09	24	24	150	25.4	0	20	6	CC**09T3...
DS-SCLL25-09MET	24	24	120	25	0	20	6	CC**09T3...
DS-SCLL32-09	30	30	150	32	0	20	6	CC**09T3...

NOTE: Use a right-handed (R) or non-handed insert.

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
DS-SCLL**06**	LRIS-2.5*7	CLR-15S
DS-SCLL**09**	LRIS-4*8	LLR-25S-20*65

Reference pages : Inserts → 2-11 -, CBN → 2-87 -, PCD → 2-119 -

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

# CC

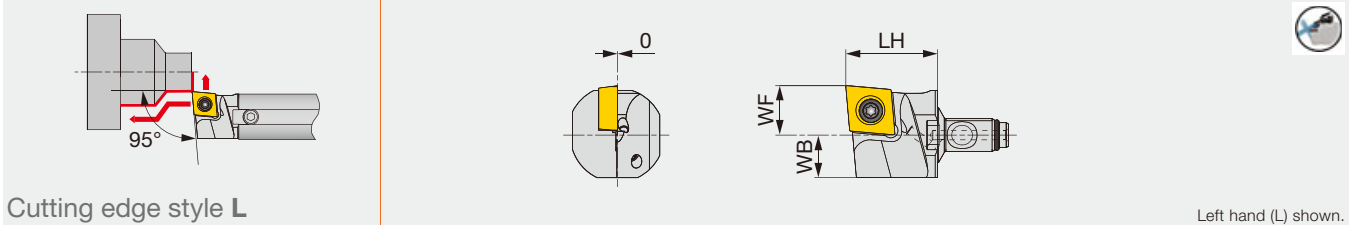


Rhombic, 80°  
with hole  
Positive 7°

## MODUM<sup>INI</sup>TURN QR12-SCLCL-CHP

**J-SERIES**

Screw-on modular head with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Metric	LH	WF	WB	RE**	Insert	Torque*	Shank
QR12C-SCLCL09-CHP	19.5 (0.768")	8.5 (0.335")	8 (0.315")	0.2 (0.008")	CC**09T3... (CC 32.5...)	1.2 (0.89)	A16*-QR12
QR12D-SCLCL09-CHP	19.5 (0.768")	10.5 (0.413")	9 (0.354")	0.2 (0.008")	CC**09T3... (CC 32.5...)	1.2 (0.89)	A19/20*-QR12

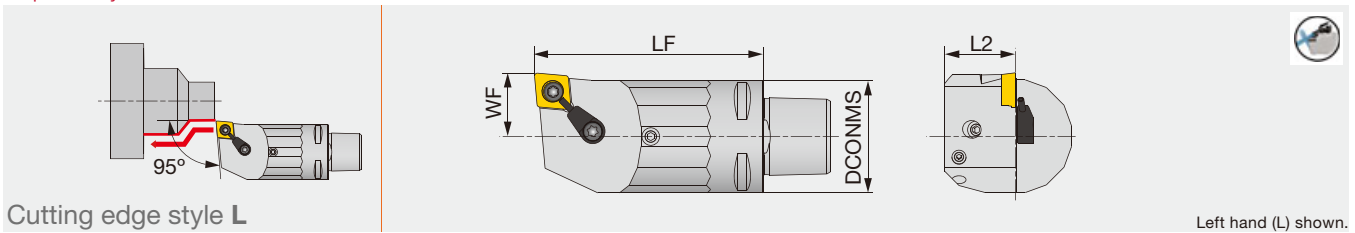
Torque\*: Recommended clamping torque: N·m (lbf·ft)  
RE\*\*: Standard corner radius

### SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QR12*-SCLCL09-CHP	CSTB-4SD	T-8F	ORSS-0454.5X1.0NBR70

## TUNG<sup>CAP</sup> C-SCLCL-CHP

Screw-on toolholder, with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



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

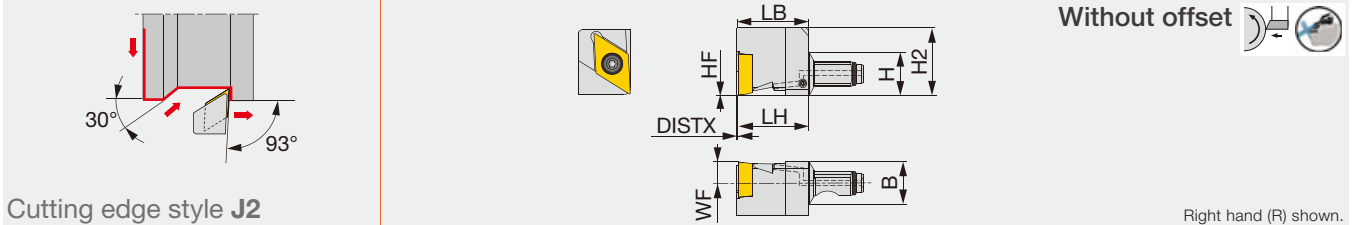
Designation	Clamping screw	Coolant unit	Wrench
C3SCLCL...	CSTB-4S	S-CU-CHP	T-15F

# DC

 **Rhombic, 55°  
with hole  
Positive 7°**

## MODUMTURN<sup>INI</sup> QC12/16-JSDJ2CR-Y-CHP

Screw-on Y-axis turning modular head with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability

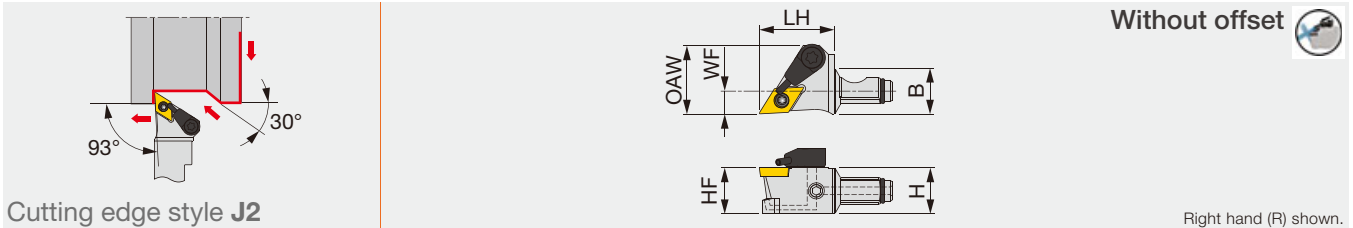


Metric	H	B	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*
QC12-JSDJ2CR11-Y-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	0 (0")	6 (0.236")	19.8 (0.780")	18.7 (0.736")	0.3 (0.012")	0.2 (0.008")	DC**11T3... (DC**32.5...)	1.2 (0.89)
QC16-JSDJ2CR11-Y-CHP	16 (1.000")	16 (1.000")	21 (0.827")	0 (0")	8 (0.315")	21.3 (0.839")	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

## QC10/12/16-JSDJ2CR-CHP

Screw-on modular head with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC10-JSDJ2CR07-CHP	10 (0.625")	10 (0.625")	17 (0.669")	10 (0.394")	5 (0.197")	13 (0.512")	0.2 (0.008")	DC**0702... (DC**21.5...)	1.2 (0.89)
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)
QC16-JSDJ2CR11-CHP	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	8 (0.315")	20 (0.787")	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
QC**-JSDJ2CR11-Y-CHP	CSTB-4SD		T-8F	ORSS-0454.5X1.0NBR70
QC10-JSDJ2CR07-CHP	CSTB-2.5	-	T-8F	ORSS-0353.5X1.0NBR70
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
QC16-JSDJ2CR11-CHP	CSTB-4SD	S-CU-CHP	T-8F	ORSS-0757.5X1.0NBR70

Reference pages : Inserts → 2-23 -, CBN → 2-91 -, PCD → 2-120 -, Shank, Accessory → 3-130 -

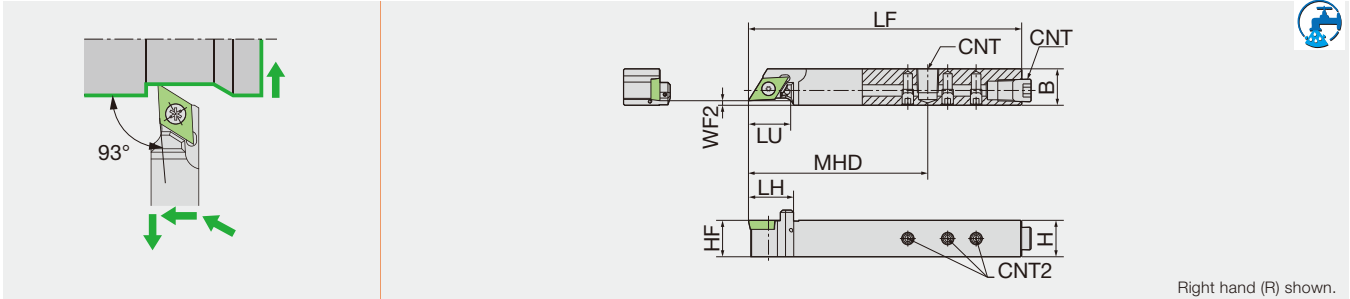
Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

# DC

 **Rhombic, 55° with hole**  
**Positive 7°**

## SDJCR-OH3

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Right hand (R) shown.

Inch	H	B	LF	LH	HF	LU	MHD	WF2	CNT	CNT2	Insert	
SDJCR103XL-F079-OH3	0.625	0.625	4.724	0.78	0.625	0.724	3.100	0.079	NPT1/8	M5	DC**32.5...	DC**32.5...WP(TFD11...)

Metric	H	B	LF	LH	HF	LU	MHD	WF2	CNT	CNT2	Insert	
SDJCR1012H11N-OH3	10	12	100	16.8	10	16	62.5	0	M6*1	M5	DC**11T3...	DC**11T3...WP(TFD11...)
SDJCR1616X11N-F02OH3	16	16	120	19.8	16	18.4	78.75	2	Rc1/8	M5	DC**11T3...	DC**11T3...WP(TFD11...)

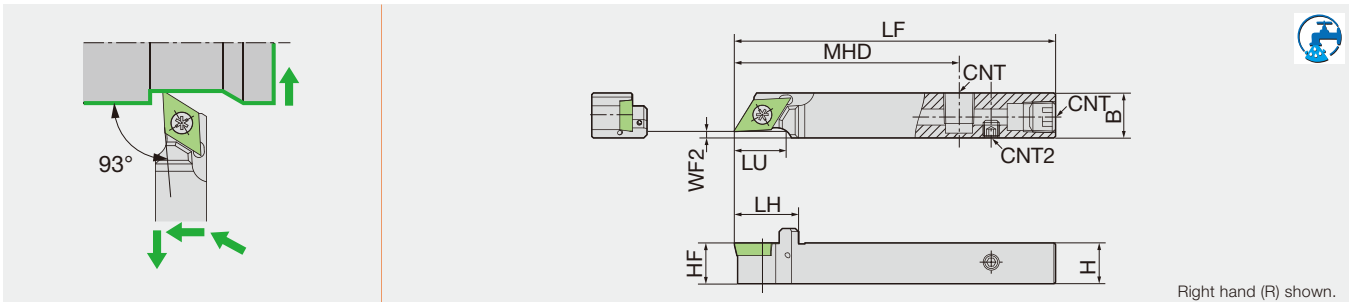
NOTE: Reference Chart of OH3 Hole Position → 10-1

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
SDJCR103XL-F079-OH3	LRIS-4*10	SPNPT1/8	SS0505SC	LLR-25S	LW-2.5
SDJCR1012H11N-OH3	LRIS-4*10	SS0605SC	SS0505SC	LLR-25S	LW-2.5
SDJCR1616X11N-F02OH3	LRIS-4*10	SPR1/8	SS0505SC	LLR-25S	LW-2.5

## SDJCR-OH2

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Right hand (R) shown.

Inch	H	B	LF	LH	HF	LU	MHD	WF2	CNT	CNT2	Insert	
SDJCR083H-F079-OH2	0.500	0.551	3.937	0.787	0.500	0.630	2.756	0.079	NPT1/8	M5	DC**32.5...	DC**32.5...WP(TFD11...)
SDJCR103XL-F079-OH2	0.625	0.625	4.724	0.787	0.625	0.724	2.756	0.079	NPT1/8	M5	DC**32.5...	DC**32.5...WP(TFD11...)

Metric	H	B	LF	LH	HF	LU	MHD	WF2	CNT	CNT2	Insert	
SDJCR1214H11N-F02OH2	12	14	100	19.5	12	16	70	2	Rc1/8	M5	DC**11T3...	DC**11T3...WP(TFD11...)
SDJCR1616X11N-F02OH2	16	16	120	19.5	16	18.4	70	2	Rc1/8	M5	DC**11T3...	DC**11T3...WP(TFD11...)

### SPARE PARTS

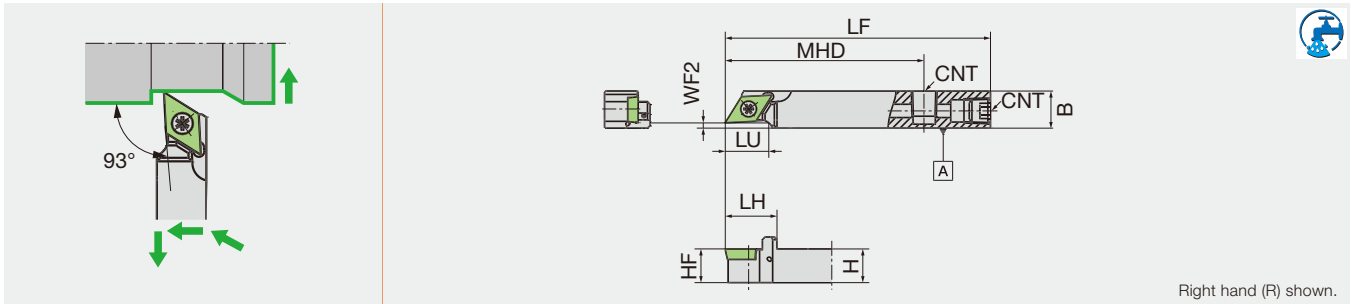
Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
SDJCR083H-F079-OH2	LRIS-4*10	SPNPT1/8	SS0505SC	LLR-25S	LW-2.5
SDJCR103XL-F079-OH2	LRIS-4*10	SPNPT1/8L	SS0505SC	LLR-25S	LW-2.5
SDJCR1214H11N-F02OH2	LRIS-4*10	SPR1/8	SS0505SC	LLR-25S	LW-2.5
SDJCR1616X11N-F02OH2	LRIS-4*10	SPR1/8L	SS0505SC	LLR-25S	LW-2.5

Reference pages : Inserts → 2-23 -, CBN → 2-91 -, PCD → 2-120 -



## SDJCR-OH

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Right hand (R) shown.

Inch	H	B	LF	LH	HF	LU	MHD	WF2	CNT	Insert
SDJCR082H-F079-OH	0.500	0.551	3.937	0.768	0.500	0.472	2.953	0.079	NPT1/8	DC**21.5... WP(TFD11...)
SDJCR083H-F079-OH	0.500	0.551	3.937	0.768	0.500	0.630	2.953	0.079	NPT1/8	DC**32.5... WP(TFD11...)
SDJCR103HL-F079-OH	0.625	0.625	3.937	0.768	0.625	0.724	2.953	0.079	NPT1/8	DC**32.5... WP(TFD11...)

Metric	H	B	LF	LH	HF	LU	MHD	WF2	CNT	Insert
SDJCR1014F11N-F02OH	10	14	80	19.5	10	16	55	2	M6*1	DC**11T3... WP(TFD11...)
SDJCR1214H11N-F02OH	12	14	100	19.5	12	16	75	2	Rc1/8	DC**11T3... WP(TFD11...)
SDJCR1616H11N-F02OH	16	16	100	19.5	16	18.4	75	2	Rc1/8	DC**11T3... WP(TFD11...)

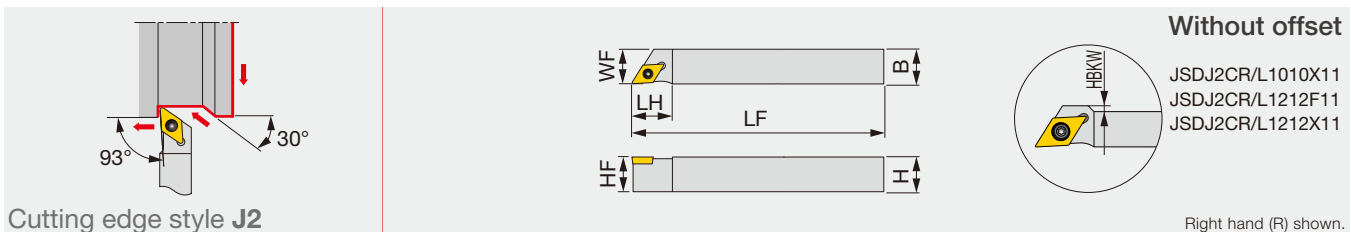
### SPARE PARTS



Designation	Clamp screw	Screw (for CNT)	Wrench (for Clamp screw)	Wrench (for CNT2)
SDJCR082H-F079-OH	LRIS-2.5*7	SPNPT1/8	CLR-15S	-
SDJCR083H-F079-OH	LRIS-4*10	SPNPT1/8	LLR-25S	-
SDJCR103HL-F079-OH	LRIS-4*10	SPNPT1/8	LLR-25S	-
SDJCR1014F11N-F02OH	LRIS-4*10	SS0605SC	LLR-25S	LW-3
SDJCR1214H11N-F02OH	LRIS-4*10	SPR1/8	LLR-25S	-
SDJCR1616H11N-F02OH	LRIS-4*10	SPR1/8	LLR-25S	-

## J-SERIES JSDJ2CR/L

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts



Without offset

JSDJ2CR/L1010X11  
JSDJ2CR/L1212F11  
JSDJ2CR/L1212X11

Right hand (R) shown.

Cutting edge style J2

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)

Reference pages : Inserts → 2-23 -, CBN → 2-91 -, PCD → 2-120 -

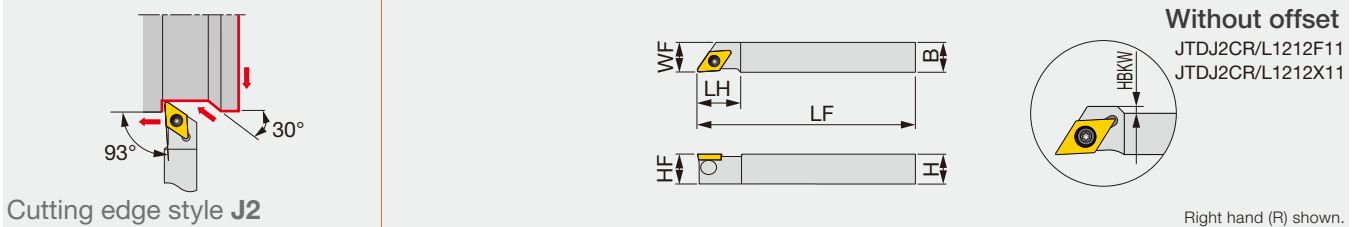
Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

# 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

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

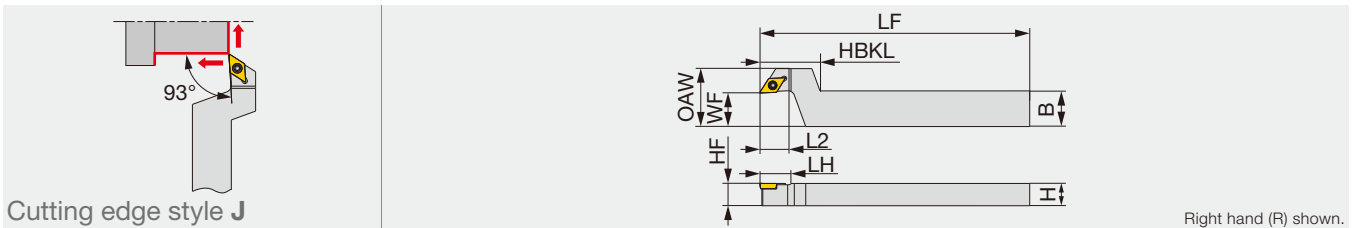
Torque\*: Recommended clamping torque (N·m)  
RE\*\*: Standard corner radius

### 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

## JSDJCR-F

Screw-on stepped-head toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style J

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

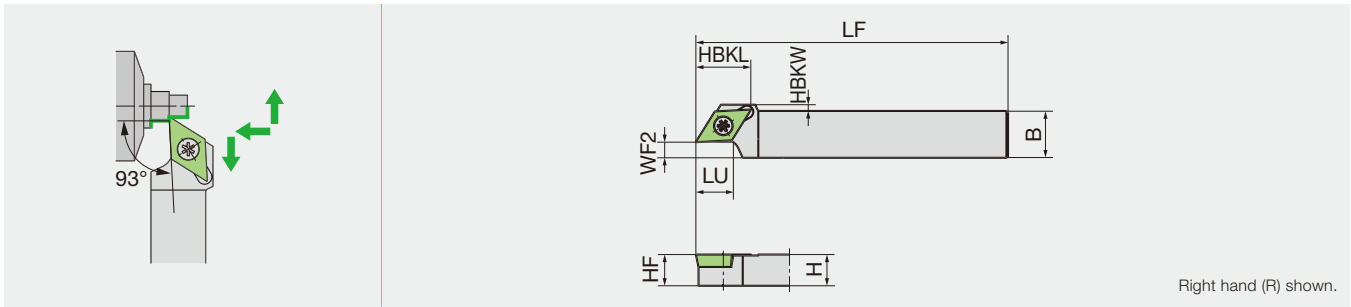
### SPARE PARTS

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 : Inserts → 2-23 -, CBN → 2-91 -, PCD → 2-120 -

## SDJC-N-F

Screw-on stepped-head toolholder with 93° approach angle, for positive 55° rhombic inserts



Right hand (R) shown.

Inch	H	B	LF	HBKL	HBKW	HF	LU	WF2	Insert
SDJCR083C-F250	0.500	0.728	4.724	-	-	0.500	0.472	0.250	DC**32.5... DC**32.5...WP(TFD11...)
SDJCR083C-F500	0.500	0.984	4.724	-	-	0.500	0.472	0.500	DC**32.5... DC**32.5...WP(TFD11...)
Metric	H	B	LF	HBKL	HBKW	HF	LU	WF2	Insert
SDJCR1015X07N-F05	10	15	120	13	0	10	12	5	DC**0702... DC**0702...WP(TFD07...)
SDJCR1015X11N-F05	10	15	120	19	2	10	12	5	DC**11T3... DC**11T3...WP(TFD11...)
SDJCR1020X07N-F10	10	20	120	13	0	10	12	10	DC**0702... DC**0702...WP(TFD07...)
SDJCR1020X11N-F10	10	20	120	19	2	10	12	10	DC**11T3... DC**11T3...WP(TFD11...)
SDJCR1218X11N-F06	12	18	120	20	0	12	12	6	DC**11T3... DC**11T3...WP(TFD11...)
SDJCR1224X11N-F12	12	24	120	20	0	12	12	12	DC**11T3... DC**11T3...WP(TFD11...)
SDJCR1620X11N-F08	16	20	120	20	0	16	18.5	8	DC**11T3... DC**11T3...WP(TFD11...)
SDJCR1628X11N-F16	16	28	120	20	0	16	18.5	16	DC**11T3... DC**11T3...WP(TFD11...)

### SPARE PARTS

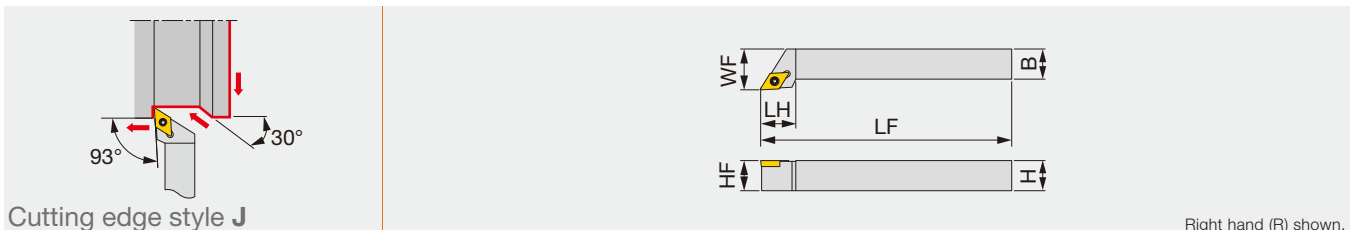


Designation	Clamp screw	Wrench (for Clamp screw)
SDJCR**083C-F...	LRIS-4*10	LLR-25S
SDJCR**X07**	LRIS-2.5*7	CLR-15S
SDJCR**X11**	LRIS-4*10	LLR-25S

## J-SERIES

### JSDJCR/L

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts



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 : Inserts → 2-23 -, CBN → 2-91 -, PCD → 2-120 -

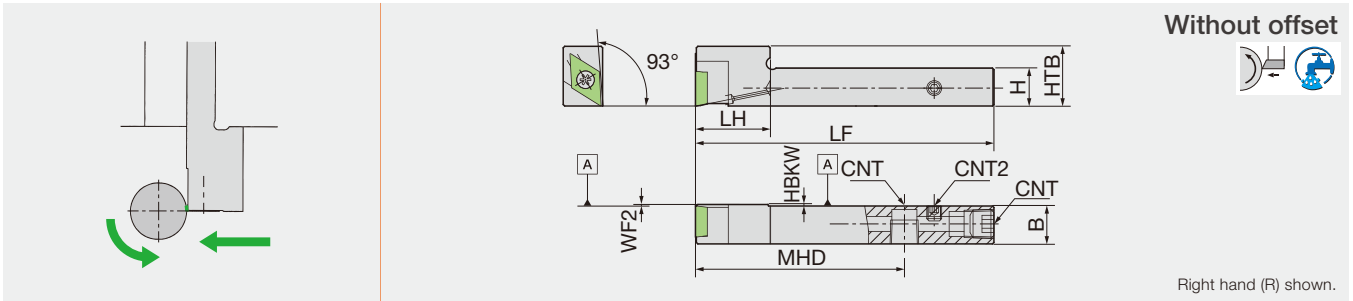
Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# DC

 **Rhombic, 55° with hole Positive 7°**

## Y-SDJCR-OH2

Screw-on Y-axis turning toolholder with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Inch	H	B	LF	LH	HBKW	HTB	MHD	WF2	CNT	CNT2	Insert
Y-SDJCR083H-IN-OH2	0.500	0.500	3.937	0.984	0.020	0.787	2.756	0	NPT1/8	M5	DC**32.5... DC**32.5...WP(TFD11...)
Metric	H	B	LF	LH	HBKW	HTB	MHD	WF2	CNT	CNT2	Insert
Y-SDJCR1212H11S-OH2	12	12	100	20	0.5	20	70	0	Rc1/8	M5	DC**32.5... DC**32.5...WP(TFD11...)

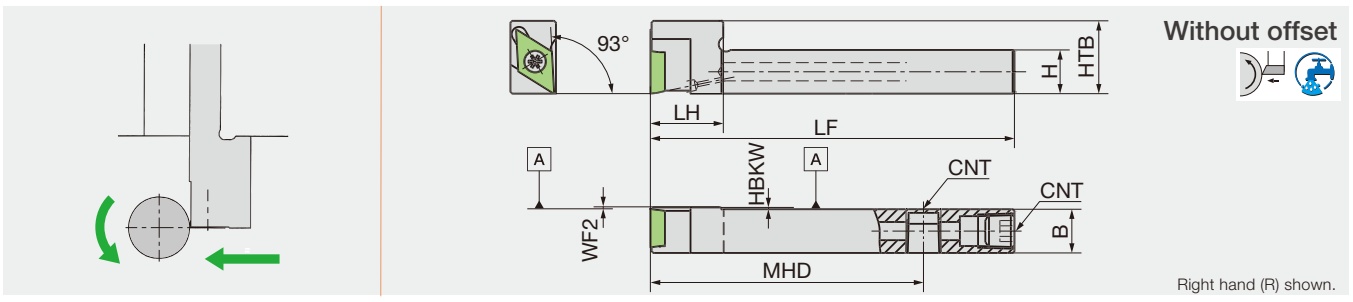
NOTE: Use a right-handed (R) or non-handed insert.  
NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter.  
→10-1

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
Y-SDJCR083H-IN-OH2	LRIS-4*10	SPNPT1/8	SS0505SC	LLR25S-20*65	LW-2.5
Y-SDJCR1212H11S-OH2	LRIS-4*10	SPR1/8	SS0505SC	LLR-25S-20*65	LW-2.5

## Y-SDJCR-OH

Screw-on Y-axis turning toolholder with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Inch	H	B	LF	LH	HBKW	HTB	MHD	WF2	CNT	Insert
Y-SDJCR062H-IN-OH	0.375	0.375	3.937	0.984	0.02	0.787	2.953	0	M6*1	DC..21.5.. DC..21.5..WP(TFD11...)
Y-SDJCR082H-IN-OH	0.500	0.500	3.937	0.984	0.02	0.787	2.953	0	NPT1/8	DC..21.5.. DC..21.5..WP(TFD11...)
Y-SDJCR083H-IN-OH	0.500	0.500	3.937	0.984	0.02	0.787	2.953	0	NPT1/8	DC**32.5... DC**32.5...WP(TFD11...)
Y-SDJCR103H-IN-OH	0.625	0.625	3.937	0.984	0.02	0.787	2.953	0	NPT1/8	DC**32.5... DC**32.5...WP(TFD11...)
Metric	H	B	LF	LH	HBKW	HTB	MHD	WF2	CNT	Insert
Y-SDJCR1212H11S-OH	12	12	100	20	0.5	20	75	0	Rc1/8	DC**11T3... DC**11T3...WP(TFD11...)
Y-SDJCR1616H11-OH	16	16	100	25	0.5	20	75	0	Rc1/8	DC**11T3... DC**11T3...WP(TFD11...)

NOTE: Use a right-handed (R) or non-handed insert.  
NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter.  
→10-1

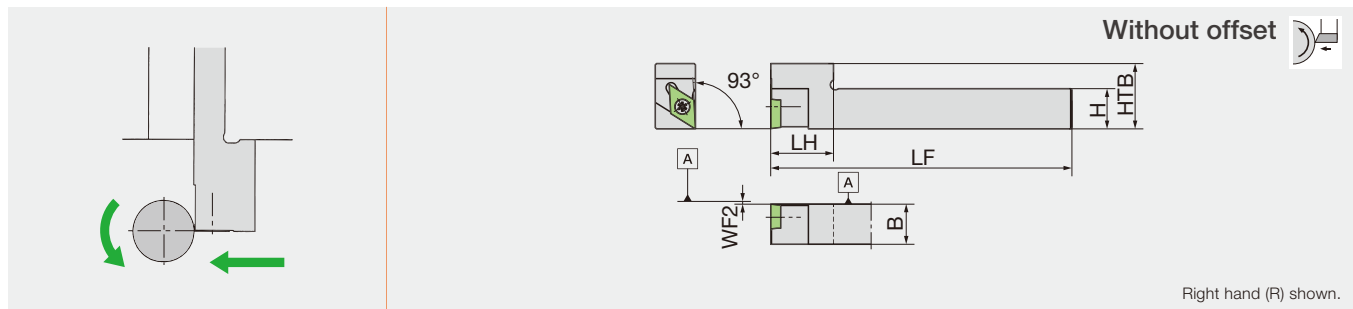
### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Wrench (for Clamp screw)	Wrench (for CNT)
Y-SDJCR062H-IN-OH	LRIS-2.5*7	SS0605SC	CLR-15S	LW-3
Y-SDJCR082H-IN-OH	LRIS-2.5*7	SPNPT1/8	CLR-15S	-
Y-SDJCR083H-IN-OH, Y-SDJCR103H-IN-OH Y-SDJCR1212H**OH, Y-SDJCR1616H**OH,	LRIS-4*10	SPR1/8	LLR-25S-20*65	-

Reference pages : Inserts → 2-23 -, CBN → 2-91 -, PCD → 2-120 -

## Y-SDJCR

Screw-on Y-axis turning toolholder with 93° approach angle, for positive 55° rhombic inserts



Inch	H	B	LF	LH	HTB	WF2	Insert	
Y-SDJCR062-IN	0.375	0.375	4.724	0.984	0.787	0	DC**21.5...	DC**21.5...WP(TFD07...)
Y-SDJCR082-IN	0.500	0.500	4.724	0.984	0.787	0	DC**21.5...	DC**21.5...WP(TFD07...)
Y-SDJCR083-IN	0.500	0.500	4.724	0.984	0.787	0	DC**32.5...	DC**32.5...WP(TFD11...)
Y-SDJCR103-IN	0.625	0.625	4.724	0.984	0.787	0	DC**32.5...	DC**32.5...WP(TFD11...)
Metric	H	B	LF	LH	HTB	WF2	Insert	
Y-SDJCR10-07S	10	10	120	20	20	0	DC**0702...	DC**0702...WP(TFD07...)
Y-SDJCR10-11MS	10	10	120	22	20	0	DC**11T3...	DC**11T3...WP(TFD11...)
Y-SDJCR10-11S	10	10	120	20	20	0	DC**11T3...	DC**11T3...WP(TFD11...)
Y-SDJCR12-07S	12	12	120	20	20	0	DC**0702...	DC**0702...WP(TFD07...)
Y-SDJCR12-11MS	12	12	120	22	20	0	DC**11T3...	DC**11T3...WP(TFD11...)
Y-SDJCR12-11S	12	12	120	20	20	0	DC**11T3...	DC**11T3...WP(TFD11...)
Y-SDJCR16-11S	16	16	120	20	20	0	DC**11T3...	DC**11T3...WP(TFD11...)

NOTE: Use a right-handed (R) or non-handed insert.

NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter.

→10-1

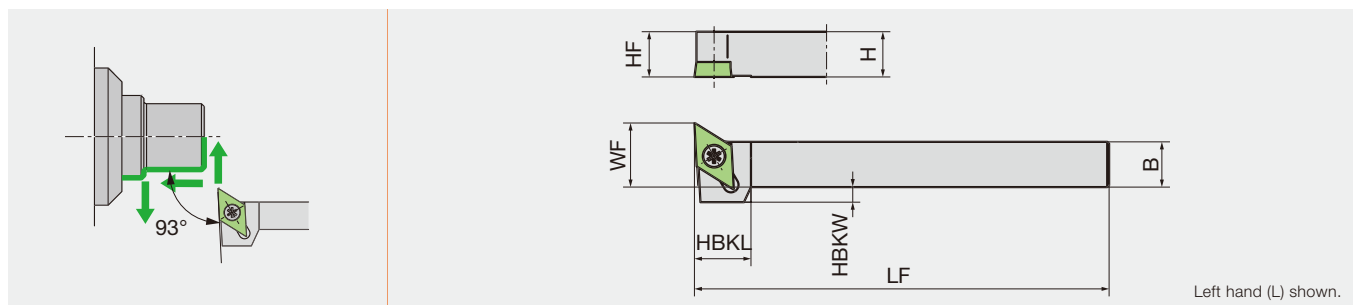
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
Y-SDJCR062-IN, Y-SDJCR082-IN, Y-SDJCR**-07S	LRIS-2.5*7	CLR-15S
Y-SDJCR083-IN, Y-SDJCR103-IN, Y-SDJCR**-11**	LRIS-4*10	LLR-25S-20*65

## CH-SDUC

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts, for horizontal gang style tool post



Metric	H	B	LF	HBKL	HBKW	HF	WF	Insert	
CH-SDUCL1010H11	10	10	100	15	6	10	15	DC**11T3...	DC**11T3...WP(TFD11...)
CH-SDUCL1212H11	12	12	100	15	4	12	17	DC**11T3...	DC**11T3...WP(TFD11...)
CH-SDUCL1616H11	16	16	100	-	-	16	21	DC**11T3...	DC**11T3...WP(TFD11...)
CH-SDUCL2020H11	20	20	100	-	-	20	25	DC**11T3...	DC**11T3...WP(TFD11...)

NOTE: Use a right-handed (R) or non-handed insert.

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CH-SDUCL**H11	LRIS-4*12PW	CLR-15S

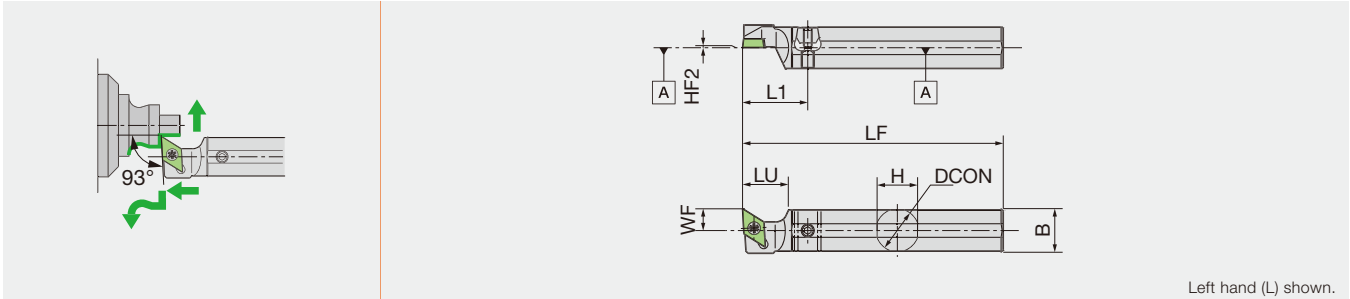
Reference pages : Inserts → 2-23 -, CBN → 2-91 -, PCD → 2-120 -

# DC

 Rhombic, 55°  
with hole  
Positive 7°

## DS-SDU-ACH

Screw-on round-shank toolholder with 93° approach angle, for positive 55° rhombic inserts, with adjustable centerline height capability



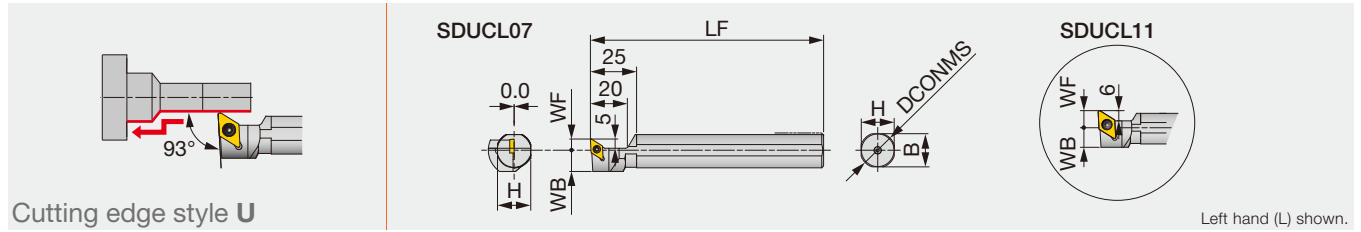
Metric	H	B	LF	DCON	HF2	LU	L1	WF	Insert	
DS-SDUL16F-11-ACH	15.5	15.5	80	16	Type B(0~+0.3)	17	30	10	DC**11T3...	DC**11T3...WP(TFD11...)
DS-SDUL19-11-ACH	18	18	120	19.05	Type A(0~+0.2)	20	30	10	DC**11T3...	DC**11T3...WP(TFD11...)
DS-SDUL20-11-ACH	19	19	120	20	Type B(0~+0.3)	20	30	10	DC**11T3...	DC**11T3...WP(TFD11...)
DS-SDUL22-11-ACH	21	21	120	22	Type B(0~+0.3)	20	30	10	DC**11T3...	DC**11T3...WP(TFD11...)
DS-SDUL25-11-ACH	24	24	150	25.4	Type A(0~+0.2)	20	30	10	DC**11T3...	DC**11T3...WP(TFD11...)
DS-SDUL25-11MET-ACH	24	24	150	25	Type A(0~+0.2)	20	30	10	DC**11T3...	DC**11T3...WP(TFD11...)

### SPARE PARTS



Designation	Clamp screw	Screw (for Wedge)	Wedge	Wrench (for Clamp screw)	Wrench (for Wedge)
DS-SDUL1**11-ACH	LRIS-4*10	WS060415-003	ACH-W18	LLR-25S-20*65	LW-3
DS-SDUL20-11-ACH	LRIS-4*10	WS060419-004	ACH-W18	LLR-25S-20*65	LW-3
DS-SDUL22-11-ACH	LRIS-4*10	WS060419-004	ACH-W18	LLR-25S-20*65	LW-3
DS-SDUL25-11**-ACH	LRIS-4*10	WS060419-004	ACH-W24	LLR-25S-20*65	LW-3

Screw-on round-shank toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style U

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

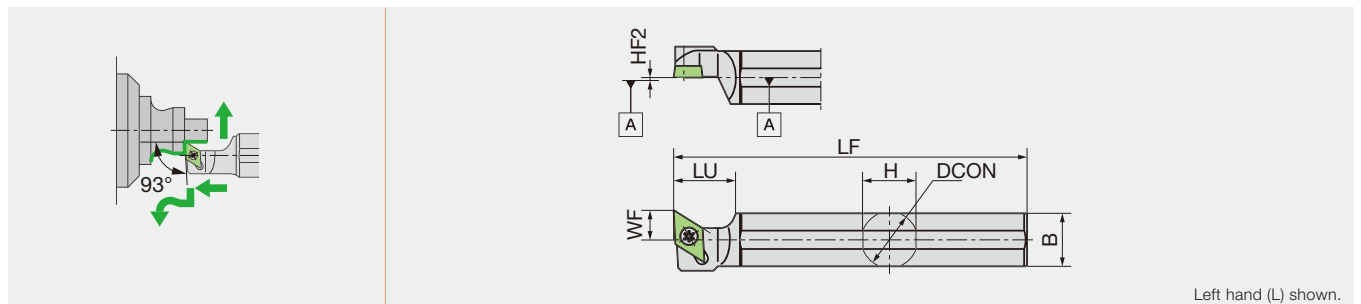
Torque\*: Recommended clamping torque (N·m)  
RE\*\*: Standard corner radius

### SPARE PARTS

Designation	Clamping screw	Wrench
JS**K-SDUCL07	CSTB-2.5	T-8F
JS**K-SDUCL11	CSTB-4SD	T-8F

### DS-SDU

Screw-on round-shank toolholder with 93° approach angle, for positive 55° rhombic inserts



Metric	H	B	LF	DCON	HF2	LU	WF	Insert
DS-SDUL15H-07	15	15	100	15.875	0	20	6	DC**0702... DC**0702...WP(TFD07...)
DS-SDUL16F-07	15	15	80	16	0	20	6	DC**0702... DC**0702...WP(TFD07...)
DS-SDUL16F-11	15	15	80	16	0	20	10	DC**11T3... DC**11T3...WP(TFD11...)
DS-SDUL16X-07	15	15	95	16	0	20	6	DC**0702... DC**0702...WP(TFD07...)
DS-SDUL19-07	18	18	120	19.05	0	20	6	DC**0702... DC**0702...WP(TFD07...)
DS-SDUL19-11	18	18	120	19.05	0	20	10	DC**11T3... DC**11T3...WP(TFD11...)
DS-SDUL20-07	19	19	120	20	0	20	6	DC**0702... DC**0702...WP(TFD07...)
DS-SDUL20-11	19	19	120	20	0	20	10	DC**11T3... DC**11T3...WP(TFD11...)
DS-SDUL20X-07	19	19	95	20	0	20	6	DC**0702... DC**0702...WP(TFD07...)
DS-SDUL20X-11	19	19	95	20	0	20	10	DC**11T3... DC**11T3...WP(TFD11...)
DS-SDUL22-07	21	21	120	22	0	20	6	DC**0702... DC**0702...WP(TFD07...)
DS-SDUL22-11	21	21	120	22	0	20	10	DC**11T3... DC**11T3...WP(TFD11...)
DS-SDUL25-11	24	24	150	25.4	0	20	10	DC**11T3... DC**11T3...WP(TFD11...)
DS-SDUL25-11SPL	24	24	150	25.4	0	20	12.5	DC**11T3... DC**11T3...WP(TFD11...)

NOTE: Use a right-handed (R) or non-handed insert.

### SPARE PARTS

Designation	Clamp screw	Wrench (for Clamp screw)
DS-SDUL**-07	LRIS-2.5*7	CLR-15S
DS-SDUL**-11...	LRIS-4*10	LLR-25S-20*65

Reference pages : Inserts → 2-23 -, CBN → 2-91 -, PCD → 2-120 -

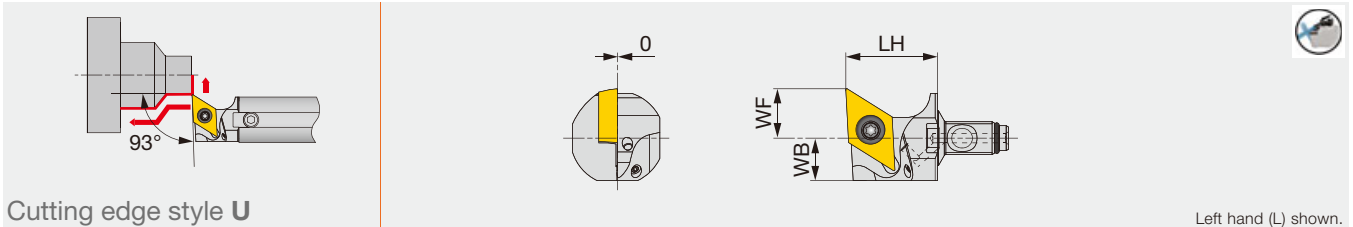
# DC

 **Rhombic, 55° with hole**  
**Positive 7°**

## MODUM<sup>INI</sup>TURN QR12-SDUCL-CHP

**J-SERIES**

Screw-on modular head with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **U**

Left hand (L) shown.

Metric	LH	WF	WB	RE**	Insert	Torque*	Shank
QR12C-SDUCL11-CHP	19.5 (0.768")	8.5 (0.335")	10.7 (0.421")	0.2 (0.008")	DC**11T3... (DC** 32.5...)	1.2 (0.89)	A16*-QR12
QR12D-SDUCL11-CHP	19.5 (0.768")	10.5 (0.413")	9 (0.354")	0.2 (0.008")	DC**11T3... (DC** 32.5...)	1.2 (0.89)	A19/20*-QR12

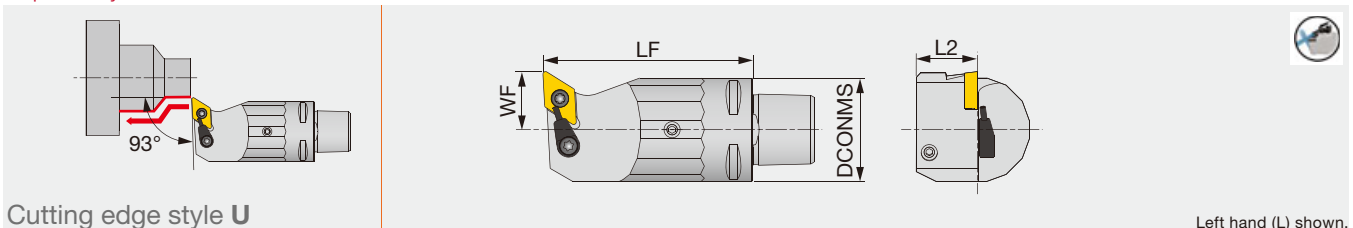
Torque\*: Recommended clamping torque: N-m (lbf-ft)  
RE\*\*: Standard corner radius

### SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QR12*-SDUCL11-CHP	CSTB-4SD	T-8F	ORSS-0454.5X1.0NBR70

## TUNG<sup>AP</sup>CAP 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...

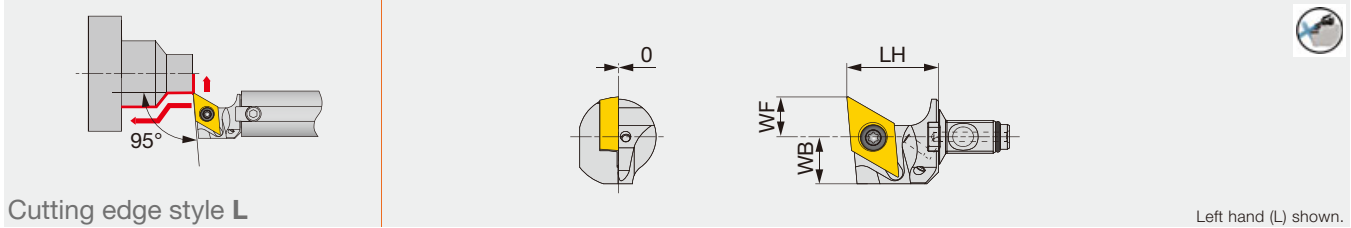
Applicable for 14 MPa (2031 PSI) coolant  
Cannot be used for boring

### SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench
C3SDUCL...	CSTB-4S	S-CU-CHP	T-15F



Screw-on modular head with 95° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style L

Left hand (L) shown.

Metric	LH	WF	WB	RE**	Insert	Torque*	Shank
QR12C-SDLCL11-CHP	19.5 (0.768")	8.5 (0.335")	10 (0.394")	0.2 (0.008")	DC**11T3... (DC** 32.5...)	1.2 (0.89)	A16*-QR12
QR12D-SDLCL11-CHP	19.5 (0.768")	10.5 (0.413")	9 (0.354")	0.2 (0.008")	DC**11T3... (DC** 32.5...)	1.2 (0.89)	A19/20*-QR12

Torque\*: Recommended clamping torque: N-m (lbf-ft)

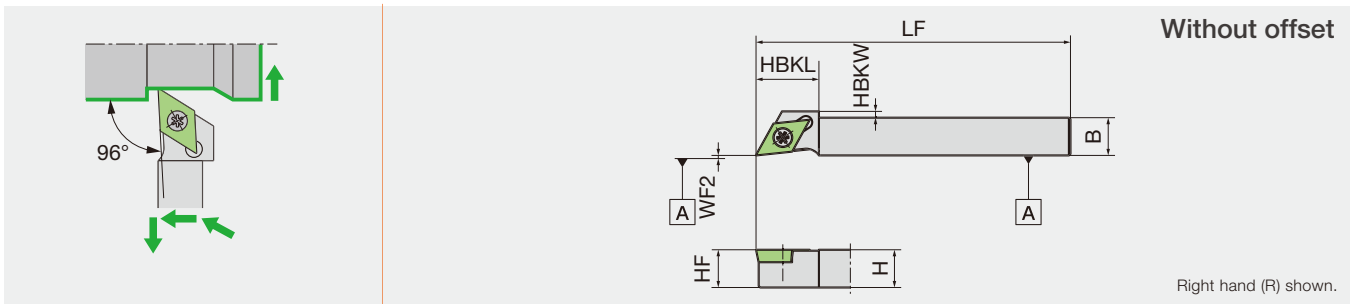
RE\*\*: Standard corner radius

### SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QR12*-SDLCL11-CHP	CSTB-4SD	T-8F	ORSS-0454.5X1.0NBR70

## SDXCR-N

Screw-on toolholder with 96° approach angle, for positive 55° rhombic inserts



Without offset

Right hand (R) shown.

Metric	H	B	LF	HBKL	HBKW	HF	WF2	Insert
SDXCR1010X11N	10	10	120	20	3	10	0	DC**11T3...
SDXCR1212X11N	12	12	120	20	1	12	0	DC**11T3...
SDXCR1616X11N	16	16	120	-	-	16	0	DC**11T3...

NOTE: Use a right-handed (R) or non-handed insert.

### SPARE PARTS

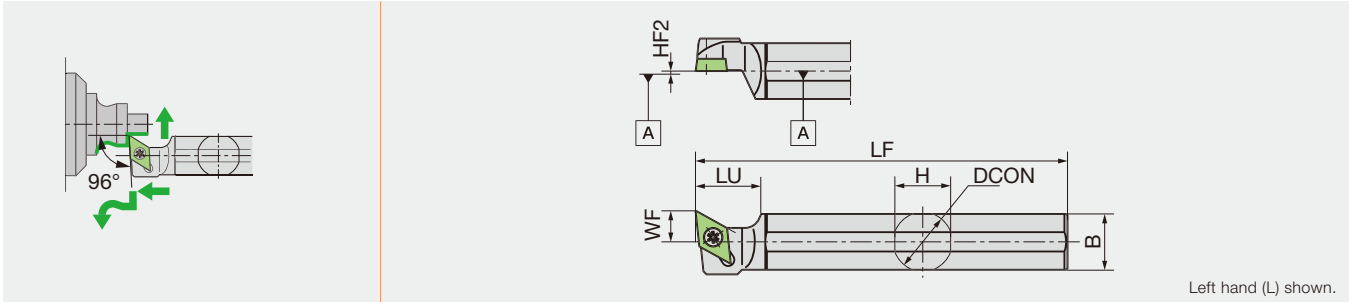
Designation	Clamp screw	Wrench (for Clamp screw)
SDXCR**X11N	LRIS-4*10	LLR-25S

# DC

**Rhombic, 55° with hole**  
**Positive 7°**

## DS-SDXL

Screw-on round-shank toolholder with 96° approach angle, for positive 55° rhombic inserts



Metric	H	B	LF	DCON	HF2	LU	WF	Insert
DS-SDXL19-11	18	18	120	19.05	0	20	10	DC**11T3...
DS-SDXL20-11	19	19	120	20	0	20	10	DC**11T3...
DS-SDXL20X-11	19	19	95	20	0	20	10	DC**11T3...
DS-SDXL25-11MET	24	24	120	25	0	20	10	DC**11T3...
DS-SDXL32-11	30	30	150	32	0	20	10	DC**11T3...

NOTE: Use a right-handed (R) or non-handed insert.

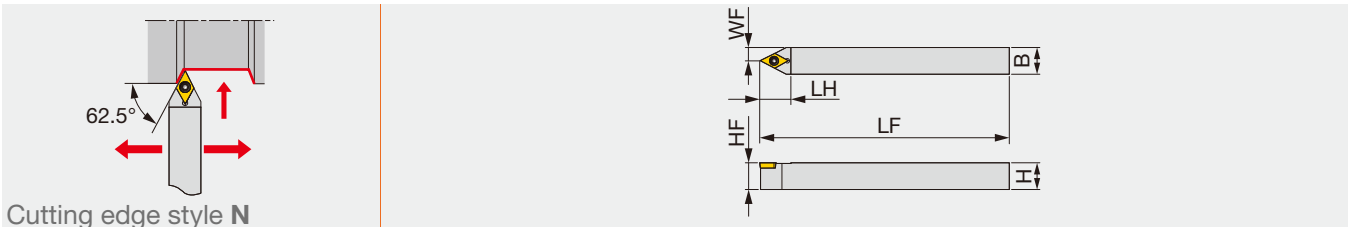
### SPARE PARTS

Designation	Clamp screw	Wrench (for Clamp screw)
DS-SDXL**	LRIS-4*10	LLR-25S

## J-SERIES

### 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

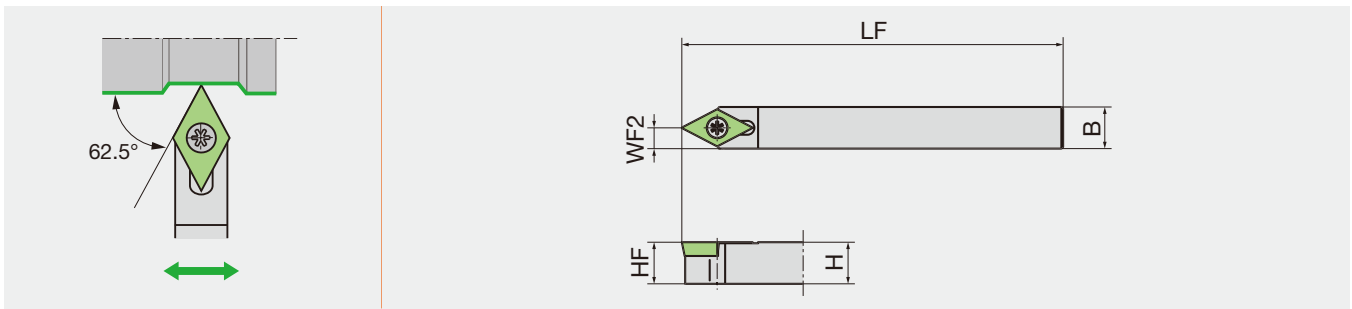
### SPARE PARTS

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 : Inserts → 2-23 -, CBN → 2-91 -, PCD → 2-120 -

## SDNCN

Screw-on toolholder with 62.5° approach angle, for positive 55° rhombic inserts



Inch	H	B	LF	HF	WF2	Insert
SDNCN-062	0.375	0.375	2.500	0.375	0.187	DC**21.5...
SDNCN-082	0.500	0.500	3.500	0.500	0.250	DC**21.5...
SDNCN-083	0.500	0.500	3.937	0.500	0.250	DC**32.5...
SDNCN-103	0.625	0.625	3.937	0.625	0.313	DC**32.5...
Metric	H	B	LF	HF	WF2	Insert
SDNCN08-X07	8	8	120	8	4	DC**0702...
SDNCN12-X11	12	12	120	12	6	DC**11T3...

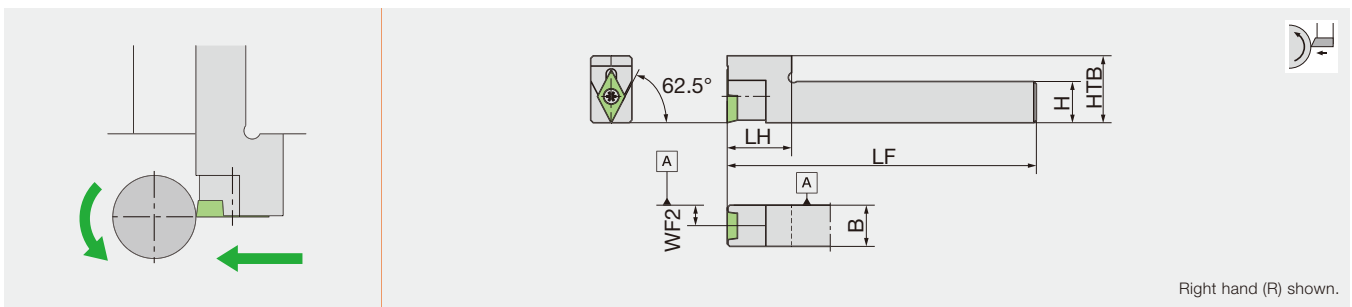
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
SDNCN-062	LRIS-2.5*7	CLR-15S
SDNCN-082	LRIS-2.5*7	CLR-15S
SDNCN-083	LRIS-4*10	LLR-25S
SDNCN-103	LRIS-4*10	LLR-25S
SDNCN08-X07	LRIS-2.5*7	CLR-15S
SDNCN12-X11	LRIS-4*10	LLR-25S

## Y-SDNCN

Screw-on Y-axis turning toolholder with 62.5° approach angle, for positive 55° rhombic inserts



Right hand (R) shown.

Inch	H	B	LF	LH	HTB	WF2	Insert
Y-SDNCN083-IN	0.500	0.500	4.724	0.984	0.827	0.250	DC**32.5...
Metric	H	B	LF	LH	HTB	WF2	Insert
Y-SDNCN12-11S	12	12	120	20	21	6	DC**11T3...
Y-SDNCN16-11S	16	16	120	20	21	8	DC**11T3...

NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter.

→10-1

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
Y-SDNCN083-IN, Y-SDNCN**11S	LRIS-4*10	LLR-25S-20*65

Reference pages : Inserts → 2-23 -, CBN → 2-91 -, PCD → 2-120 -

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

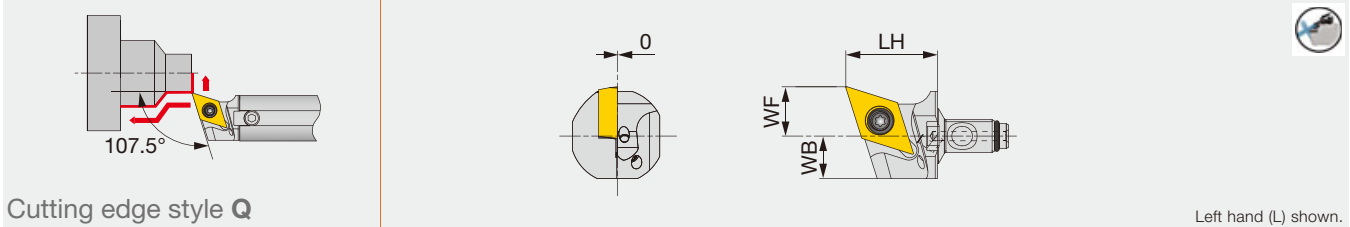
# DC

 Rhombic, 55°  
with hole  
Positive 7°

## MODUM<sup>INI</sup>TURN QR12-SDQCL-CHP

**J-SERIES**

Screw-on modular head with 107.5° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **Q**

Left hand (L) shown.

Metric	LH	WF	WB	RE**	Insert	Torque*	Shank
QR12C-SDQCL11-CHP	19.5 (0.768")	8.5 (0.335")	8 (0.315")	0.2 (0.008")	DC**11T3... (DC** 32.5...)	1.2 (0.89)	A16*-QR12
QR12D-SDQCL11-CHP	19.5 (0.768")	10.5 (0.413")	9 (0.354")	0.2 (0.008")	DC**11T3... (DC** 32.5...)	1.2 (0.89)	A19/20*-QR12

Torque\*: Recommended clamping torque: N-m (lbf-ft)  
RE\*\*: Standard corner radius

### SPARE PARTS

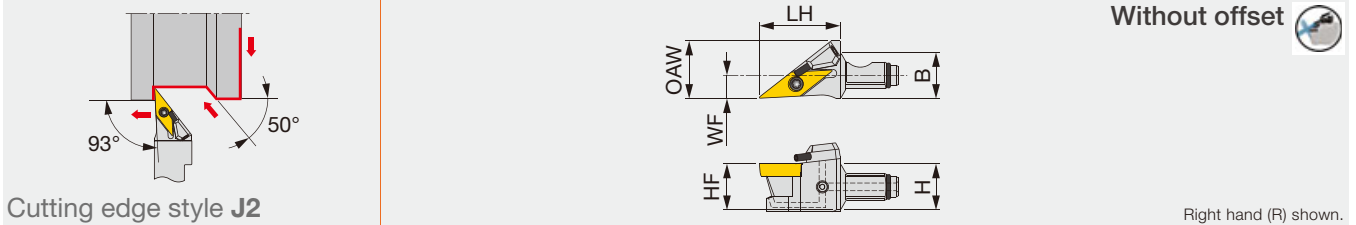
Designation	Clamping screw	Wrench	O-ring
QR12*-SDQCL11-CHP	CSTB-4SD	T-8F	ORSS-0454.5X1.0NBR70

# VB

 **Rhombic, 35°  
with hole  
Positive 5°**

## MODUM<sup>INI</sup>TURN QC12/16-JSVJ2BR-CHP

Screw-on modular head with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability

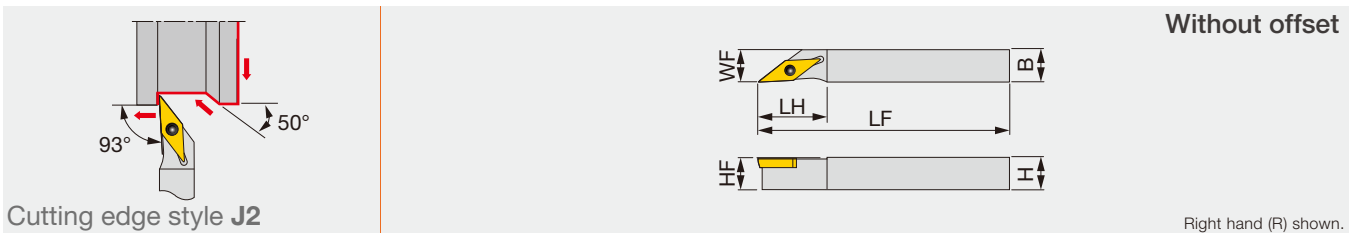


Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC12-JSVJ2BR11-CHP	12 (0.750")	12 (0.750")	21 (0.827")	12 (0.472")	6 (0.236")	15 (0.591")	0.2 (0.008")	VB**1103... (VB** 22...)	1.2 (0.89)
QC16-JSVJ2BR11-CHP	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	8 (0.315")	20 (0.787")	0.2 (0.008")	VB**1103... (VB** 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



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-CHP	CSTB-2.5	T-8F	ORSS-0454.5X1.0NBR70	NZ-1.10-7-CHP	SSHM4-4-TB	P-2
QC16-JSVJ2BR11-CHP	CSTB-2.5	T-8F	ORSS-0757.5X1.0NBR70	NZ-1.10-7-CHP	SSHM3-3	-
JSVJ2BR/L...	CSTB-2.5	T-8F	-	-	-	-

Reference pages : Inserts → 2-48 -, CBN → 2-99 -, Shank, Accessory → 3-130 -

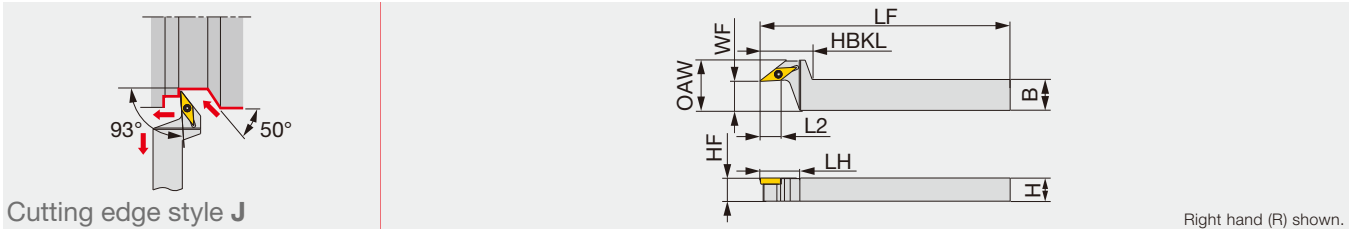
Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

# 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



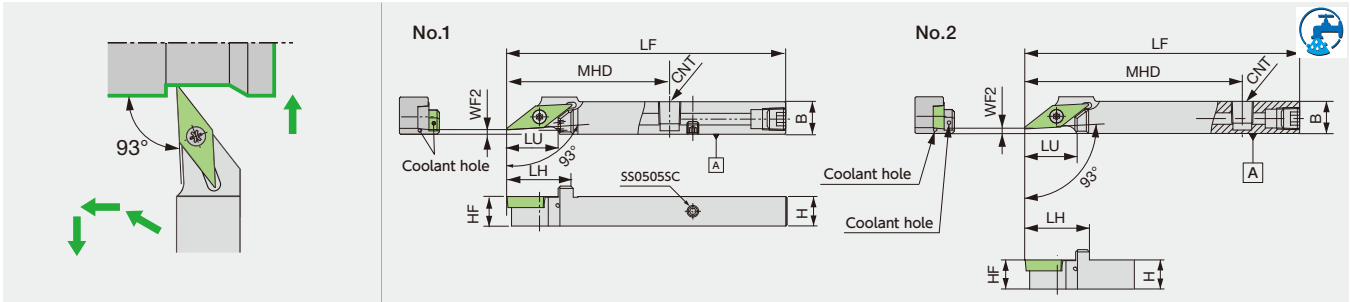
Right hand (R) shown.

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

## SVJBR-OH/OH2

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



Inch	H	B	LF	LH	HF	LU	MHD	WF2	CNT	CNT2	Insert	Figure
SVJBL083C-F079-OH	0.500	0.551	4.724	1.102	0.846	0.500	3.74	0.079	NPT1/8	-	VB**33... VB**33...WP(TFV11...)	2
SVJBL103C-F079-OH	0.625	0.625	4.724	1.102	0.846	0.625	3.74	0.079	NPT1/8	-	VB**33... VB**33...WP(TFV11...)	2
SVJBR083C-F079-OH2	0.500	0.551	4.724	1.102	0.846	0.500	2.756	0.079	NPT1/8	M5	VB**33... VB**33...WP(TFV11...)	1
SVJBR103C-F079-OH	0.625	0.625	4.724	1.102	0.846	0.625	3.74	0.079	NPT1/8	-	VB**33... VB**33...WP(TFV11...)	2
SVJBR103C-F079-OH2	0.625	0.625	4.724	1.102	0.846	0.625	2.756	0.079	NPT1/8	M5	VB**33... VB**33...WP(TFV11...)	1

Metric	H	B	LF	LH	HF	LU	MHD	WF2	CNT	CNT2	Insert	Figure
SVJBL1214X16N-F02OH	12	14	120	28	21.5	12	95	2	NPT1/8	-	VB**1604... VB**1604...WP(TFV11...)	2
SVJBL1616X16N-F02OH	16	16	120	28	21.5	16	95	2	NPT1/8	-	VB**1604... VB**1604...WP(TFV11...)	2
SVJBR1214X16N-F02OH	12	14	120	28	21.5	12	95	2	NPT1/8	-	VB**1604... VB**1604...WP(TFV11...)	2
SVJBR1616X16N-F02OH	16	16	120	28	21.5	16	95	2	NPT1/8	-	VB**1604... VB**1604...WP(TFV11...)	2

### SPARE PARTS

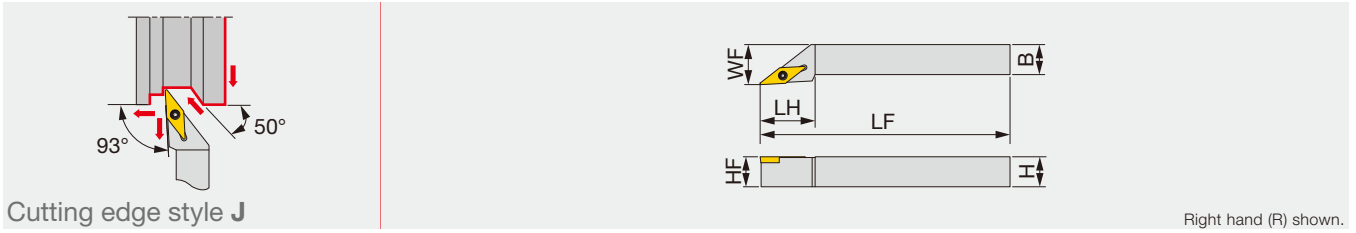


Designation	Clamping screw	screw	screw	Wrench 1	Wrench 2
SVJBL083C-F079-OH	LRIS-4*10	SPNPT1/8	-	LLR-25S	-
SVJBL103C-F079-OH	LRIS-4*10	SPNPT1/8	-	LLR-25S	-
SVJBR083C-F079-OH2	LRIS-4*10	SPNPT1/8	SS0505SC	LLR-25S	LW-2.5
SVJBR103C-F079-OH	LRIS-4*10	SPNPT1/8	-	LLR-25S	-
SVJBR103C-F079-OH2	LRIS-4*10	SPNPT1/8L	SS0505SC	LLR-25S	LW-2.5
SVJBL1214X16N-F02OH	LRIS-4*10	LLR-25S	-	-	-
SVJBL1616X16N-F02OH	LRIS-4*10	LLR-25S	-	-	-
SVJBR1214X16N-F02OH	LRIS-4*10	LLR-25S	-	-	-
SVJBR1616X16N-F02OH	LRIS-4*10	LLR-25S	-	-	-

Reference pages : Inserts → 2-48 -, CBN → 2-99 -

## 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

### SPARE PARTS



Torque: Recommended clamping torque: lbs-ft (\*N·m) RE\*\*: Standard corner radius

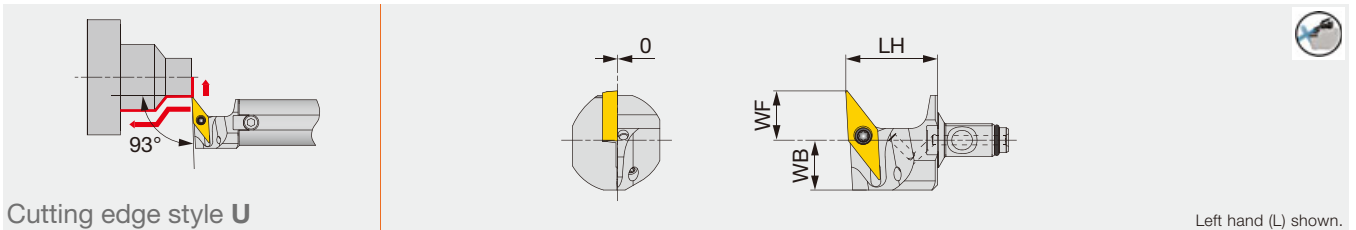
Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSVJBR**-F15, JSVJBR/L...	CSTB-2.5	T-8F	(T-8L)

## MODUM<sup>INI</sup>TURN

### QR12-SVUBL-CHP

J-SERIES

Screw-on modular head with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



Cutting edge style U

Left hand (L) shown.

Metric	LH	WF	WB	RE**	Insert	Torque*	Shank
QR12C-SVUBL11-CHP	19.5 (0.768")	8.5 (0.335")	13 (0.512")	0.2 (0.008")	VB**1103... (VB** 22...)	1.2 (0.89")	A16*-QR12
QR12D-SVUBL11-CHP	19.5 (0.768")	10.5 (0.413")	10.6 (0.417")	0.2 (0.008")	VB**1103... (VB** 22...)	1.2 (0.89")	A19/20*-QR12

### SPARE PARTS

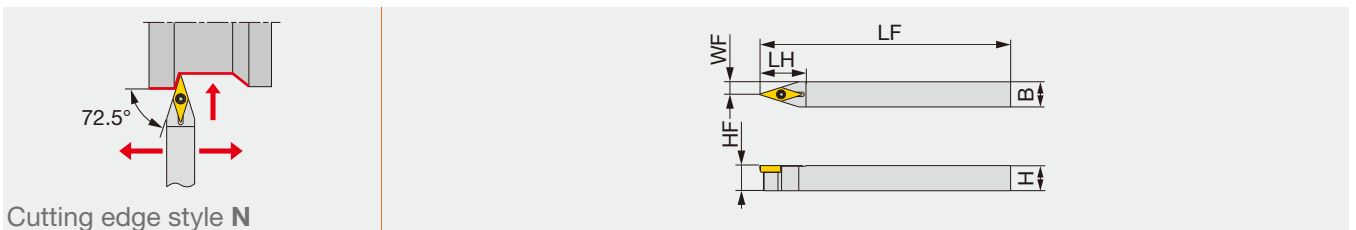


Torque\*: Recommended clamping torque: N·m (lbf·ft)  
RE\*\*: Standard corner radius

Designation	Clamping screw	Wrench	O-ring
QR12*-SVUBL11-CHP	CSTB-2.5	T-8F	ORSS-0454.5X1.0NBR70

## JSVNB

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*
JSVNB1010X11	10	10	120	22	10	5	0.2	VB**1103...	1.2
JSVNB1212F11	12	12	85	22	12	6	0.2	VB**1103...	1.2
JSVNB1212X11	12	12	120	22	12	6	0.2	VB**1103...	1.2
JSVNB1616X11	16	16	120	22	16	8	0.2	VB**1103...	1.2

### SPARE PARTS



Torque\*: Recommended clamping torque (N·m)  
RE\*\*: Standard corner radius

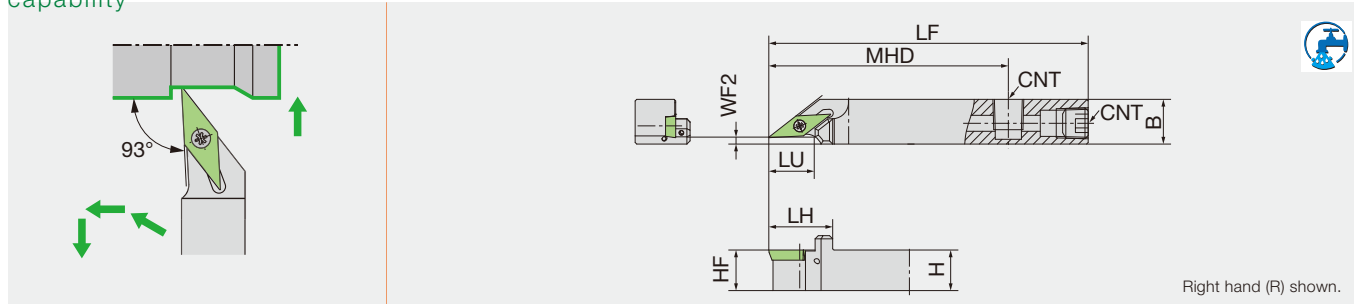
Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSVNB...	CSTB-2.5	T-8F	(T-8L)

# VC

Rhombic, 35° with hole  
Positive 7°

## SVJCR-OH

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



Inch	H	B	LF	LH	HF	LU	MHD	WF2	CNT	Insert
SVJCR062H-F079-OH	0.375	0.472	3.937	0.787	0.375	0.571	2.953	0.079	M6×1	VC**22... VC**22...WP(TFV11...)
SVJCR082H-F079-OH	0.500	0.551	3.937	0.787	0.500	0.571	2.953	0.079	NPT1/8	VC**22... VC**22...WP(TFV11...)
SVJCR102H-F079-OH	0.625	0.625	3.937	0.787	0.625	0.571	2.953	0.079	NPT1/8	VC**22... VC**22...WP(TFV11...)
SVJCR082H-F079-OH2	0.500	0.551	3.937	0.787	0.500	0.571	2.756	0.079	NPT1/8	VC**22... VC**22...WP(TFV11...)
SVJCR102X-F079-OH2	0.625	0.625	4.724	0.787	0.625	0.571	2.756	0.079	NPT1/8	VC**22... VC**22...WP(TFV11...)
SVJCR082H-F500-OH2	0.500	0.972	3.937	0.787	0.500	0.571	2.756	0.500	NPT1/8	VC**22... VC**22...WP(TFV11...)

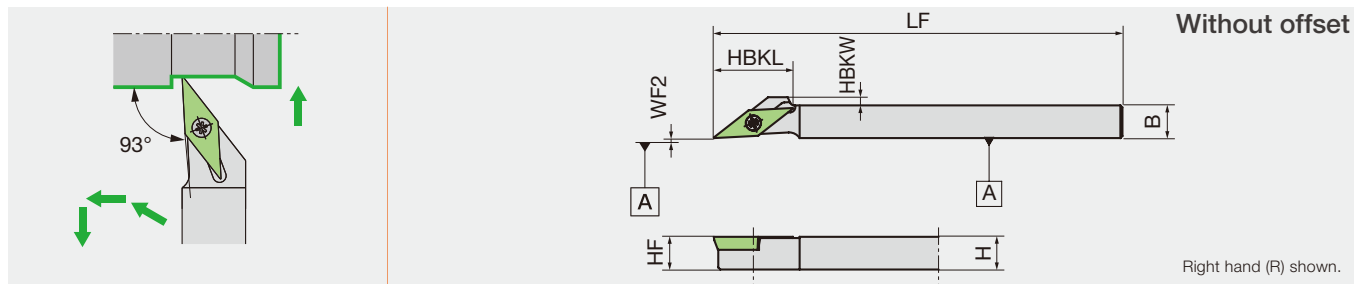
Metric	H	B	LF	LH	HF	LU	MHD	WF2	CNT	Insert
SVJCR1014F11N-F02OH	10	14	80	21	10	18	55	2	M6×1	VC**1103... VC**1103...WP(TFV11...)
SVJCR1214H11N-F02OH	12	14	100	21	12	18	75	2	Rc1/8	VC**1103... VC**1103...WP(TFV11...)
SVJCR1616H11N-F02OH	16	16	100	21	16	18	75	2	Rc1/8	VC**1103... VC**1103...WP(TFV11...)

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT)	Wrench (for Clamp screw)	Wrench (for CNT)
SVJCR062H-F079-OH, SVJCR1014F11N-F02OH	LRIS-2.5*7	SS0605SC	-	CLR-15S	LW-3
SVJCR082H-F079-OH, SVJCR102H-F079-OH	LRIS-2.5*7	SPNPT1/8	SS0505SC	CLR-15S	-
SVJCR082H-F079-OH2	LRIS-2.5*7	SPNPT1/8	-	CLR-15S	LW-2.5
SVJCR102X-F079-OH2	LRIS-2.5*7	SPNPT1/8L	-	CLR-15S	LW-2.5
SVJCR1214H11N-F02OH, SVJCR1616H11N-F02OH	LRIS-2.5*7	SPR1/8	-	CLR-15S	-

## SVJCR/L

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts



Inch	H	B	LF	HBKL	HBKW	HF	WF2	Insert
SVJCR-062C	0.375	0.375	4.724	-	-	0.375	0	VC**22... VC**22...WP(TFV11...)
SVJCR-082C	0.500	0.500	4.724	-	-	0.500	0	VC**22... VC**22...WP(TFV11...)
SVJCR-102C	0.625	0.625	4.724	-	-	0.625	0	VC**22... VC**22...WP(TFV11...)
SVJCR082C-F250	0.500	0.709	4.724	0.827	-	0.500	0.250	VC**22... VC**22...WP(TFV11...)
SVJCR082C-F500	0.500	0.984	4.724	0.827	-	0.500	0.500	VC**22... VC**22...WP(TFV11...)

Metric	H	B	LF	HBKL	HBKW	HF	WF2	Insert
SVJCR0808H11N	8	8	100	19	2	8	0	VC**1103... VC**1103...WP(TFV11...)
SVJCR1010X11N	10	10	120	-	-	10	0	VC**1103... VC**1103...WP(TFV11...)
SVJCR1212X11N	12	12	120	-	-	12	0	VC**1103... VC**1103...WP(TFV11...)
SVJCR1616X11N	16	16	120	-	-	16	0	VC**1103... VC**1103...WP(TFV11...)
SVJCL1010X11N	10	10	120	-	-	10	0	VC**1103... VC**1103...WP(TFV11...)
SVJCL1212X11N	12	12	120	-	-	12	0	VC**1103... VC**1103...WP(TFV11...)
SVJCL1616X11N	16	16	120	-	-	16	0	VC**1103... VC**1103...WP(TFV11...)

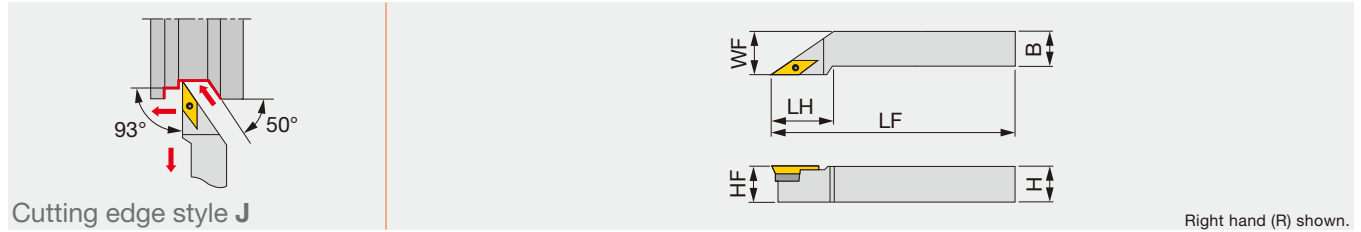
### SPARE PARTS

Designation	Clamp screw	Wrench (for Clamp screw)
SVJCR-**C, SVJCR-**C-F..., SVJCR**11N	LRIS-2.5*7	CLR-15S



## SVJCR/L

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts



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...

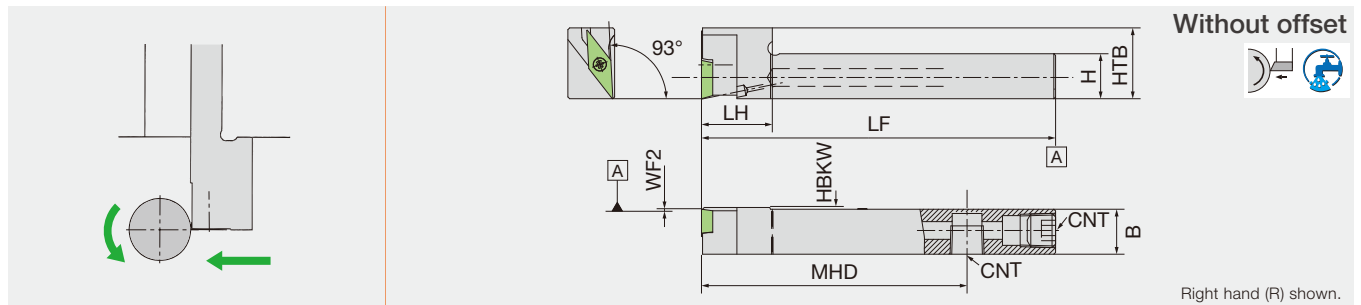
\*\*RE: Standard corner radius

### 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

## Y-SVJCR-OH

Screw-on Y-axis turning toolholder with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



Inch	H	B	LF	LH	HBKW	HTB	MHD	WF2	CNT	Insert
Y-SVJCR062H-IN-OH	0.472	0.375	3.937	0.984	0.020	0.787	2.953	0	M6x1	VC**22... WP(TFV11...)
Y-SVJCR082HS-IN-OH	0.500	0.500	3.937	0.787	0.020	0.787	2.953	0	NPT1/8	VC**22... WP(TFV11...)
Y-SVJCR102H-IN-OH	0.625	0.625	3.937	0.984	0.020	0.787	2.953	0	NPT1/8	VC**22... WP(TFV11...)
Y-SVJCR082HS-IN-OH2	0.500	0.500	3.937	0.787	0.020	0.787	2.756	0	NPT1/8	VC**22... WP(TFV11...)

Metric	H	B	LF	LH	HBKW	HTB	MHD	WF2	CNT	Insert
Y-SVJCR1212H11S-OH	12	12	100	20	0.5	20	75	0	Rc1/8	VC**1103... WP(TFV11...)
Y-SVJCR1616H11S-OH	16	16	100	20	0.5	20	75	0	Rc1/8	VC**1103... WP(TFV11...)

NOTE: Use a right-handed (R) or non-handed insert.

NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter.

→10-1

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT)	Wrench (for Clamp screw)	Wrench (for CNT)
Y-SVJCR062H-IN-OH	LRIS-2.5*7	SS0605SC	-	CLR-15S	LW-3
Y-SVJCR082HS-IN-OH	LRIS-2.5*7	SPNPT1/8	-	CLR-15S	-
Y-SVJCR102H-IN-OH	LRIS-2.5*7	SPNPT1/8	-	CLR-15S	-
Y-SVJCR082HS-IN-OH2	LRIS-2.5*7	SPNPT1/8	SS0505SC	CLR-15S	LW-2.5
Y-SVJCR**H11S-OH	LRIS-2.5*7	SPR1/8	-	CLR-15S	-

Reference pages : Inserts → 2-50 -, CBN → 2-101, PCD → 2-127

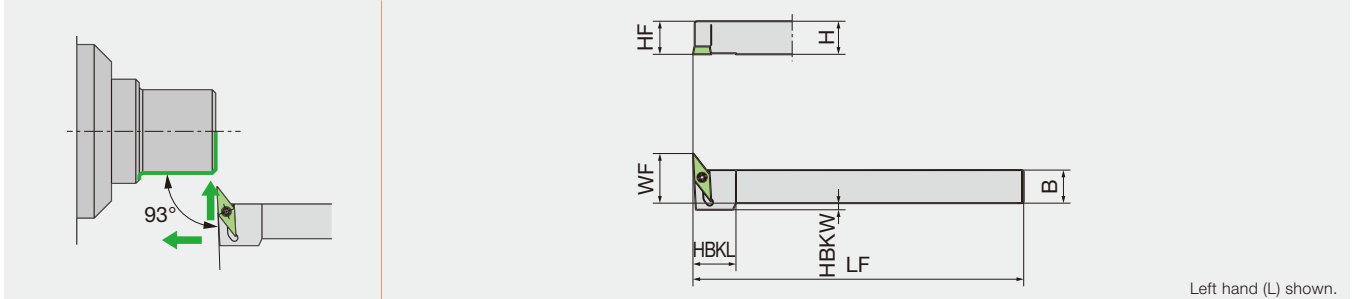
# VC



Rhombic, 35° with hole  
Positive 7°

## CH-SVUCL

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts, for horizontal gang style tool post



Metric	H	B	LF	HBKL	HBKW	HF	KAPR	WF	Insert	
CH-SVUCL1010H11	10	10	100	15	2	10	3°	18	VC**1103...	VC**1103...WP(TFV11...)
CH-SVUCL1212H11	12	12	100	-	-	12	3°	20	VC**1103...	VC**1103...WP(TFV11...)
CH-SVUCL1616H11	16	16	100	-	-	16	3°	24	VC**1103...	VC**1103...WP(TFV11...)
CH-SVUCL2020H11	20	20	100	-	-	20	3°	28	VC**1103...	VC**1103...WP(TFV11...)

NOTE: Use a right-handed (R) or non-handed insert.

### SPARE PARTS

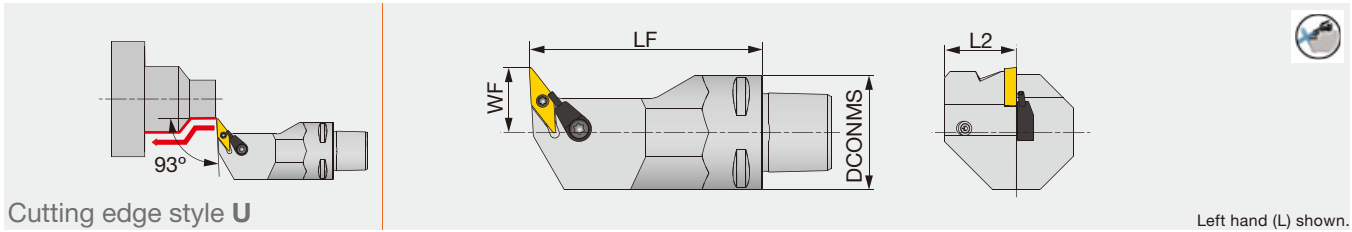


Designation	Clamp screw	Wrench (for Clamp screw)
CH-SVUCL**H11	LRIS-2.5*7	CLR-15S

# TUNGCAP

## C-SVUCL-CHP

Screw-on toolholder, with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



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

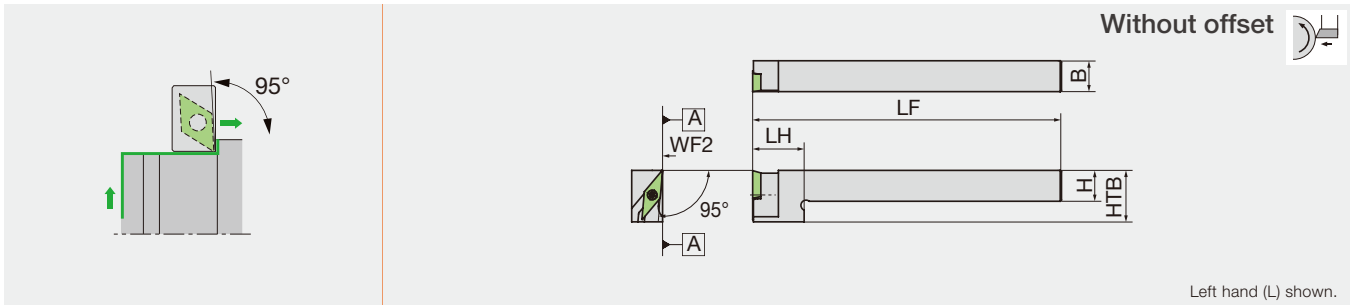


Designation	Clamping screw	Coolant unit	Wrench
C3SVUCL18065-11-CHP	CSTB-2.5	S-CU-CHP	T-8F

Reference pages : Inserts → 2-50 -, CBN → 2-101, PCD → 2-127

## Y-SVXCL

Screw-on Y-axis turning toolholder with 95° approach angle, for positive 35° rhombic inserts



Metric	H	B	LF	LH	WF2	Insert
Y-SVXCL12-11S	12	12	120	20	0	VC**1103...

NOTE: Use a left-handed (L) or non-handed insert.

NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter.  
→10-1

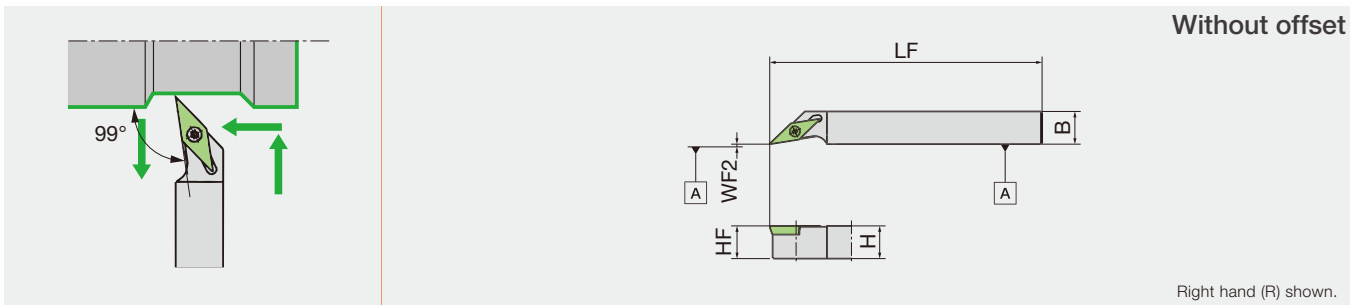
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
SVACR1010L13NW	LRIS-3*8	RLR-20S

## SVXCR/L-N

Screw-on toolholder with 99° approach angle, for positive 35° rhombic inserts



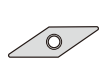
Metric	H	B	LF	HF	WF2	Insert
SVXCR1012X11N	10	12	120	10	0	VC**1103...
SVXCR1212X11N	12	12	120	12	0	VC**1103...
SVXCL1012X11N	10	12	120	10	0	VC**1103...

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
SVXCR**X11N	LRIS-2.5*7	CLR-15S

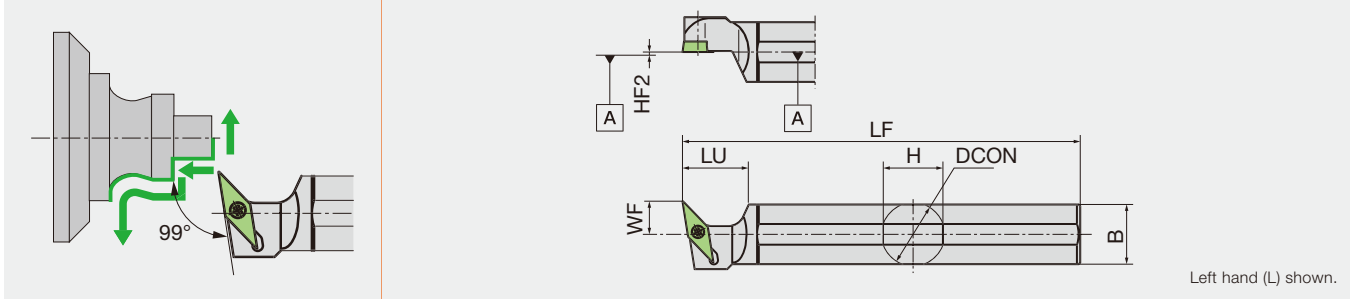
# VC



Rhombic, 35° with hole  
Positive 7°

## DS-SVXL

Screw-on round-shank toolholder with 99° approach angle, for positive 35° rhombic inserts



Metric	H	B	LF	DCON	HF2	LU	WF	Insert
DS-SVXL15H-11	15	15	100	15.875	0	20.5	10	VC**1103...
DS-SVXL16F-11	15	15	80	16	0	20.5	10	VC**1103...
DS-SVXL19-11	18	18	120	19.05	0	20	10	VC**1103...
DS-SVXL19-11SPL	18	18	160	19.05	0	20	11	VC**1103...
DS-SVXL20-11	19	19	120	20	0	20	10	VC**1103...
DS-SVXL20X-11	19	19	95	20	0	20	10	VC**1103...
DS-SVXL22-11	21	21	120	22	0	20	10	VC**1103...
DS-SVXL25-11	24	24	150	25.4	0	20	10	VC**1103...
DS-SVXL25-11MET	24	24	150	25	0	20	10	VC**1103...

NOTE: Use a right-handed (R) or non-handed insert.

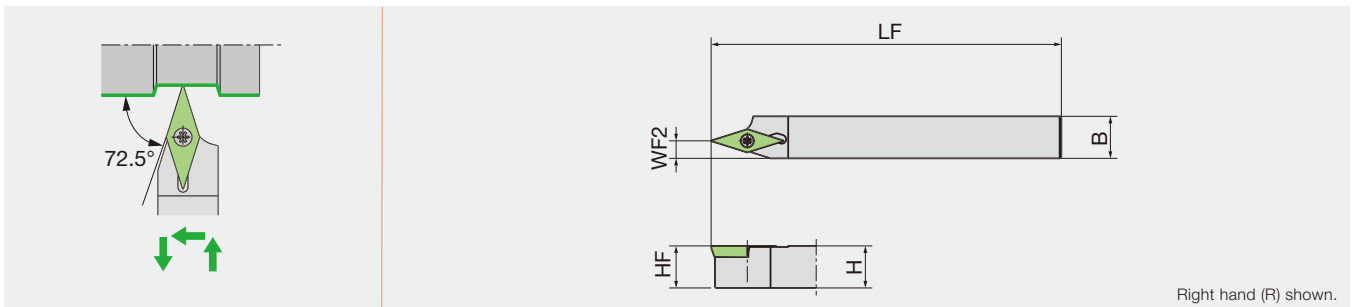
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
DS-SVXL**	LRIS-2.5*7	CLR-15S

## SVVC-N

Screw-on toolholder with 72.5° approach angle, for positive 35° rhombic inserts



Metric	H	B	LF	HF	WF2	Insert
SVVCR1212X11N	12	12	120	12	5	VC**1103...
SVVCR1616X11N	16	16	120	16	5	VC**1103...

### SPARE PARTS

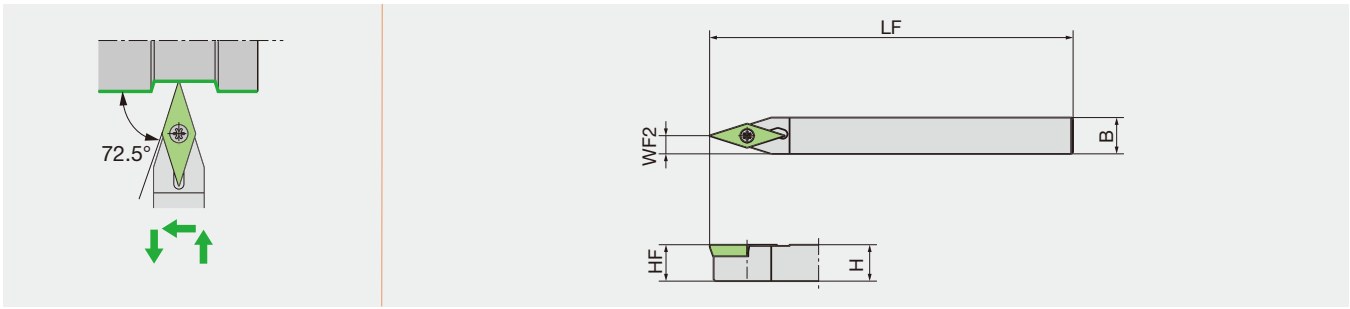


Designation	Clamp screw	Wrench (for Clamp screw)
SVVCR**	LRIS-2.5*7	CLR-15S

Reference pages : Inserts → **2-50** -, CBN → **2-101**, PCD → **2-127**

# SVVCN

Screw-on toolholder with 72.5° approach angle, for positive 35° rhombic inserts



Metric	H	B	LF	HF	WF2	Insert
SVVCN0808H11N	8	8	100	8	4	VC**1103...
SVVCN1010X11N	10	10	120	10	5	VC**1103...
SVVCN20-X11	20	20	120	20	10	VC**1103...

## SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
SVVCN**	LRIS-2.5*7	CLR-15S

- Grade 1
- Insert 2
- Ext. Toolholder 3
- Int. Toolholder 4
- Threading 5
- Grooving 6
- Shaper 7
- Endmill 8
- Drilling Tool 9
- Technical Reference 10

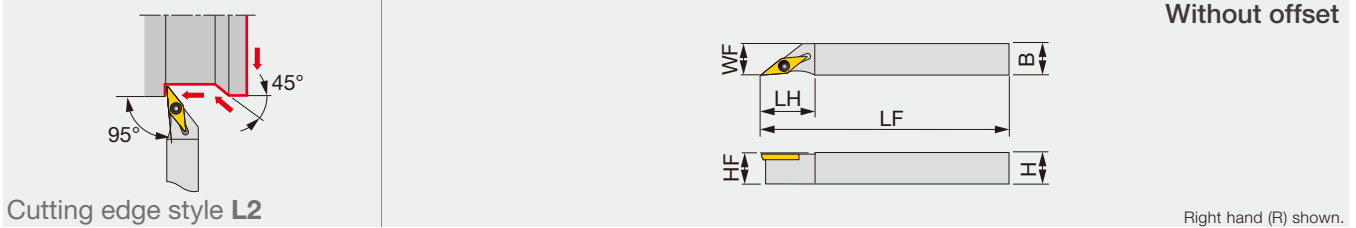
# VP

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

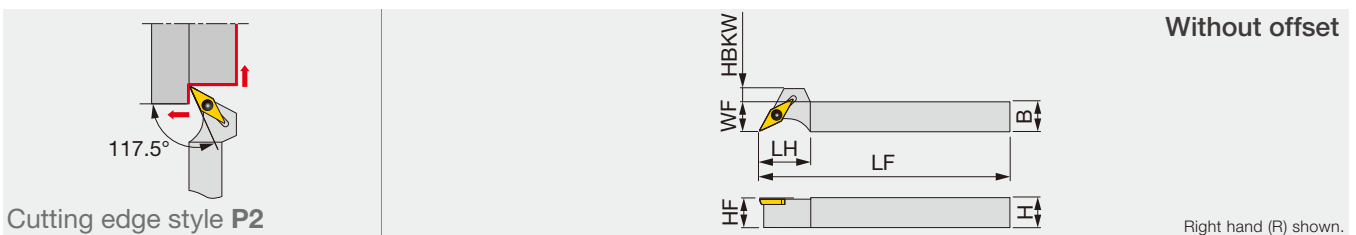
Right hand (R) shown.

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

## 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

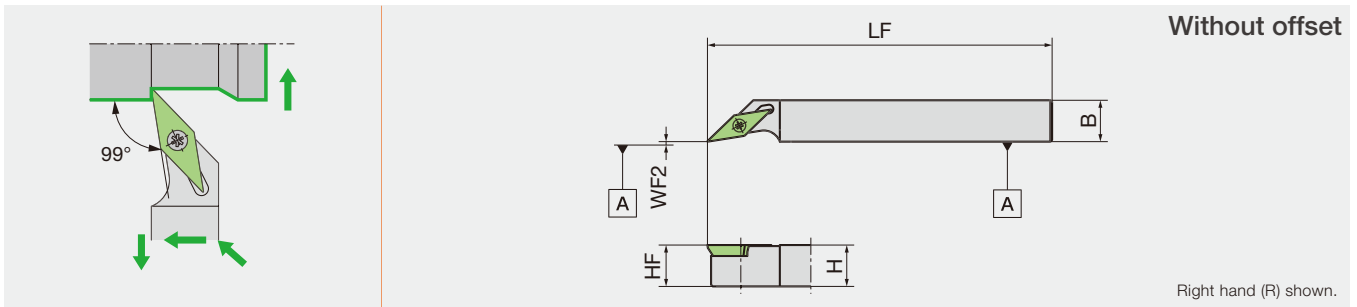
### SPARE PARTS

Designation	Clamping screw	Wrench 1	Wrench 2 (Optional)
JSVL2PR/L082/102	CSTB-2.5	T-8F	(T-8L)
JSVL2PR/L**08, JSVP2PR/L**08	CSTB-2L	T-6F	(T-6L)
JSVL2PR/L**11, JSVP2PR/L**11	CSTB-2.5	T-8F	(T-8L)

Reference pages : Inserts → 2-54 -

## SVXPR/L

Screw-on toolholder with 99° approach angle, for positive 35° rhombic inserts



Metric	H	B	LF	HF	WF2	Insert
SVXPR1012X11N	10	12	120	10	0	VP**1103...
SVXPR1212X11N	12	12	120	12	0	VP**1103...
SVXPL1012X11N	10	12	120	10	0	VP**1103...
SVXPL1212X11N	12	12	120	12	0	VP**1103...

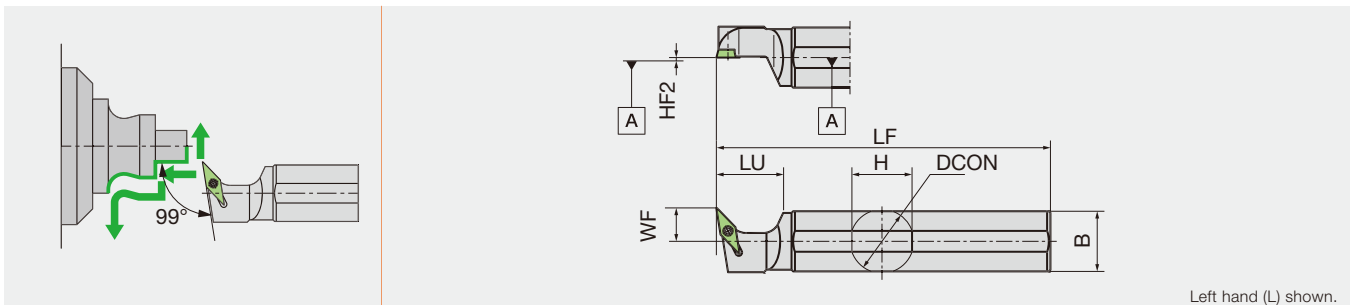
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
SVXPR**X11N	LRIS-2.5*7	CLR-15S

## DS-SVXP

Screw-on round-shank toolholder with 99° approach angle, for positive 35° rhombic inserts



Metric	H	B	LF	DCON	HF2	LU	WF	Insert
DS-SVXPL19-08	18	18	120	19.05	0	20	10	VP**0802...
DS-SVXPL20-08	19	19	120	20	0	20	10	VP**0802...
DS-SVXPL22-08	21	21	120	22	0	20	10	VP**0802...
DS-SVXPL25-08	24	24	150	25.4	0	20	10	VP**0802...

NOTE: Use a right-handed (R) or non-handed insert.

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
DS-SVXPL**-08	LRIS-2*6	CLR-13S

Reference pages : Inserts → 2-54 -

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

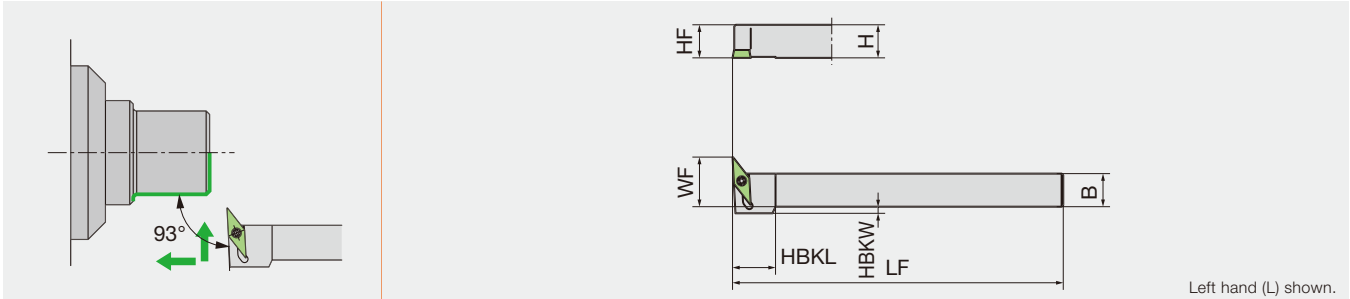
# VP

Rhombic, 35°  
with hole  
Positive 11°



## CH-SVUPL

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts, for horizontal gang style tool post



Left hand (L) shown.

Metric	H	B	LF	HBKL	HBKW	HF	WF	Insert
CH-SVUPL1010H08	10	10	100	13	2	10	15	VP**0802...
CH-SVUPL1212H08	12	12	100	-	-	12	17	VP**0802...

NOTE: Use a right-handed (R) or non-handed insert.

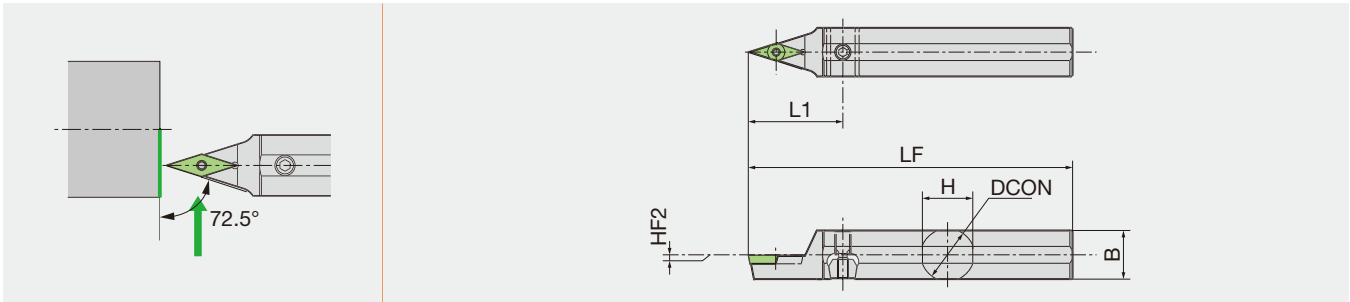
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CH-SVUPL**H08	LRIS-2*6	CLR-13S

## DS-SVVPN-ACH

Screw-on round-shank toolholder with 72.5° approach angle, for positive 35° rhombic inserts, with adjustable centerline height capability



Metric	H	B	LF	DCON	HF2	L1	Insert
DS-SVVPN16-11-ACH	15.5	15	120	16	Type B(0~+0.3)	31	VP**1103...
DS-SVVPN19-11-ACH	18	18	120	19.05	Type B(0~+0.3)	35	VP**1103...
DS-SVVPN20-11-ACH	19	19	120	20	Type B(0~+0.3)	35	VP**1103...
DS-SVVPN22-11-ACH	21	21	120	22	Type A(0~+0.2)	35	VP**1103...
DS-SVVPN25-11-ACH	24	24	150	25.4	Type A(0~+0.2)	35	VP**1103...

### SPARE PARTS



Designation	Clamp screw	Screw (for Wedge)	Wedge	Wrench (for Clamp screw)	Wrench (for Wedge)
DS-SVVPN16..., DS-SVVPN19...	LRIS-2.5*7	WS060415-003	ACH-W18	CLR-15S	LW-3
DS-SVVPN20..., DS-SVVPN22...	LRIS-2.5*7	WS060419-004	ACH-W18	CLR-15S	LW-3
DS-SVVPN25-11-ACH	LRIS-2.5*7	WS060419-004	ACH-W24	CLR-15S	LW-3

Reference pages : Inserts → 2-54 -



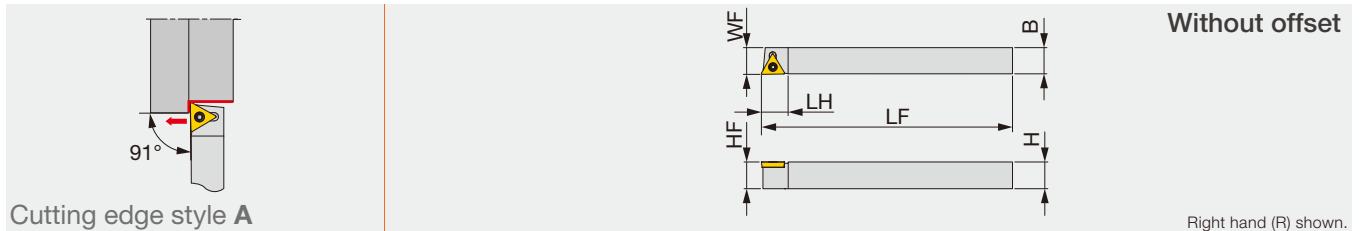
# TC



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

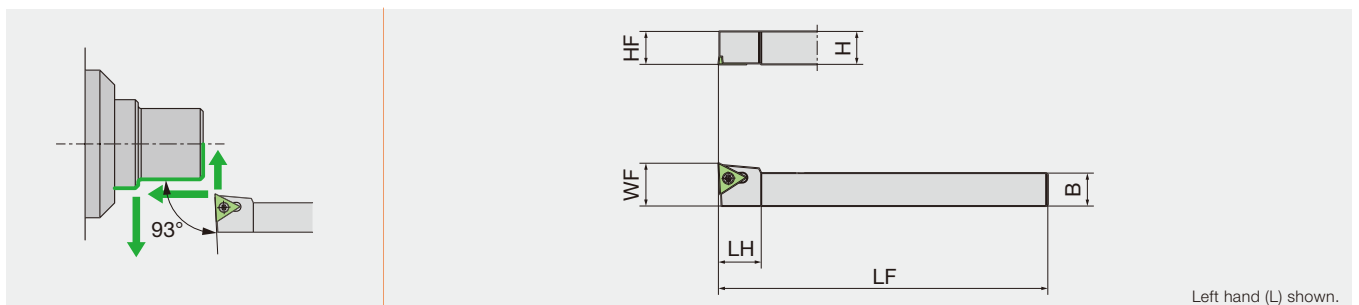
### SPARE PARTS



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)

## CH-STUCL

Screw-on toolholder with 93° approach angle, for positive 60° rhombic inserts, for horizontal gang style tool post



Left hand (L) shown.

Metric	H	B	LF	LH	HF	WF	Insert
CH-STUCL1010H09	10	10	100	13	10	13	TC**0902...
CH-STUCL1212H09	12	12	100	13	12	15	TC**0902...

NOTE: Use a right-handed (R) or non-handed insert.

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CH-STUCL**H09	LRIS-2.2*6	CLR-13S

Reference pages : Inserts → 2-36 -, CBN → 2-93 -, PCD → 2-122 -

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

# WX

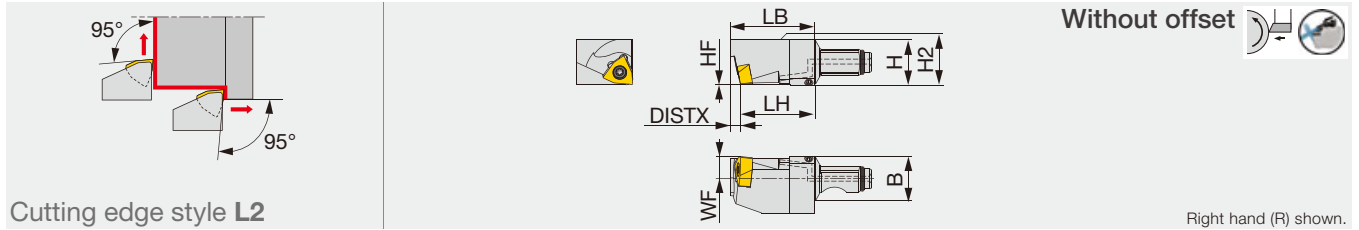


Trigon, 80°  
with hole

## MINIFORCE TURN

### QC12/16-JSWL2XR-Y-CHP

Screw-on Y-axis turning modular head with 95° approach angle, for WXGU inserts, with high pressure coolant capability

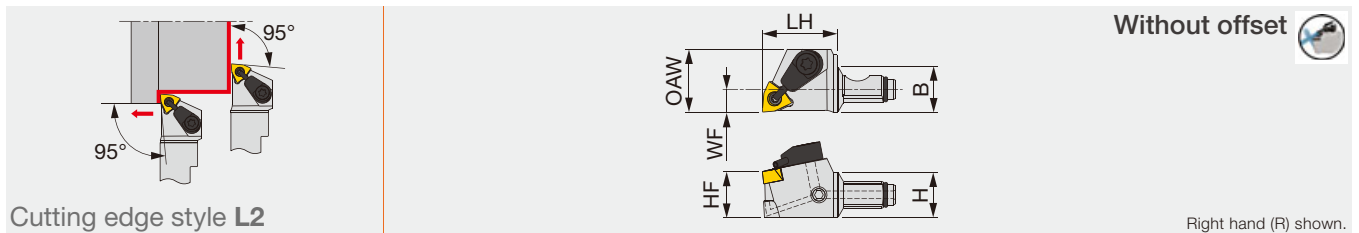


Metric	H	B	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque
QC12-JSWL2XR04-Y-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	0 (0")	6 (0.236")	22.3 (0.878")	12 (0.472")	2.8 (0.110")	0.2 (0.008")	WXGU0403**L... (WXGU22**L...)	0.9 (0.66)
QC16-JSWL2XR04-Y-CHP	16 (1.000")	16 (1.000")	21 (0.827")	0 (0")	8 (0.315")	23.8 (0.937")	16 (0.630")	2.8 (0.110")	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).

### QC10/12/16-JSWL2XR-CHP

Screw-on modular head with 95° approach angle, for WXGU inserts, with high pressure coolant capability



Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque
QC10-JSWL2XR04-CHP	10 (0.625")	10 (0.625")	17 (0.669")	10 (0.394")	5 (0.197")	13 (0.512")	0.2 (0.008")	WXGU0403**L... (WXGU22**L...)	0.9 (0.66)
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)
QC16-JSWL2XR04-CHP	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	8 (0.315")	20 (0.787")	0.2 (0.008")	WXGU0403**L... (WXGU22**L...)	0.9 (0.66)

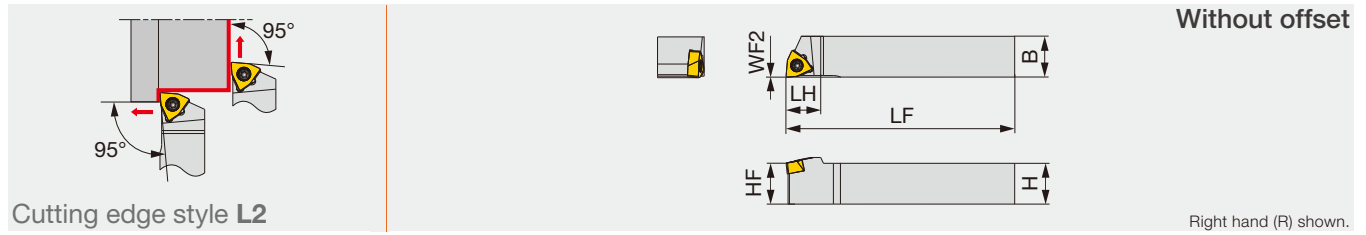
Torque: Recommended clamping torque: N-m (lbs-ft)  
RE\*\*: Standard corner radius  
Use right-hand toolholders (R) with left-hand inserts (L).

Designation	Clamping screw 1	Coolant unit	Wrench 1	O-ring
QC12-JSWL2XR04-Y-CHP	SR34-514	-	T-7F	ORSS-0454.5X1.0NBR70
QC16-JSWL2XR04-Y-CHP	SR34-514	-	T-7F	ORSS-0757.5X1.0NBR70
QC10-JSWL2XR04-CHP	SR34-514	-	T-7F	ORSS-0353.5X1.0NBR70
QC12-JSWL2XR04-CHP	SR34-514	S-CU-CHP	T-7F	ORSS-0454.5X1.0NBR70
QC16-JSWL2XR04-CHP	SR34-514	S-CU-CHP	T-7F	ORSS-0757.5X1.0NBR70

Reference pages : Inserts → 2-58, CBN → 2-102, Shank, Accessory → 3-130 -

## JSWL2XR/L

Screw-on toolholder with 95° approach angle, for WXGU inserts



Cutting edge style L2

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

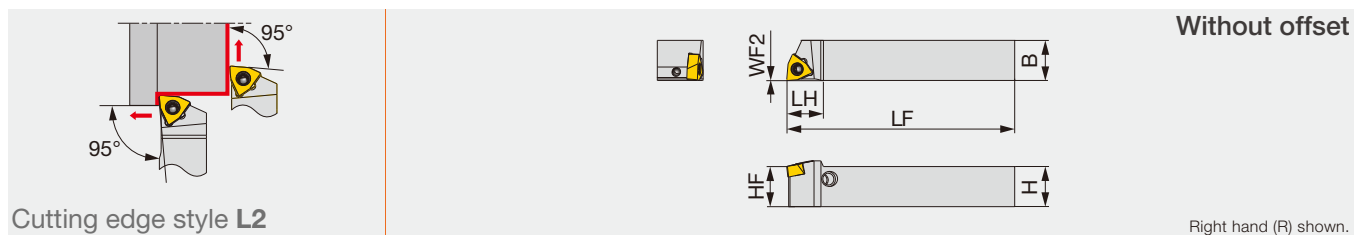
Torque: Recommended clamping torque: lbs-ft (\*N·m)

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

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

Reference pages : Inserts → 2-58, CBN → 2-102

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

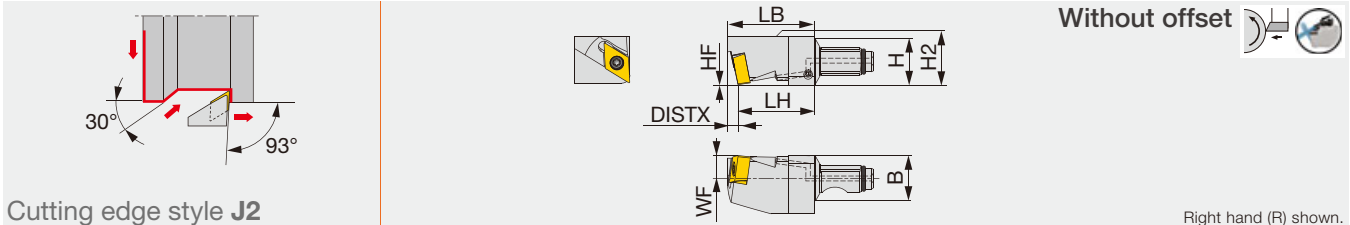
# DX

 **Rhombic, 55° with hole**

## MINIFORCE TURN

### QC12/16-JSDJ2XR-Y-CHP

Screw-on Y-axis turning modular head with 93° approach angle, for DX\*U inserts, with high pressure coolant capability



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)
QC16-JSDJ2XR07-Y-CHP	16 (1.000")	16 (1.000")	21 (0.827")	0 (0")	8 (0.315")	23.8 (0.937")	16 (0.630")	2.8 (0.110")	0.2 (0.008")	DX*U0703**L... (DX*U22**L...)	0.9 (0.66)

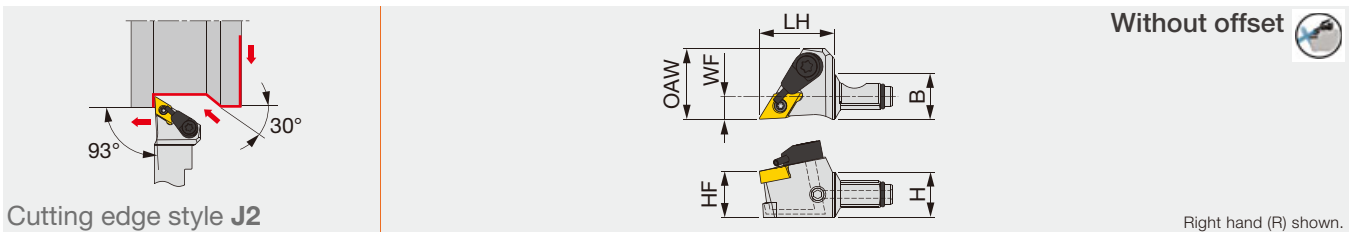
Torque: Recommended clamping torque: N·m (lbs·ft) RE\*\*: Standard corner radius  
Use right-hand toolholders (R) with left-hand inserts (L).

#### SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QC12-JSDJ2XR07-Y-CHP	SR34-514	T-7F	ORSS-0454.5X1.0NBR70
QC16-JSDJ2XR07-Y-CHP	SR34-514	T-7F	ORSS-0454.5X1.0NBR70

### QC10/12/16-JSDJ2XR-CHP

Screw-on modular head with 93° approach angle, for DX\*U inserts, with high pressure coolant capability



Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC10-JSDJ2XR07-CHP	10 (0.625")	10 (0.625")	17 (0.669")	10 (0.394")	5 (0.197")	13 (0.512")	0.2 (0.008")	DX*U0703**L... (DX*U22**L...)	0.9 (0.66)
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)
QC16-JSDJ2XR07-CHP	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	8 (0.315")	20 (0.787")	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).

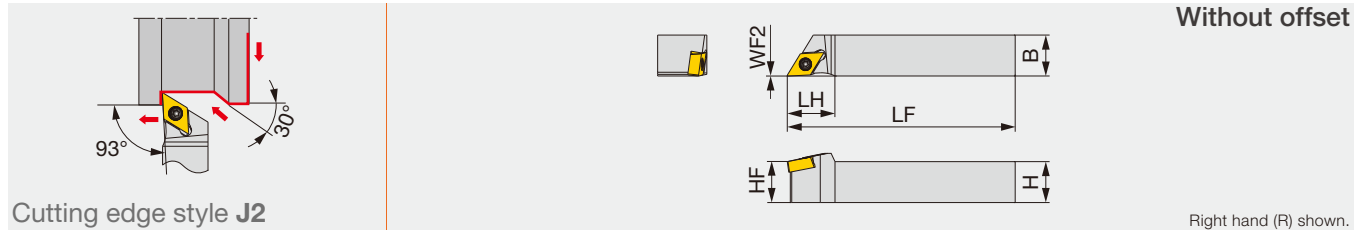
#### SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	O-ring
QC10-JSDJ2XR07-Y-CHP	SR34-514	-	T-7F	ORSS-0757.5X1.0NBR70
QC12-JSDJ2XR07-Y-CHP	SR34-514	S-CU-CHP	T-7F	ORSS-0454.5X1.0NBR70
QC16-JSDJ2XR07-Y-CHP	SR34-514	S-CU-CHP	T-7F	ORSS-0757.5X1.0NBR70

Reference pages : Inserts → **2-32 -**, Shank, Accessory → **3-130 -**

## JSDJ2XR/L

Screw-on toolholder with 93° approach angle, for DX\*U inserts



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

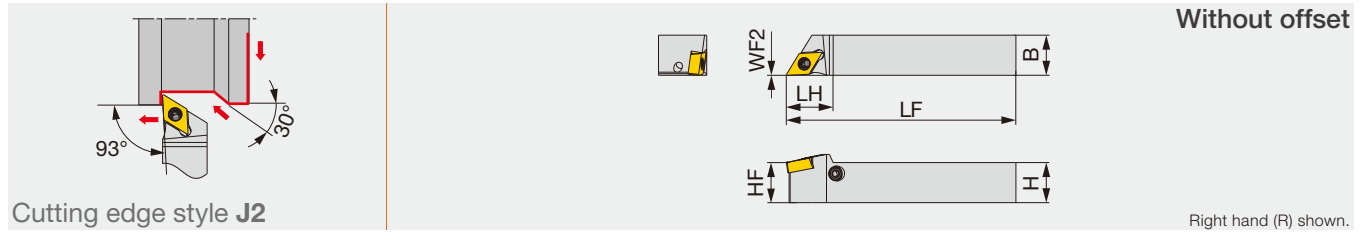
Torque: Recommended clamping torque: lbs-ft (\*N-m) RE\*\*: Standard corner radius  
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

### SPARE PARTS

Designation	Clamping screw	Wrench
JSDJ2XR/L...	SR34-514	T-7F

## JPDJ2XR/L

Lever-lock toolholder with 93° approach angle, for DX\*U inserts



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).

### SPARE PARTS

Designation	Lever	Pin	Clamping screw 1	Wrench 1
JPDJ2XR/L...	SLLV-2	SL-PI-2	SR10400611	HW2.0/5RED

Reference pages : Inserts → 2-32 -

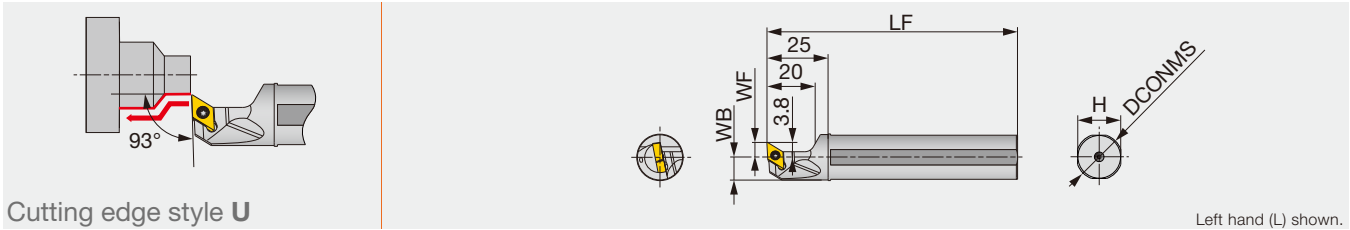
Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# DX

Rhombic, 55°  
with hole

## MINIFORCE 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

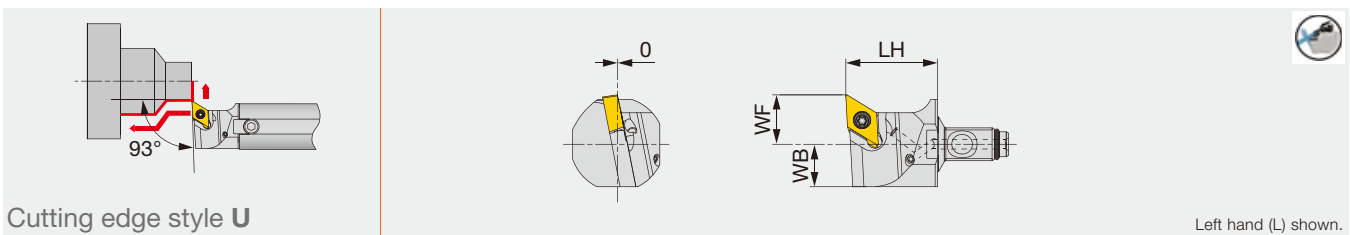
Torque\*: Recommended clamping torque (N-m) RE\*\*: Standard corner radius  
Use left-hand toolholders (L) with left-hand inserts (L).

### SPARE PARTS

Designation	Clamping screw	Wrench
JS**-SDUXL07	SR34-514	T-7F

## QR12-SDUXL-CHP

Screw-on modular head with 93° approach angle, for DX\*U inserts, with high pressure coolant capability



Cutting edge style U

Left hand (L) shown.

Metric	LH	WF	WB	RE**	Insert	Torque*	Shank
QR12C-SDUXL07-CHP	19.5 (0.768")	8.5 (0.335")	8 (0.315")	0.2 (0.008")	DX*U0703**L... (DX*U 22**L...)	0.9 (0.66")	A16*-QR12
QR12D-SDUXL07-CHP	19.5 (0.768")	10.5 (0.413")	9 (0.354")	0.2 (0.008")	DX*U0703**L... (DX*U 22**L...)	0.9 (0.66")	A19/20*-QR12

Use left-hand toolholders (L) with left-hand inserts (L).  
Torque\*: Recommended clamping torque: N-m (lbf-ft)  
RE\*\*: Standard corner radius

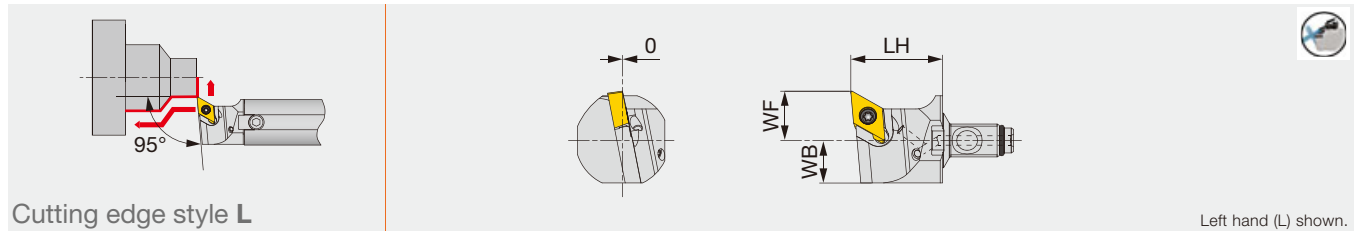
### SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QR12*-SDUXL07-CHP	SR 34-514	T-7F	ORSS-0454.5X1.0NBR70

Reference pages : Inserts → 2-32 -, Shank, Accessory → 3-130 -

## QR12-SDLXL-CHP

Screw-on modular head with 95° approach angle, for DX\*U inserts, with high pressure coolant capability



Metric	LH	WF	WB	RE**	Insert	Torque*	Shank
QR12C-SDLXL07-CHP	19.5 (0.768")	8.5 (0.335")	8 (0.315")	0.2 (0.008")	DX*U0703**L... (DX*U 22**L...)	0.9 (0.66")	A16*-QR12
QR12D-SDLXL07-CHP	19.5 (0.768")	10.5 (0.413")	9 (0.354")	0.2 (0.008")	DX*U0703**L... (DX*U 22**L...)	0.9 (0.66")	A19/20*-QR12

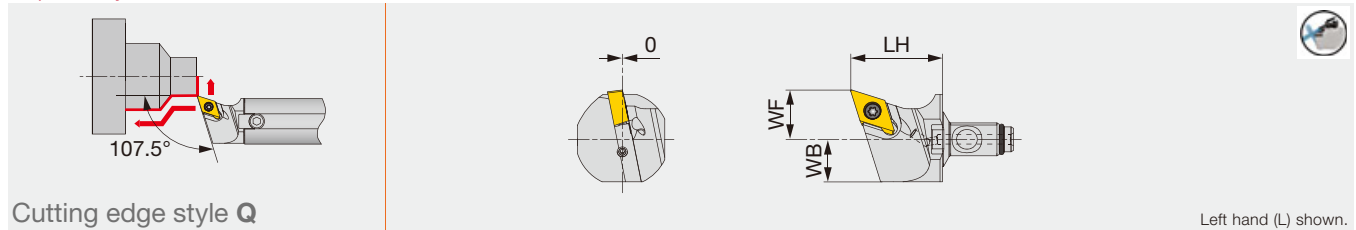
Use left-hand toolholders (L) with left-hand inserts (L).  
Torque\*: Recommended clamping torque: N-m (lbf-ft)  
RE\*\*: Standard corner radius

### SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QR12*-SDLXL07-CHP	SR 34-514	T-7F	ORSS-0454.5X1.0NBR70

## QR12-SDQXL-CHP

Screw-on modular head with 107.5° approach angle, for DX\*U inserts, with high pressure coolant capability



Metric	LH	WF	WB	RE**	Insert	Torque*	Shank
QR12C-SDQXL07-CHP	19.5 (0.768")	8.5 (0.335")	8 (0.315")	0.2 (0.008")	DX*U0703**L... (DX*U 22**L...)	0.9 (0.66")	A16*-QR12
QR12D-SDQXL07-CHP	19.5 (0.768")	10.5 (0.413")	9 (0.354")	0.2 (0.008")	DX*U0703**L... (DX*U 22**L...)	0.9 (0.66")	A19/20*-QR12

Use left-hand toolholders (L) with left-hand inserts (L).  
Torque\*: Recommended clamping torque: N-m (lbf-ft)  
RE\*\*: Standard corner radius

### SPARE PARTS

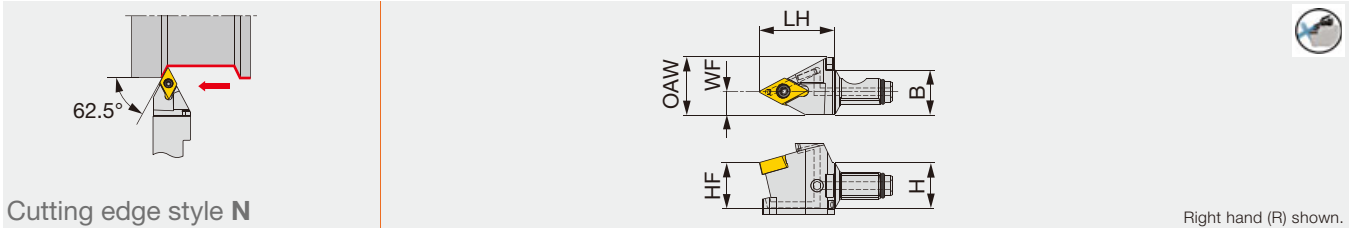
Designation	Clamping screw	Wrench	O-ring
QR12*-SDQXL07-CHP	SR 34-514	T-7F	ORSS-0454.5X1.0NBR70

# VX

 **Rhombic, 35° with hole**

## MINIFURN QC10/12/16-JSDNXR-CHP

Screw-on modular head with 62.5° approach angle, for DX\*U inserts, with high pressure coolant capability

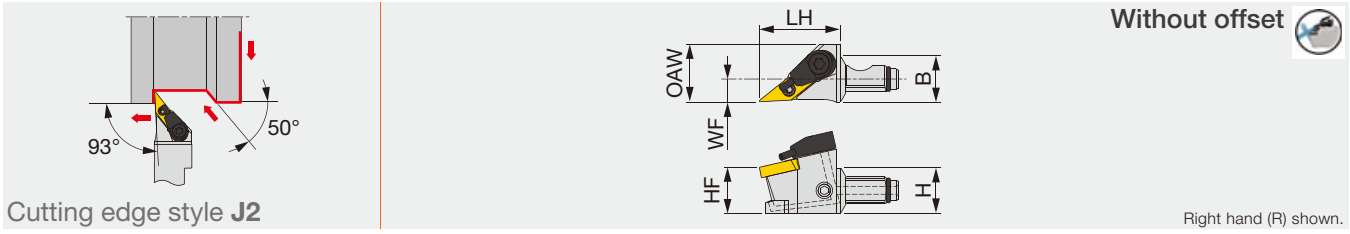


Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC10-JSDNXR07-CHP	10 (0.625")	10 (0.625")	17 (0.669")	10 (0.394")	6 (0.236")	13 (0.512")	0.2 (0.008")	DX*U0703**L... (DX*U22**L...)	0.9 (0.66)
QC12-JSDNXR07-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	6 (0.236")	15 (0.591")	0.2 (0.008")	DX*U0703**L... (DX*U22**L...)	0.9 (0.66)
QC16-JSDNXR07-CHP	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	6 (0.236")	20 (0.787")	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).

## QC10/12/16-JSVJ2XR-CHP

Screw-on modular head with 93° approach angle, for VXGU inserts, with high pressure coolant capability



Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC10-JSVJ2XR09-CHP	10 (0.625")	10 (0.625")	17 (0.669")	10 (0.394")	5 (0.197")	13 (0.512")	0.2 (0.008")	VXGU09T2**L... (VXGU73.5**L...)	0.9 (0.66)
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)
QC16-JSVJ2XR09-CHP	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	8 (0.315")	20 (0.787")	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).

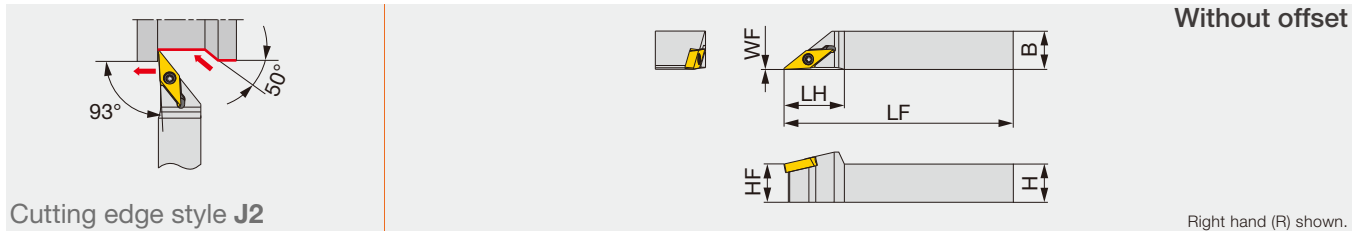
### SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	O-ring
QC10-JSDNXR07-CHP	SR 34-514	-	T-7F	ORSS-0353.5X1.0NBR70
QC12-JSDNXR07-CHP	SR34-508	-	T-7F	ORSS-0454.5X1.0NBR70
QC16-JSDNXR07-CHP	SR 34-514	-	T-7F	ORSS-0757.5X1.0NBR70
QC10-JSVJ2XR09-CHP	SR 34-508	-	T-7F	ORSS-0353.5X1.0NBR70
QC12-JSVJ2XR09-CHP	SR34-508	S-CU-CHP	T-7F	ORSS-0454.5X1.0NBR70
QC16-JSVJ2XR09-CHP	SR 34-508	S-CU-CHP	T-7F	ORSS-0757.5X1.0NBR70

Reference pages : QC\*\*-JSDNXR-CHP : Inserts → 2-32 -  
QC\*\*-JSVJ2XR-CHP : Inserts → 2-53  
Shank, Accessory → 3-130 -



Screw-on toolholder with 93° approach angle, for VXGU inserts



Cutting edge style J2

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

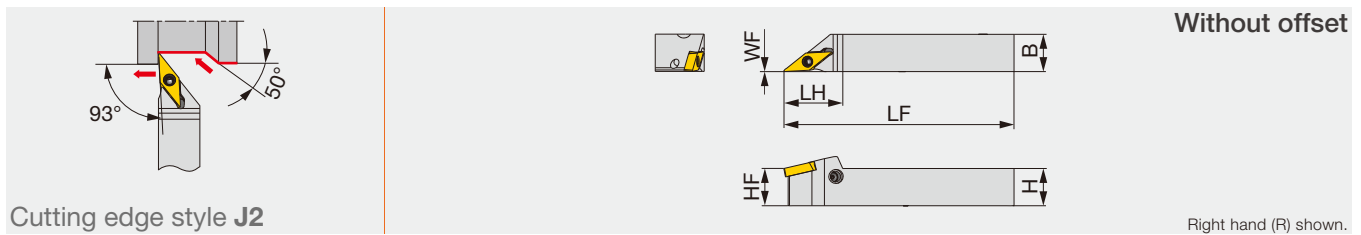
Torque: Recommended clamping torque: lbs-ft (\*N-m) RE\*\*: Standard corner radius

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

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



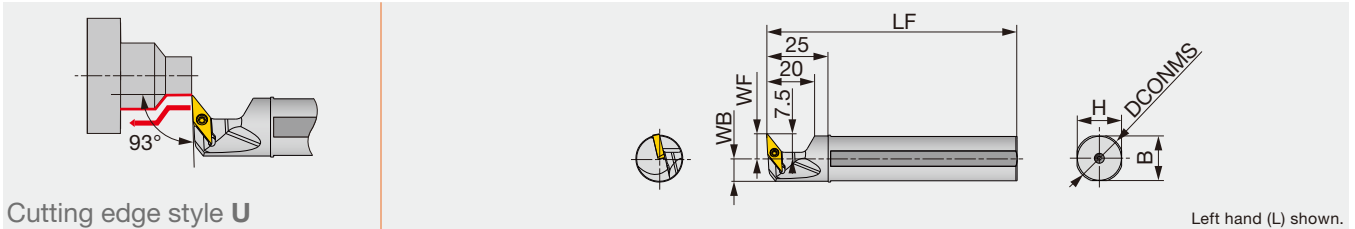
Designation	Clamping screw	Wrench	Lever	Pin	Clamping screw	Wrench
JSVJ2XR/L...	SR34-508	T-7F	-	-	-	-
JPVJ2XR/L...	-	-	SLLV-1	SL-PI-2	SR10400611	HW2.0/5RED

# VX

 **Rhombic, 35° with hole**

## MINIFORCE TURN JS-SVUXL

Screw-on round-shank toolholder with 93° approach angle, for VXGU inserts



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

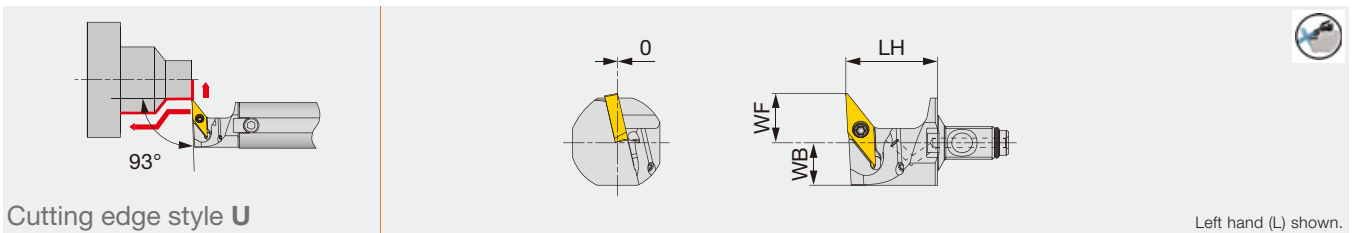
Torque: Recommended clamping torque: N·m  
 \*\*RE: Standard corner radius  
 Note: Use left-hand toolholders (L) with left-hand inserts (L).

### SPARE PARTS

Designation	Clamping screw	Wrench
JS**-SVUXL09	SR34-508	T-7F

## MODUM<sup>INI</sup>TURN QR12-SVUXL-CHP

Screw-on modular head with 93° approach angle, for VXGU inserts, with high pressure coolant capability



Metric	LH	WF	WB	RE**	Insert	Torque*	Shank
QR12C-SVUXL09-CHP	19.5 (0.768")	8.5 (0.335")	9.5 (0.374")	0.2 (0.008")	VXGU09T2**L... (VXGU 73.5**L...)	0.9 (0.66")	A16*-QR12
QR12D-SVUXL09-CHP	19.5 (0.768")	10.5 (0.413")	9 (0.354")	0.2 (0.008")	VXGU09T2**L... (VXGU 73.5**L...)	0.9 (0.66")	A19/20*-QR12

Use left-hand toolholders (L) with left-hand inserts (L).  
 Torque\*: Recommended clamping torque: N·m (lbf·ft)  
 RE\*\*: Standard corner radius

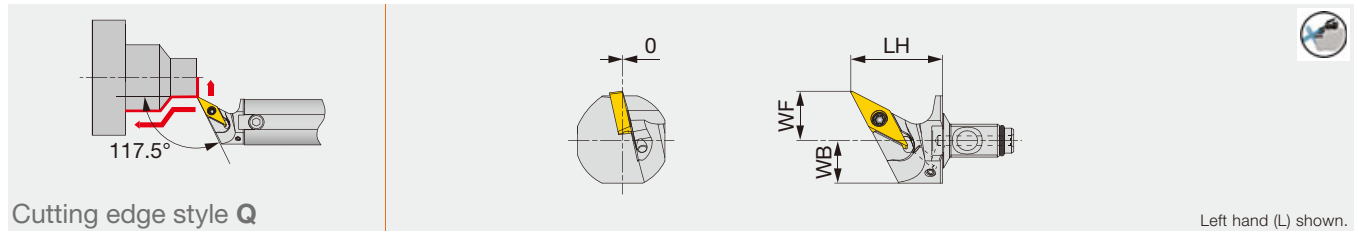
### SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QR12*-SVUXL09-CHP	SR 34-508	T-7F	ORSS-0454.5X1.0NBR70

Reference pages : Inserts → 2-53, Shank, Accessory → 3-130 -

## QR12-SVQXL-CHP

Screw-on modular head with 117.5° approach angle, for VXGU inserts, with high pressure coolant capability



Metric	LH	WF	WB	RE**	Insert	Torque*	Shank
QR12C-SVQXL09-CHP	19.5 (0.768")	8.5 (0.335")	8 (0.315")	0.2 (0.008")	VXGU09T2**L... (VXGU 73.5**L...)	0.9 (0.66")	A16*-QR12
QR12D-SVQXL09-CHP	19.5 (0.768")	10.5 (0.413")	9 (0.354")	0.2 (0.008")	VXGU09T2**L... (VXGU 73.5**L...)	0.9 (0.66")	A19/20*-QR12

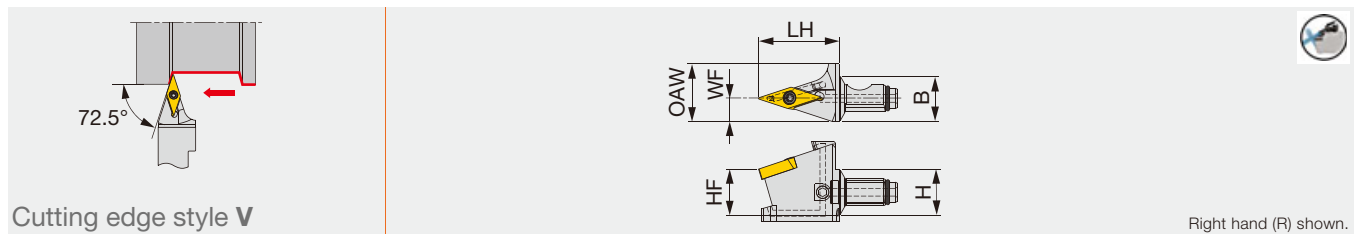
Use left-hand toolholders (L) with left-hand inserts (L).  
Torque\*: Recommended clamping torque: N-m (lbf-ft)  
RE\*\*: Standard corner radius

### SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QR12*-SVQXL09-CHP	SR 34-508	T-7F	ORSS-0454.5X1.0NBR70

## MINIFORCE QC10/12/16-JSVVXR-CHP

Screw-on modular head with 72.5° approach angle, for VXGU inserts, with high pressure coolant capability



Metric	H	B	LH	HF	WF	OAW	RE**	Insert	Torque*
QC10-JSVVXR09-CHP	10 (0.625")	10 (0.625")	17.5 (0.689")	10 (0.394")	5 (0.197")	13 (0.512")	0.2 (0.008")	VXGU09T2**L... (VXGU73**L...)	0.9 (0.66)
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)
QC16-JSVVXR09-CHP	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	6 (0.236")	20 (0.787")	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
QC10-JSVVXR09-CHP	SR34-508	T-7F	ORSS-0353.5X1.0NBR70
QC12-JSVVXR09-CHP	SR34-508	T-7F	ORSS-0454.5X1.0NBR70
QC16-JSVVXR09-CHP	SR34-508	T-7F	ORSS-0757.5X1.0NBR70

# TN



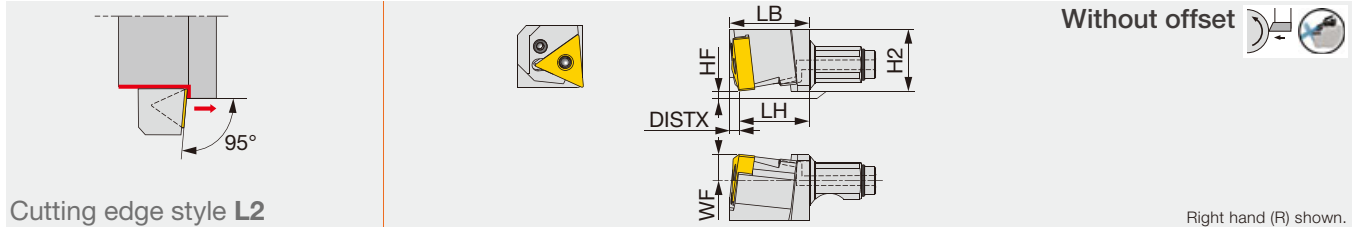
Triangular with hole

## MODUMTURN<sup>INI</sup>

QC16-PTL2NR-Y-CHP

J-SERIES

Lever-lock Y-axis turning modular head with 95° approach angle, for negative 60° triangular inserts, with high pressure coolant capability



Metric	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*	Shank
QC16-PTL2NR16-Y-CHP	21 (0.827")	0 (0")	8 (0.315")	23.8 (0.937")	18.7 (0.736")	2.8 (0.110")	0.4 (0.016")	TN**1604... (TN** 33...)	1.5 (1.11)	QC-16... (16 mm) QC-10X... (0.625")

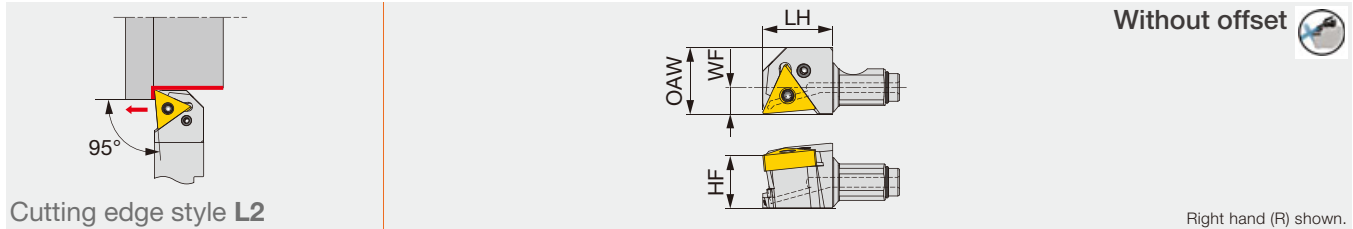
Torque\*: Recommended clamping torque: N-m (lbs-ft)  
RE\*\*: Standard corner radius

### SPARE PARTS

Designation	Clamping screw	Wrench	Lever	O-ring
QC16-PTL2NR16-Y-CHP	LCS33	P-2	LCL33N	ORSS-0757.5X1.0NBR70

### QC16-PTL2NR-CHP

Lever-lock modular head with 95° approach angle, for negative 60° triangular inserts, with high pressure coolant capability



Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC16-PTL2NR16-CHP	21 (0.827")	16 (0.630")	8 (0.315")	20 (0.787")	0.4 (0.016")	TN**1604... (TN** 33...)	1.5 (1.11)	QC-16... (16 mm) QC-10X... (0.625")

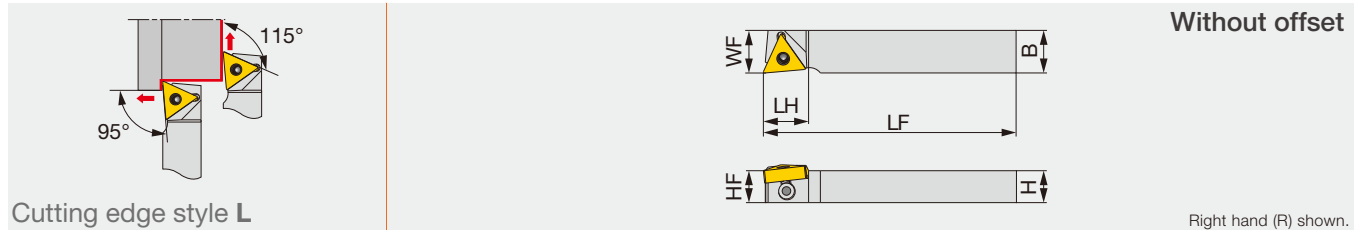
Torque\*: Recommended clamping torque: N-m (lbs-ft)  
RE\*\*: Standard corner radius

### SPARE PARTS

Designation	Clamping screw	Wrench	Lever	O-ring
QC16-PTL2NR16-CHP	LCS33	P-2	LCL33N	ORSS-0757.5X1.0NBR70

## JTTLNR/L

Back-clamp toolholder with 95° approach angle, for negative 60° triangular inserts



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

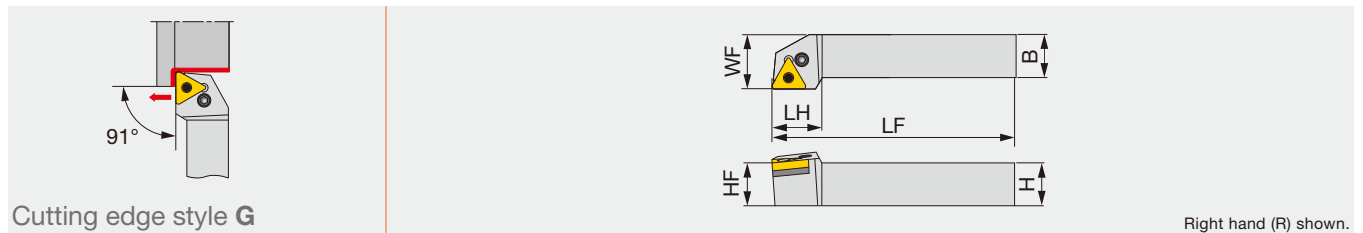
### SPARE PARTS



Designation	Clamp	Clamping screw	Clamping screw 1	Wrench
JTTLNR/L...	JCP-3N	JDS-5040	-	P-2.5F

## ISO ETURN PTG NR/L

Lever-lock toolholder with 91° approach angle, for negative triangular inserts



Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PTG NR/L1223	0.750	0.750	4.500	0.750	0.750	1.000	0.031	TN** 23...	1.5
PTG NR/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*
PTG NR/L1616	16	16	100	22	16	20	0.8	TN**1604...	2
PTG NR/L2020K1104	20	20	125	20	20	25	0.8	TN**1104...	2
PTG NR/L2020	20	20	125	22	20	25	0.8	TN**1604...	2

Torque: Recommended clamping torque: lbs-ft (\*N-m) \*\*RE: Standard corner radius

### SPARE PARTS



Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTG NR/L**23, PTG NR/L**1104	-	LCS23A	P-2.5	-	LCL23
PTG NR/L1616, 2020	LST317	LCS3	P-2.5	LSP3	LCL3

Reference pages : Inserts → 2-75 -, CBN → 2-113 -, PCD → 2-129

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# TN

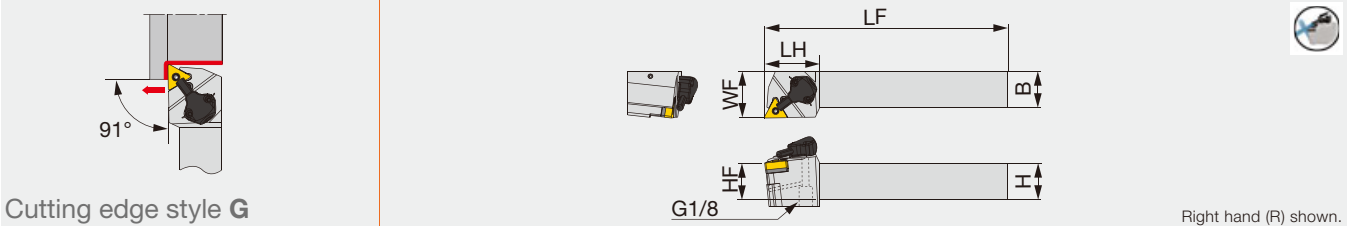


Triangular with hole

## TUNG T<sup>URN</sup> T<sup>JET</sup> PTGNR/L-CHP

Tube connection

Lever lock toolholders – 91° approach angle.  
For negative triangle insert. High-pressure coolant capability.



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

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

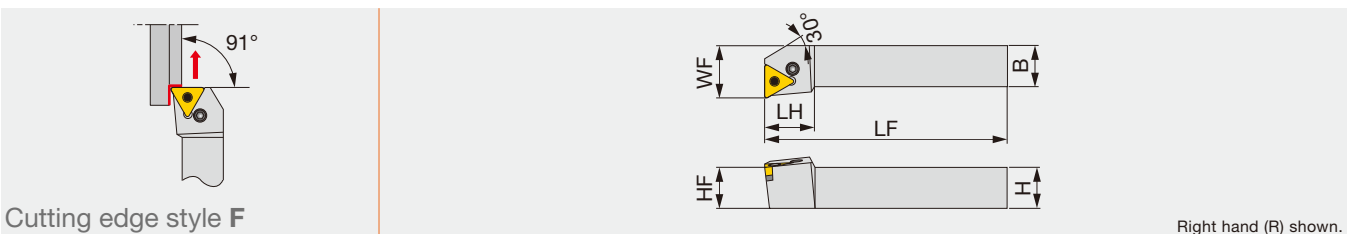
### SPARE PARTS

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

## TURNING A

### PTFNR/L

Lever-lock toolholder with 91° approach angle, for negative triangular inserts



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

\*Torque: Recommended clamping torque (N·m)

\*\*RE : Standard corner radius

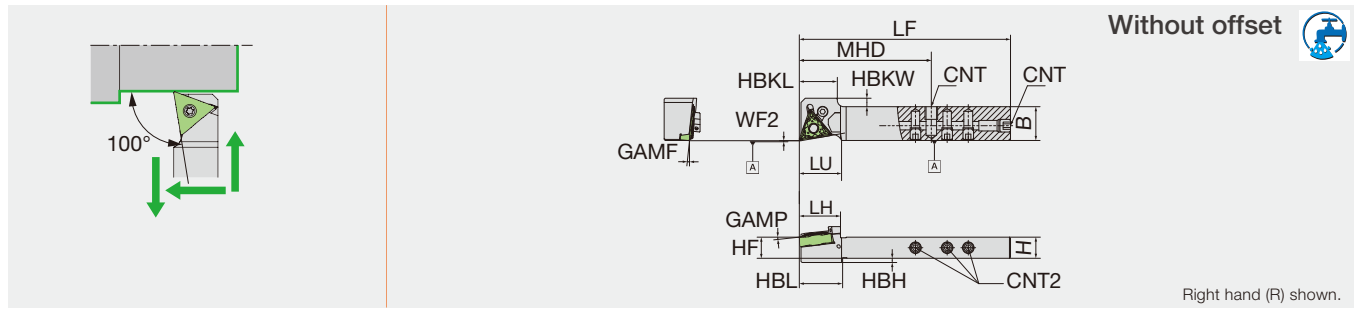
### SPARE PARTS

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

Reference pages : Inserts → 2-75 -, CBN → 2-113 -, PCD → 2-129

## PTXN-OH3

Lever-lock toolholder with 100° approach angle, for negative 60° rhombic inserts, with high pressure coolant capability



Metric	H	B	LF	LH	GAMF	GAMP	GAMP	HBKL	HBKW	HBL	HF	LU	MHD	WF2	CNT	CNT2	Insert
PTXNR1016X33N-OH3	10	16	100	19.5	6°	6°	2	18	4	20.5	10	20	62.5	0	M6*1	M5	TN**1604...
PTXNR1616X33N-OH3	16	16	120	19.5	6°	6°	-	18	4	-	16	20	78.75	0	Rc1/8	M5	TN**1604...

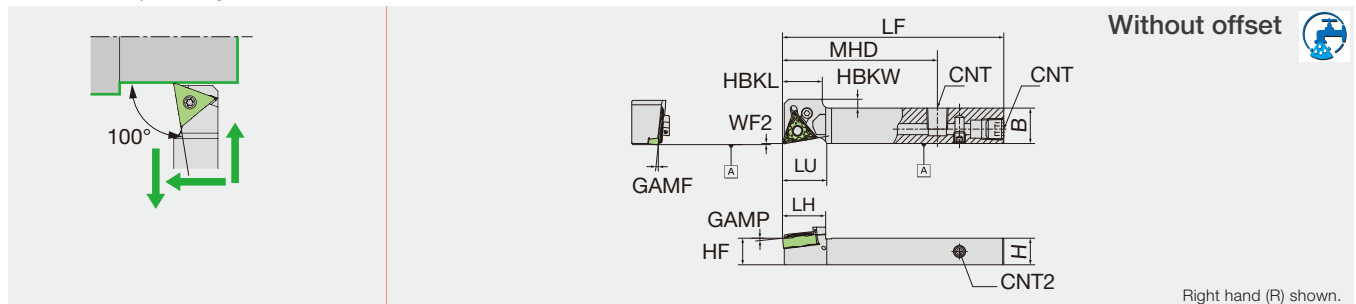
NOTE: Reference Chart of OH3 Hole Position → 10-1

### SPARE PARTS

Designation	Clamp screw	Lever	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)
PTXNR**X33N-OH3	LCS33	LCL33N	SS0605SC	SS0505SC	LW-2.5

## PTXN-OH2

Lever-lock toolholder with 100° approach angle, for negative 60° rhombic inserts, with high pressure coolant capability



Metric	H	B	LF	LH	GAMF	GAMP	HBKL	HBKW	HF	LU	MHD	WF2	CNT	CNT2	Insert
PTXNR1216X33N-OH2	12	16	100	19.5	6°	6°	18	4	12	20	70	0	Rc1/8	M5	TN**1604...

### SPARE PARTS

Designation	Clamp screw	Lever	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)
PTXNR1216X33N-OH2	LCS33	LCL33N	SPR1/8	SS0505SC	LW-2.5

Reference pages : Inserts → 2-75 -, CBN → 2-113 -, PCD → 2-129

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

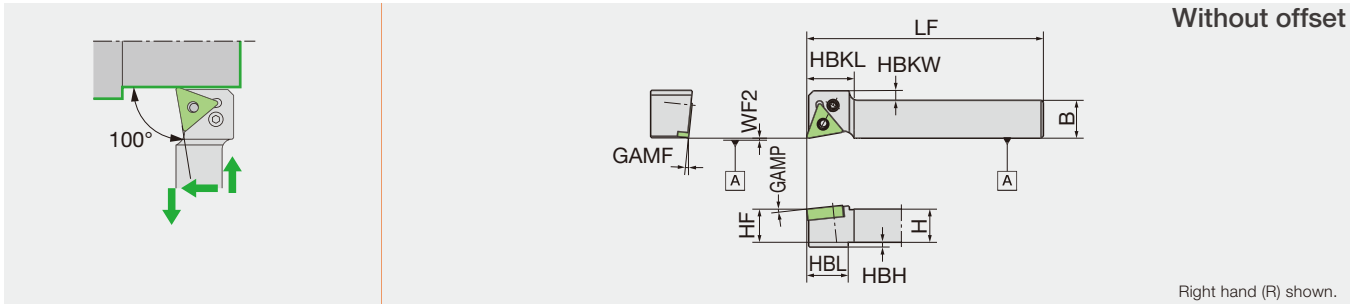
# TN



Triangular with hole

## PTXNR-N

Lever-lock toolholder with 100° approach angle, for negative 60° rhombic inserts



Inch	H	B	LF	GAMF	GAMP	HBH	HBKL	HBKW	HBL	HF	WF2	Insert
PTXNR063C	0.375	0.375	4.724	6°	6°	0.097	0.709	0.162	0.689	0.375	0	TN**33...
PTXNR083C	0.500	0.500	4.724	6°	6°	-	0.709	0.162	-	0.500	0	TN**33...
PTXNR103C	0.625	0.625	4.724	6°	6°	-	0.709	0.162	-	0.625	0	TN**33...
Metric	H	B	LF	GAMF	GAMP	HBH	HBKL	HBKW	HBL	HF	WF2	Insert
PTXNR1016X33N	10	16	120	6°	6°	2	18	4	17.5	10	0	TN**1604...
PTXNR1216X33N	12	16	120	6°	6°	-	18	4	-	12	0	TN**1604...
PTXNR1216X33NGX	12	16	85	6°	6°	-	18	4	-	12	0	TN**1604...
PTXNR1616X33N	16	16	120	6°	6°	-	18	4	-	16	0	TN**1604...
PTXNR2020X33N	20	20	120	6°	6°	-	18	-	-	20	0	TN**1604...

### SPARE PARTS

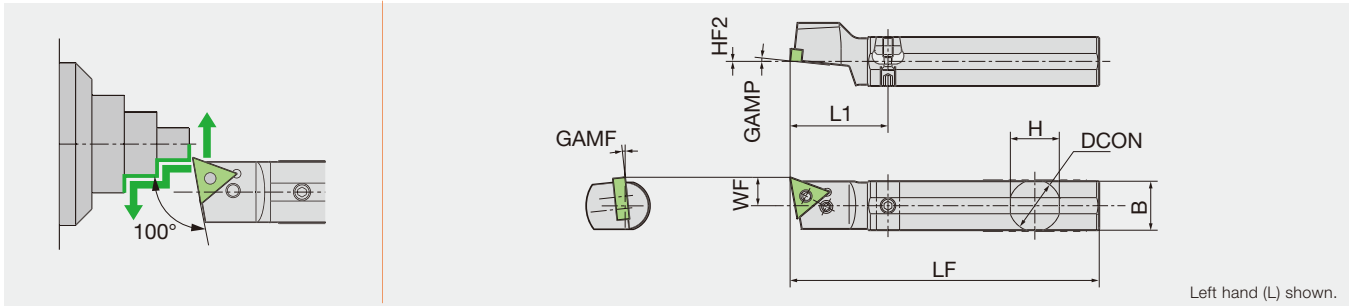


Designation	Clamp screw	Lever	Wrench (for Wedge)
PTXNR**	LCS33	LCL33N	LW-2



## DS-PTXL-ACH

Lever-lock round-shank toolholder with 100° approach angle, for negative 60° rhombic inserts, with adjustable centerline height capability



Metric	H	B	LF	DCON	GAMF	GAMP	HF2	L1	WF	Insert
DS-PTXL16-33-ACH	15.5	15	120	16	6°	6°	Type B(0~+0.3)	38	11	TN**1604...
DS-PTXL19-33-ACH	18	18	120	19.05	6°	6°	Type B(0~+0.3)	38	11	TN**1604...
DS-PTXL20-33-ACH	19	19	120	20	6°	6°	Type B(0~+0.3)	38	11	TN**1604...
DS-PTXL22-33-ACH	21	21	120	22	6°	6°	Type B(0~+0.3)	38	12	TN**1604...
DS-PTXL25-33-ACH	24	24	150	25.4	6°	6°	Type A(0~+0.2)	38	13	TN**1604...
DS-PTXL25-33MET-ACH	24	24	150	25	6°	6°	Type A(0~+0.2)	38	13	TN**1604...

NOTE: Use a right-handed (R) or non-handed insert.

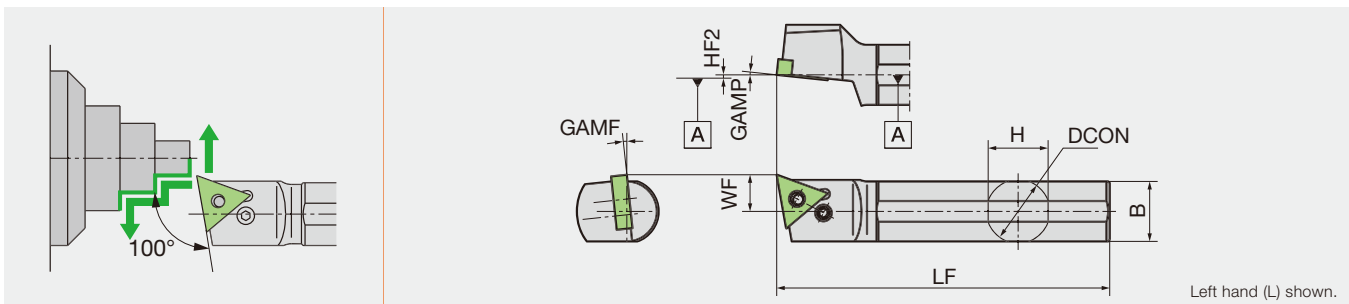
### SPARE PARTS



Designation	Clamp screw	Screw (for Wedge)	Lever	Wedge	Wrench (for Wedge)
DS-PTXL16-33-ACH	LCS33	WS060415-003	LCL33N	ACH-W18	LW-2
DS-PTXL19-33-ACH	LCS33	WS060415-003	LCL33N	ACH-W18	LW-2
DS-PTXL20-33-ACH	LCS33	WS060419-004	LCL33N	ACH-W18	LW-2
DS-PTXL22-33-ACH	LCS33	WS060419-004	LCL33N	ACH-W18	LW-2
DS-PTXL25-33**	LCS33	WS060419-004	LCL33N	ACH-W24	LW-2

## DS-PTXL

Lever-lock round-shank toolholder with 100° approach angle, for negative 60° rhombic inserts



Metric	H	B	LF	DCON	GAMF	GAMP	HF2	L1	WF	Insert
DS-PTXL16-33	15	15	120	16	6°	6°	0	-	11	TN**1604...
DS-PTXL19-33	18	18	120	19.05	6°	6°	0	-	11	TN**1604...
DS-PTXL20-33	19	19	120	20	6°	6°	0	-	11	TN**1604...
DS-PTXL22-33	21	21	120	22	6°	6°	0	-	12	TN**1604...
DS-PTXL25M-33	24	24	150	25.4	6°	6°	0	-	13	TN**1604...

NOTE: Use a right-handed (R) or non-handed insert.

### SPARE PARTS



Designation	Clamp screw	Lever	Wrench (for Clamp screw)
DS-PTXL**	LCS33	LCL33N	LW-2

Reference pages : Inserts → 2-75 -, CBN → 2-113 -, PCD → 2-129

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

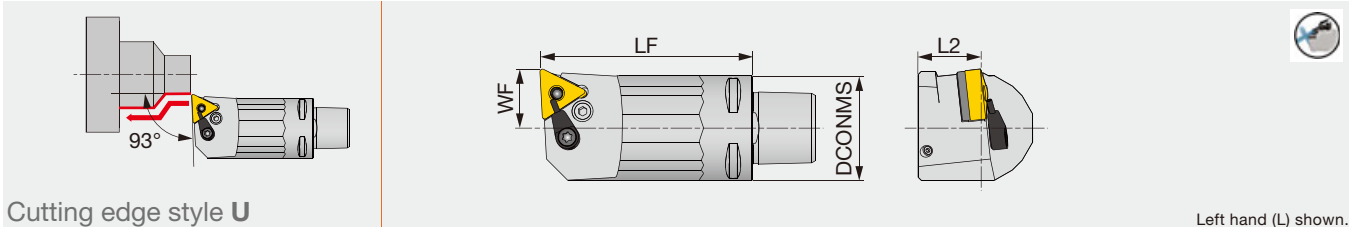
# TN



Triangular with hole

## TUNGCAP C-PTUNL-CHP

Lever-lock toolholder, with 93° approach angle, for negative 60° triangular inserts, with high pressure coolant capability



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...

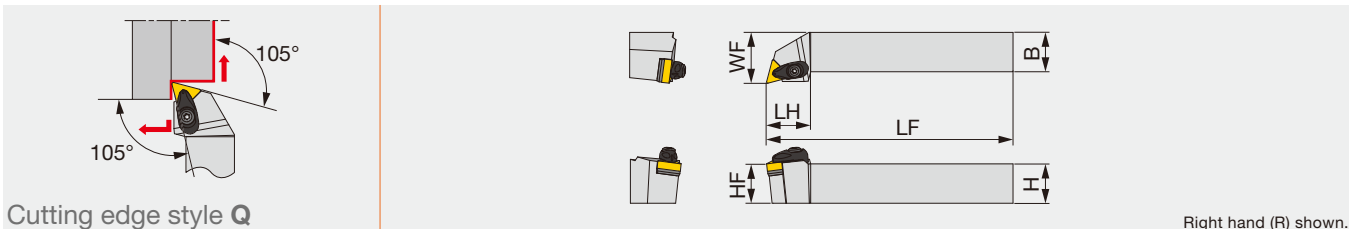
Applicable for 14 MPa (2031 PSI) coolant  
Cannot be used for boring

### SPARE PARTS

Designation	Coolant unit	Shim	Lever	Clamping screw	Spring pin	Wrench
C3PTUNL...	S-CU-CHP	LST317	LCL3	LCS3	LSP3	P-2.5

## TURNINGA ATQNR/L

Double-clamp toolholder with 105° approach angle, for negative 60° triangular inserts



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

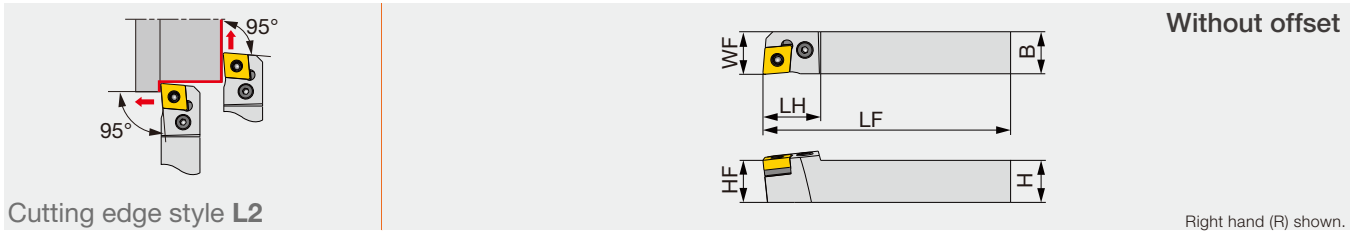
Reference pages : Inserts → 2-75 -, CBN → 2-113 -, PCD → 2-129



**Rhombic, 80° with hole**

## PCL2NR

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style L2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCL2NR2020H12	20	20	100	26	20	20	0.8	CN/GN**1204...	3

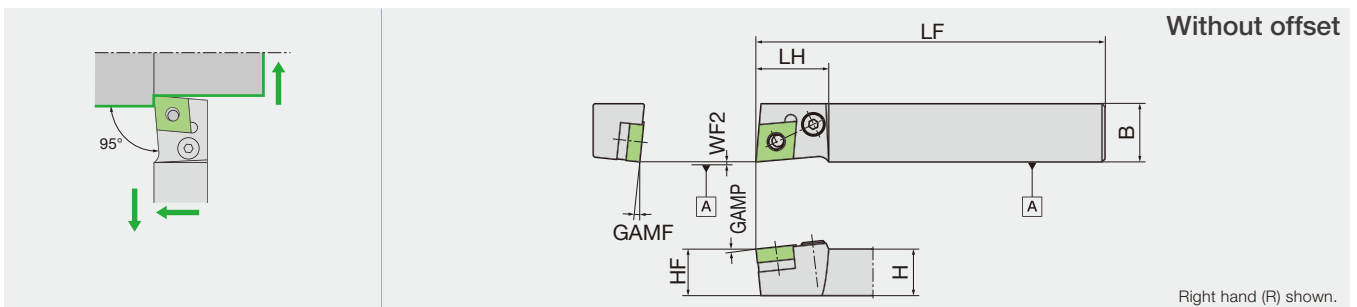
Torque\*: Recommended clamping torque (N-m)  
RE\*\*: Standard corner radius

### SPARE PARTS

Designation	Shim	Clamping screw	Lever	Spring pin	Wrench
PCL2NR2020H12	LSC42	LCS4	LCL4	LSP4	P-3

## PCLNR-N

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts



Metric	H	B	LF	LH	GAMF	GAMP	HF	WF2	Insert
PCLNR1620X43N	16	20	120	25	6°	6°	16	0	CN**1204...

### SPARE PARTS

Designation	Shim seat	Clamp screw	Lever	Spring	Wrench (for Clamp screw)
PCLNR1620X43N	LSC42	LCS4CA	LCL4	LSP4	LW-3

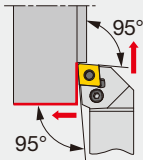
# CN



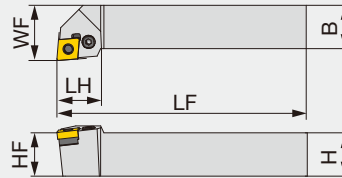
Rhombic, 80° with hole

## J-SERIES 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
PCLNR/L1633	1.000	1.000	6.000	0.813	1.000	1.250	0.031	CNMG332E	1.48
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

Torque: Recommended clamping torque: lbs-ft (\*N·m) RE\*\*: Standard corner radius

### SPARE PARTS

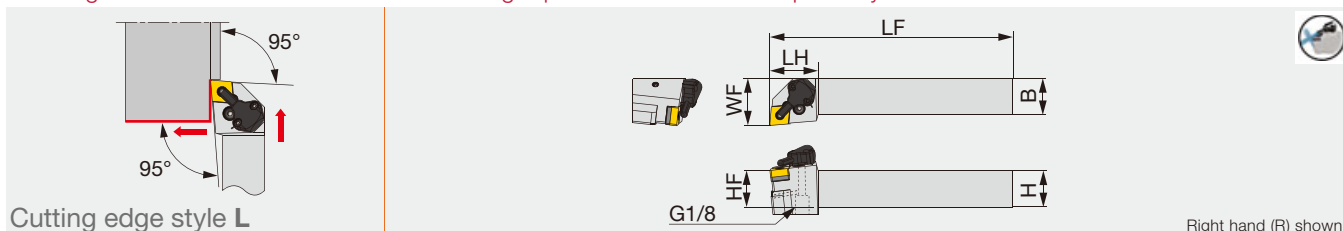


Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCLNR/L**09	ELSC32	LCS3	P-2.5	LSP3L	LCL33
PCLNR/L1616	LSC42	LCS4CA	P-3	LSP4	LCL4
PCLNR/L1616H12E	ELSC42	LCS4CA	P-3	LSP4S	LCL43S
PCLNR/L1233, PCLNR/L**0904	LSC317	LCS3	P-2.5	LSP3	LCL33
PCLNR/L2020	LSC42	LCS4	P-3	LSP4	LCL4
PCLNR/L2020K12E	ELSC42	LCS4	P-3	LSP4S	LCL43M

## PCLNR/L-CHP

Tube connection

Lever lock toolholders – 95° approach angle.  
For negative 80°/70° rhombic insert. High-pressure coolant capability.



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

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

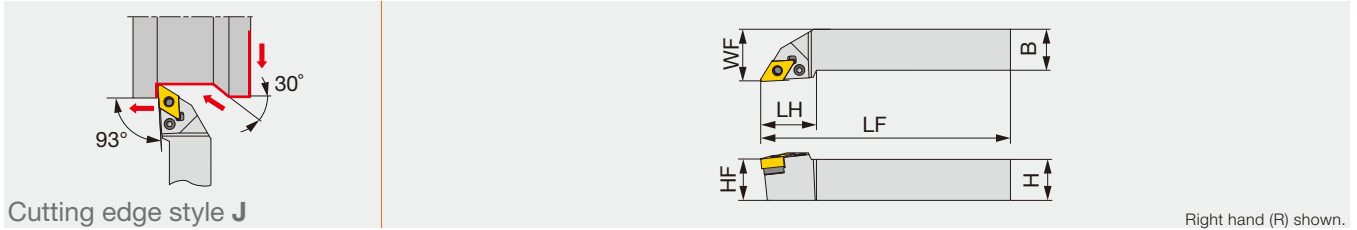
Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PCLNR/L**33-CHP, PCLNR/L**0904-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2
PCLNR/L**4-CHP, PCLNR/L**12-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

# DN

 **Rhombic, 55° with hole**

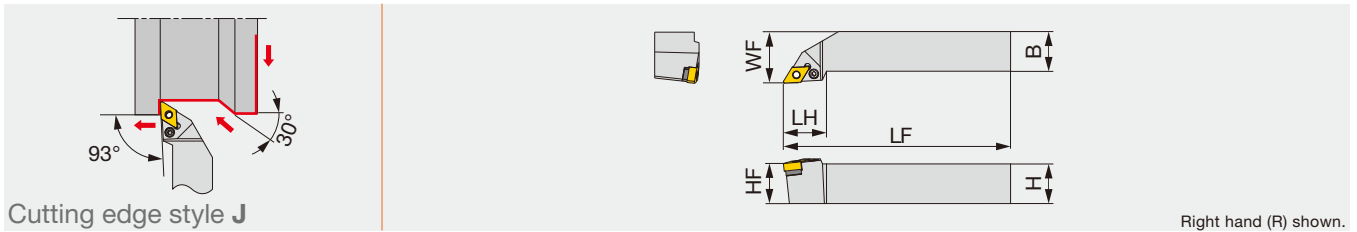
## PDJNR/L

Lever-lock toolholder with 93° approach angle, for negative 55°/45° rhombic inserts



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*
PDJNR2020H15	20	20	100	32	20	25	0.8	DN**/FNGA1504...	3








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

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
PDJNR2020H15, PDJNR/L2020, PDJNR/L2520	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR2020K15E	ELSD42	ELCS4	P-3	LSP4S	LCL44

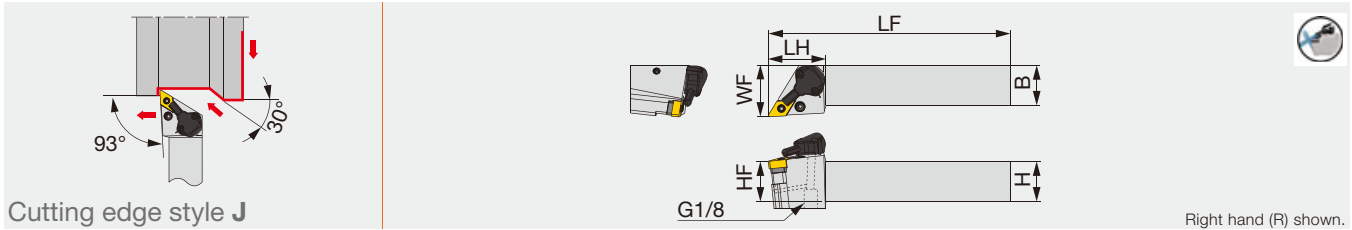
Reference pages : Inserts → 2-67 -, 2-74, CBN → 2-106 -, 2-110 -, PCD → 2-128 -

# TUNG T<sup>URN</sup> JET

## PDJNR/L-CHP

Tube connection

Lever lock toolholders – 93° approach angle.  
For negative 55°/45° rhombic insert. High-pressure coolant capability.



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**/FNMG 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**/FNMG 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**/FNMG1504...	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

Reference pages : Inserts → 2-67 -, 2-74, CBN → 2-106 -, 2-110 -, PCD → 2-128 -

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

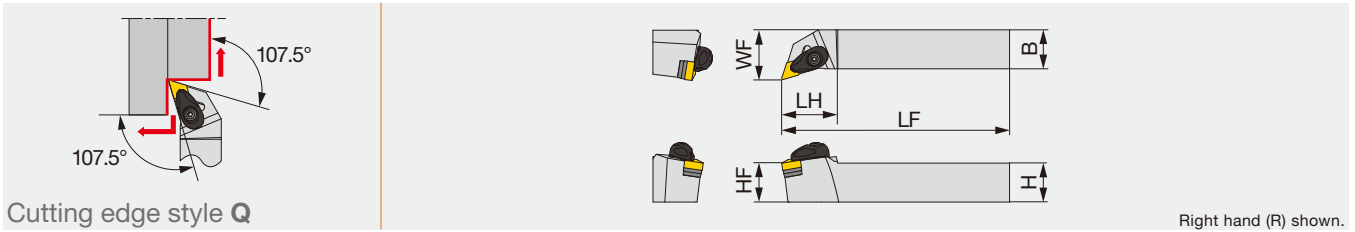
# DN



## TURNINGA

ADQNR/L

Double-clamp toolholder with 107.5° approach angle, for negative 55°/45° rhombic inserts



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

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



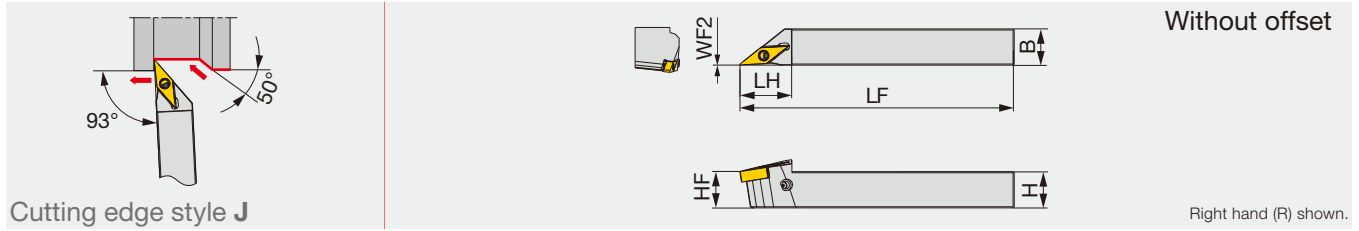
# VN



Rhombic, 35°  
with hole

## ISO RETURN JPVJ2NR/L

Back-clamp toolholder with 93° approach angle, for negative 35° rhombic inserts



Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JPVJ2NR082.33	0.500	0.500	4.750	0.900	0.500	0	0.0078	VN**2.33...	0.66
JPVJ2NR102.33	0.625	0.625	4.750	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

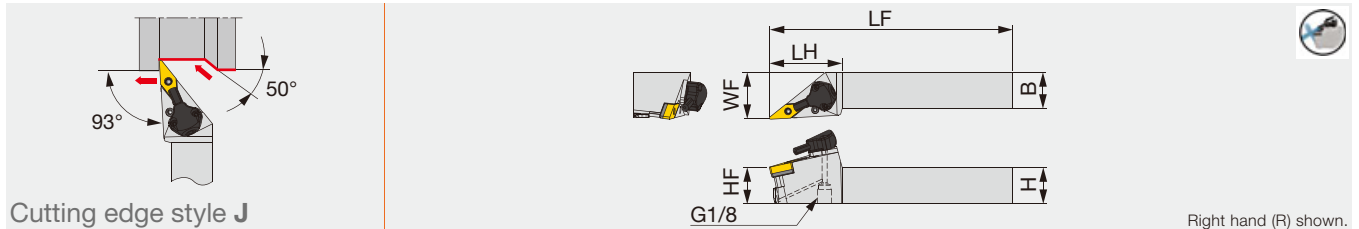
### SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPVJ2NR/L**33	SLLV-4	SL-PI-2	SR10400611	HW2.0/5RED
JPVJ2NR/L**1204				

## TUNG TJET PVJNR/L-CHP

Tube connection

Lever lock toolholders – 93° approach angle.  
For negative 35°/25° rhombic insert. High-pressure coolant capability.



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

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

# VN

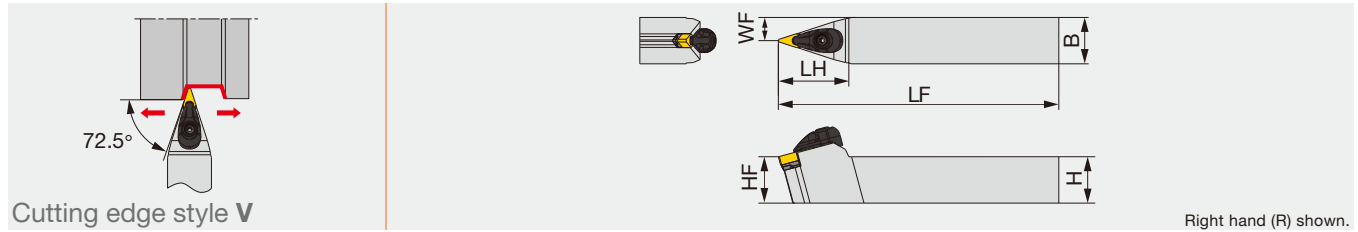


Rhombic, 35°  
with hole

## TURNINGA

AVVNN

Double-clamp toolholder with 72.5° approach angle, for negative 35°/25° rhombic inserts



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

Torque: Recommended clamping torque: lbs-ft (\*N·m) \*\*RE: Standard corner radius

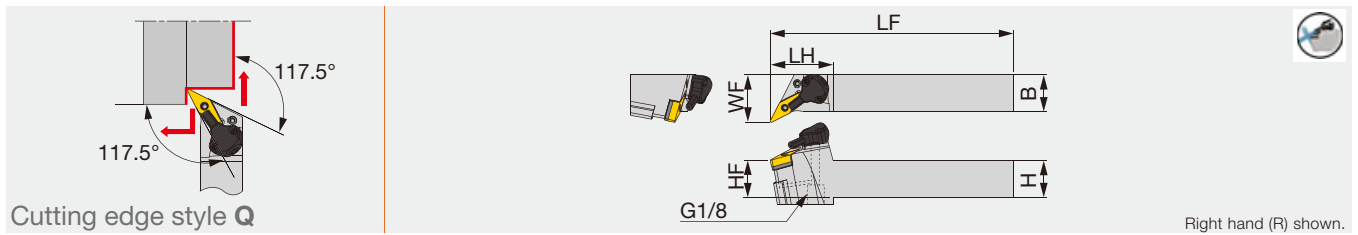
SPARE PARTS	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVVNN**2.33-A, AVVNN**1204-A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F
AVVNN123, 163-A, AVVNN**16-A	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

## TUNG T<sup>URN</sup>JET

### PVQNR/L-CHP

Tube connection

Lever lock toolholders – 117.5° approach angle.  
For negative 35°/25° rhombic insert. High-pressure coolant capability.



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

Torque: Recommended clamping torque: lbs-ft (\*N·m)  
\*\*RE: Standard corner radius

SPARE PARTS	Shim	Clamping screw	Wrench 1	Spring pin	Lever
Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PVQNR/L**-CHP	LSV317	LCS3V	P-2.5	LSP3	LCL3V

SPARE PARTS	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
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

Reference pages : Inserts → 2-83 -, 2-86, CBN → 2-116 -, 2-117 -, PCD → 2-130

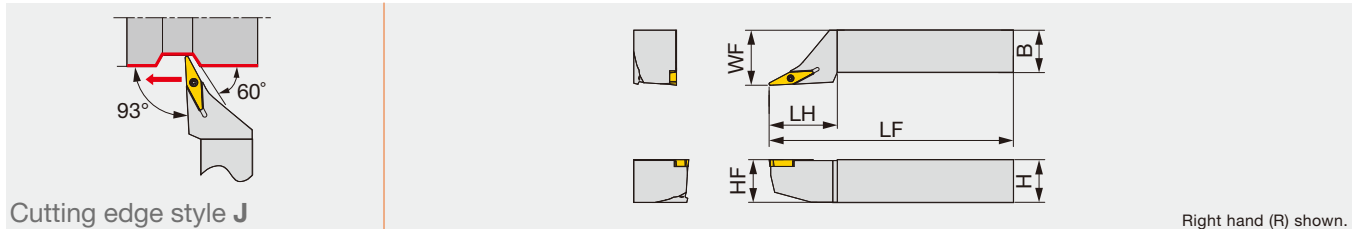
# YW

Rhombic, 25°  
with hole  
Positive 7°

## Y-PRO SERIES

### SYJBR/L

Screw-on toolholder with 93° approach angle, for positive 25° rhombic inserts



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...

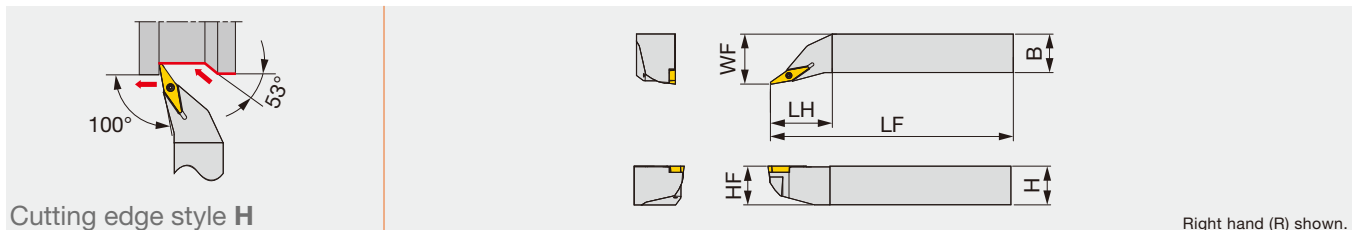
\*\*RE: Standard corner radius

#### SPARE PARTS

Designation	Clamping screw	Wrench
SYJBR/L...	CSTB-2.5L080	T-8F

### SYHBR/L

Screw-on toolholder with 100° approach angle, for positive 25° rhombic inserts



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...

\*\*RE : Standard corner radius

#### SPARE PARTS

Designation	Clamping screw	Wrench
SYHBR/L...	CSTB-2.5L080	T-8F

Reference pages : Inserts → 2-59

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

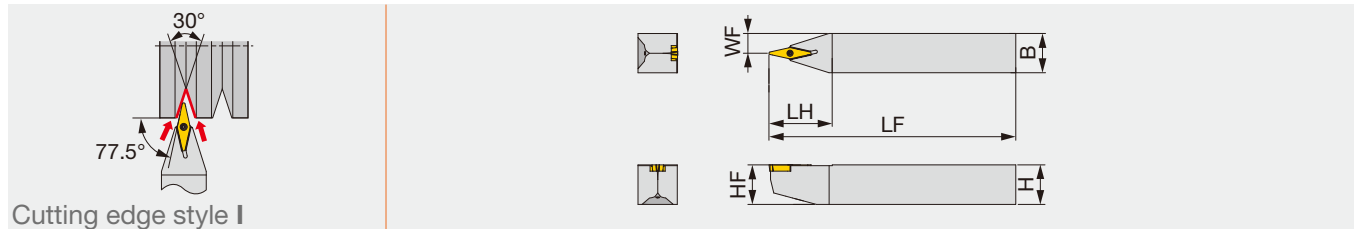
Technical Reference

# YW

Rhombic, 25°  
with hole  
Positive 7°

## Y-PRO SERIES SYIBN

Screw-on toolholder with 77.5° approach angle, for positive 25° rhombic inserts

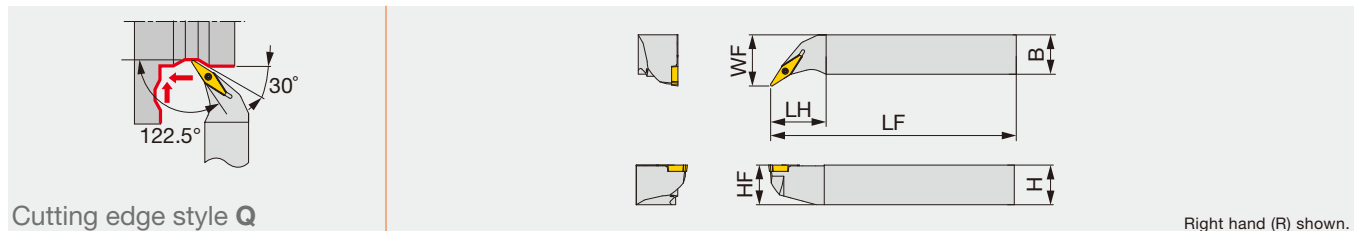


Inch	H	B	LF	LH	HF	WF	RE**	Insert
SYIBN123	0.750	0.750	4.500	1.250	0.750	0.375	0.031	YWMT16T3...
SYIBN163	1.000	1.000	6.000	1.500	1.000	0.500	0.031	YWMT16T3...
Metric	H	B	LF	LH	HF	WF	RE**	Insert
SYIBN2020K16	20	20	125	32	20	10	0.8	YWMT16T3...

\*\*RE : Standard corner radius

## SYQBR/L

Screw-on toolholder with 122.5° approach angle, for positive 25° rhombic inserts



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...

\*\*RE : Standard corner radius

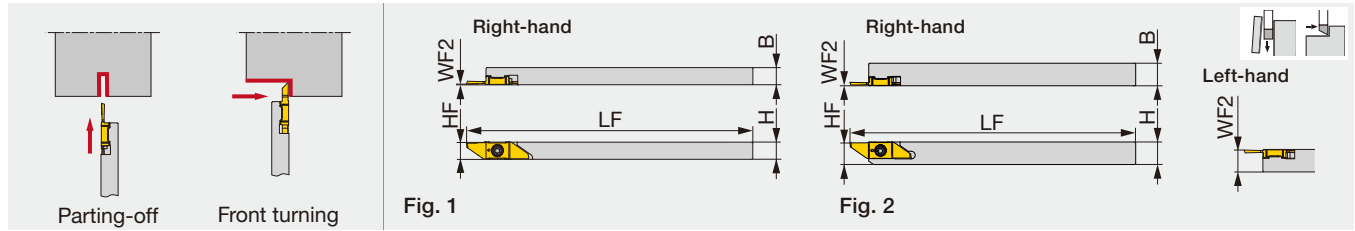
### SPARE PARTS



Designation	Clamping screw	Wrench
SYIBN...	CSTB-2.5L080	T-8F
SYQBR/L...		

Reference pages : Inserts → 2-59

Parting-off and front turning toolholders



Metric	H	B	LF	HF	WF2 <sup>(1)</sup>	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...).

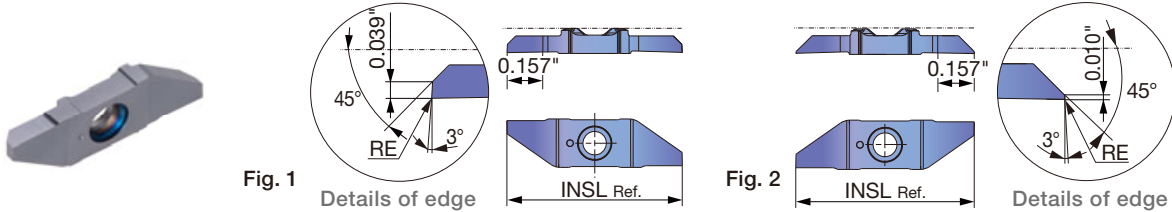
SPARE PARTS



Designation	Clamping screw	Wrench
JSXXR...05	CSTB-2.5L054DL	T-7F
JSXXL...05	CSTB-2.5L054DR	T-7F

**INSERT**

JVFN45R/L (For front turning)



P	Steel	★					
M	Stainless	★					
K	Cast iron						
N	Non-ferrous	★					
S	Superalloys	★					
H	Hard materials						

★ : First choice

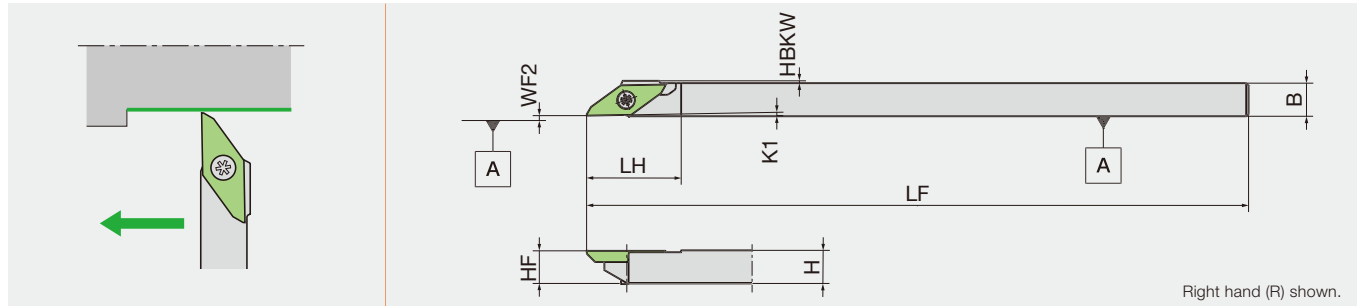
Designation	HAND	RE	Coated					INSL (in)	Fig.
			SH725						
JVFN45R0310F	R	0	●					0.827	1
JVFN45L0302FL	L	0	●					0.827	2

● : Line up

# CSVF.. series/Toolholder

## CSVR/L

Screw-on toolholder for front turning



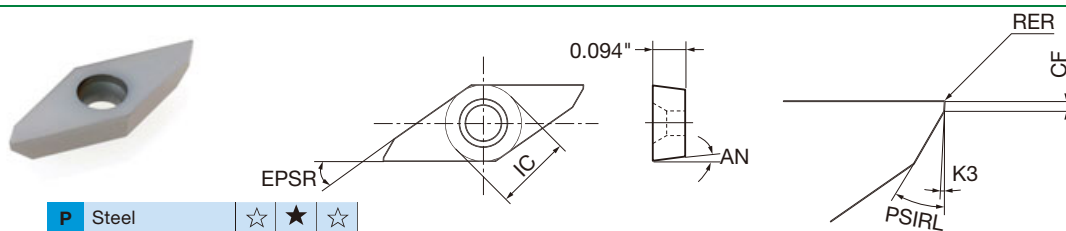
Inch	H	B	LF	LH	HBKW	HF	K1	WF2	Insert
CSVR06-IN-NC	0.375	0.375	4.724	0.787	-	0.375	1°	0.004	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR08-IN-NC	0.500	0.500	4.724	0.787	-	0.500	1°	0.004	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVL06-IN-NC	0.375	0.375	4.724	0.787	-	0.375	1°	0.004	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVL08-IN-NC	0.500	0.500	4.724	0.787	-	0.500	1°	0.004	CSV series, CSVF../CSVB../CSVG../CSVT..
Metric	H	B	LF	LH	HBKW	HF	K1	WF2	Insert
CSVR07	7	7	140	20	0.5	7	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR07GX	7	7	85	20	0.5	7	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR08	8	8	140	20	0	8	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR08GX	8	8	85	20	0	8	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR095	9.5	9.5	140	20	0	9.5	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR10	10	10	140	20	0	10	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR12	12	12	140	20	0	12	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR12GX	12	12	85	20	0	12	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVL07	7	7	140	20	0.5	7	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVL08	8	8	140	20	0	8	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVL10	10	10	140	20	0	10	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVL08NC	8	8	120	20	-	8	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVL10NC	10	10	120	20	-	10	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVL12NC	12	12	120	20	-	12	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR08NC	8	8	120	20	-	8	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR08NC-F	8	8	120	20	-	8	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR10GXNC	10	10	85	20	-	10	1°	0 - 0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR10NC	10	10	120	20	-	10	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..
CSVR12NC	12	12	120	20	-	12	1°	0.1	CSV series, CSVF../CSVB../CSVG../CSVT..

### SPARE PARTS

Designation	Clamp screw	Wrench (for Clamp screw)
CSVR/L**	LRIS-2.5*7	CLR-15S

### INSERT

#### CSVF-V without chipbreaker (For front turning)



	Steel	Stainless	Non-ferrous	Superalloys	Hard materials
P	☆	★	☆	★	☆
M	★	☆	☆	★	☆
N	★	☆	☆	★	☆
S	★	☆	☆	★	☆
H	★	☆	☆	★	☆

★ : First choice  
☆ : Second choice

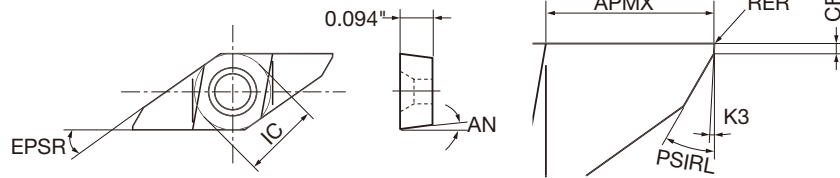
Right hand (R) shown.

Designation	HAND	Coated			Mirror finish	APMX (in)	IC (in)	AN	EPSR	CF (in)	K3	PSIRL	RER (in)
		DT4	VM1	ZM3									
CSVF11FRV	R		●		M	-	0.250	7°	35°	0.012	5°	30°	0
CSVF11FRV-A	R		●		M	-	0.250	7°	35°	0.012	2°	30°	0
CSVF11FRV-C	R		●		M	-	0.250	7°	35°	0.006	5°	30°	0
CSVF11FRV-M	R	●	●	●	M	-	0.250	7°	35°	0.006	2°	30°	0
CSVF11FLV	L		●		M	-	0.250	7°	35°	0.012	5°	30°	0
CSVF11FLV-M	L		●		M	-	0.250	7°	35°	0.006	2°	30°	0

All angles shown are obtained when insert is set in the holder.

● : Line up

## CSVF-VB with chipbreaker (For front turning)



P	Steel	☆	★	☆
M	Stainless	★	☆	☆
N	Non-ferrous	☆	☆	★
S	Superalloys	★	☆	☆
H	Hard materials	★	☆	☆

★ : First choice  
☆ : Second choice

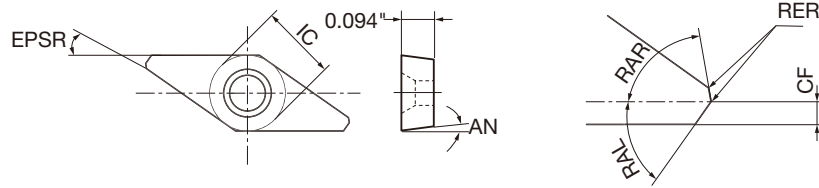
Right hand (R) shown.

Designation	HAND	Coated			Mirror finish	APMX (in)	IC (in)	AN	EPSR	CF (in)	K3	PSIRL	RER (in)
		DT4	VM1	ZM3									
CSVF11FRVB	R	●	●	●	M	0.118	0.250	7°	35°	0.012	5°	30°	0
CSVF11FRVB-A	R	●	●	●	M	0.118	0.250	7°	35°	0.012	2°	30°	0
CSVF11FRVB-C	R	●	●	●	M	0.118	0.250	7°	35°	0.006	5°	30°	0
CSVF11FRVB-M	R	●	●	●	M	0.118	0.250	7°	35°	0.006	2°	30°	0
CSVF11FLVB	L	●	●	●	M	0.118	0.250	7°	35°	0.012	5°	30°	0
CSVF11FLVB-M	L	●	●	●	M	0.118	0.250	7°	35°	0.006	2°	30°	0

All angles shown are obtained when insert is set in the holder.

● : Line up

## CSVF-VX without chipbreaker (For front turning)



P	Steel	★	☆
M	Stainless	☆	☆
N	Non-ferrous	☆	☆
S	Superalloys	☆	☆
H	Hard materials	☆	☆

★ : First choice  
☆ : Second choice

Left hand (L) shown.

Designation	HAND	Coated		Mirror finish	APMX (in)	IC (in)	AN	EPSR	CF (in)	RAL	RAR	RER (in)
		VM1										
CSVF11FRVX	L	●		M	-	0.250	7°	35°	0.028	45°	80°	0

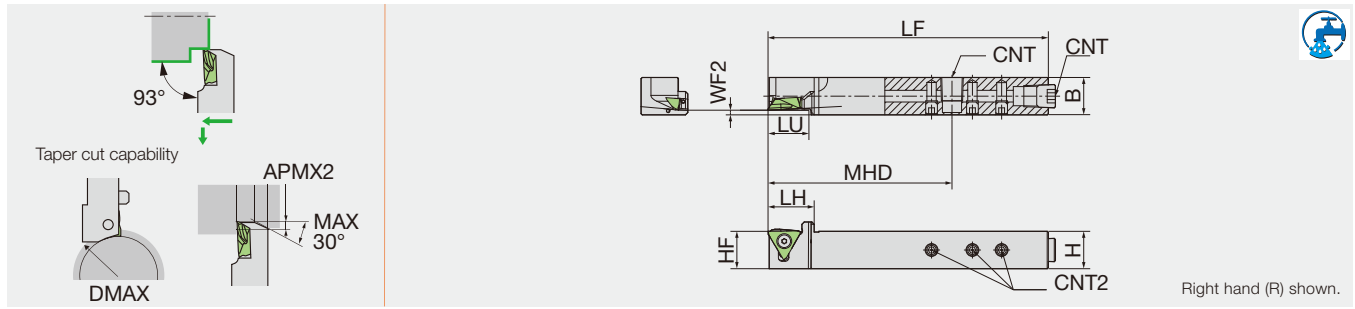
All angles shown are obtained when insert is set in the holder.

● : Line up

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

### TFT-OH3

Screw-on toolholder for front turning, with high pressure coolant capability



Inch	DMAX	APMX2	H	B	LF	LH	HF	LU	MHD	WF2	CNT	CNT2	Insert
TFTR10X-IN-OH3	1.575	0.098	0.625	0.625	4.724	0.778	0.625	0.709	3.1	0.079	NPT1/8	M5	TFX33.. TF33..
Metric	DMAX	APMX2	H	B	LF	LH	HF	LU	MHD	WF2	CNT	CNT2	Insert
TFTR1616X-OH3	40	2.5	16	16	120	19.75	16	18	78.75	2	Rc1/8	M5	TFX33.. TF33..

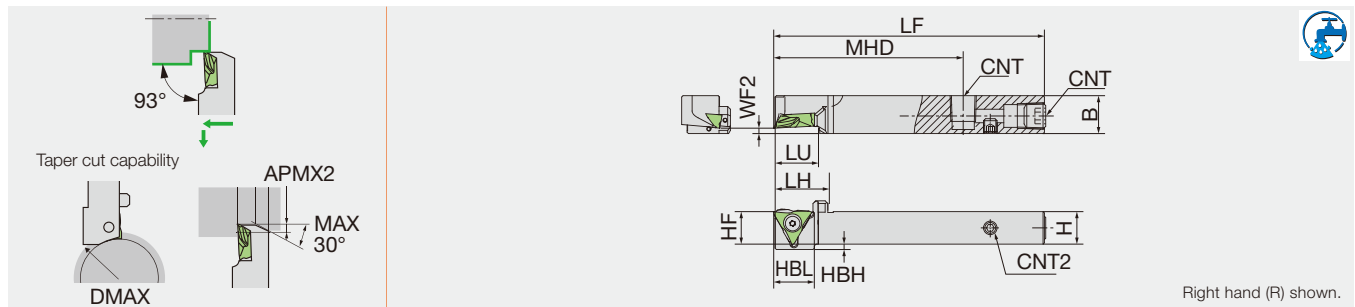
[Workpiece shape restrictions during machining]  
 DMAX: Max. bar stock diameter during APMX2 max DOC  
 APMX2: Max depth of cut  
 NOTE: Reference Chart of OH3 Hole Position → 10-1

#### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
TFTR10X-IN-OH3	LR-S-4*10PW	SPNPT1/8	SS0505SC	CLR-15S	LW-2.5
TFTR1616X-OH3	LR-S-4*10PW	SPR1/8L	SS0505SC	CLR-15S	LW-2.5

### TFT-OH2

Screw-on toolholder for front turning, with high pressure coolant capability



Inch	DMAX	APMX2	H	B	LF	LH	HBH	HBL	HF	LU	MHD	WF2	CNT	CNT2	Insert
TFTR06H-IN-OH2	0.787	0.098	0.375	0.551	3.937	0.787	0.157	0.591	0.375	0.591	2.756	0.079	M6*1	M5	TFX33.. TF33..
TFTR08H-IN-OH2	1.181	0.098	0.500	0.551	3.937	0.787	0.079	0.591	0.5	0.591	2.756	0.079	NPT1/8	M5	TFX33.. TF33..
TFTR10X-IN-OH2	1.575	0.098	0.625	0.625	4.724	0.787	-	-	0.625	0.689	2.756	0.079	NPT1/8	M5	TFX33.. TF33..
Metric	DMAX	APMX2	H	B	LF	LH	HBH	HBL	HF	LU	MHD	WF2	CNT	CNT2	Insert
TFTR1014H-OH2	20	2.5	10	14	100	20	4	15	10	15	70	2	M6*1	M5	TFX33.. TF33..
TFTR1214H-OH2	30	2.5	12	14	120	20	2	15	12	15	70	2	Rc1/8	M5	TFX33.. TF33..
TFTR1616X-OH2	40	2.5	16	16	120	20	-	-	16	17.5	70	2	Rc1/8	M5	TFX33.. TF33..

[Workpiece shape restrictions during machining]  
 DMAX: Max. bar stock diameter during APMX2 max DOC  
 APMX2: Max depth of cut

#### SPARE PARTS

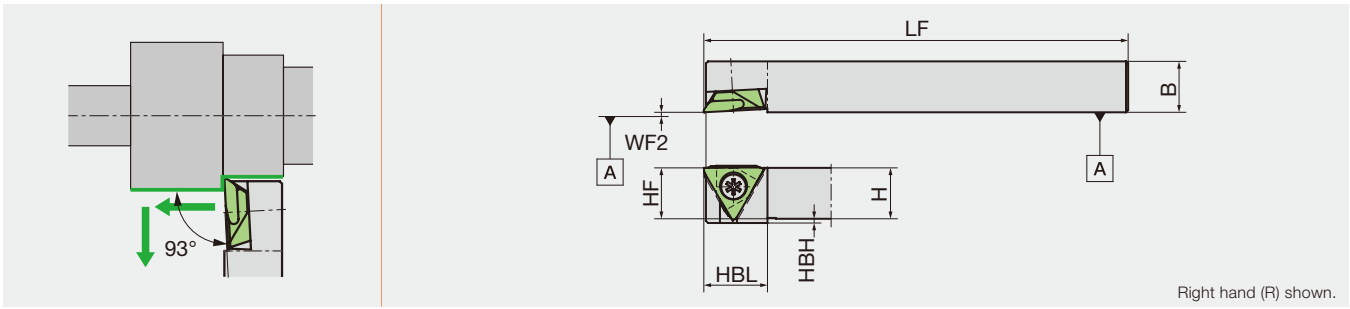
Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
TFTR06H-IN-OH2, TFTR1014H-OH2	LR-S-4*10PW	SS0605SC	SS0505SC	CLR-15S	LW-2.5
TFTR08H-IN-OH2, TFTR1214H-OH2	LR-S-4*10PW	SPR1/8	SS0505SC	CLR-15S	LW-2.5
TFTR10X-IN-OH2, TFTR1616X-OH2	LR-S-4*10PW	SPR1/8L	SS0505SC	CLR-15S	LW-2.5

Reference pages : Inserts → 3-104



# TFTR

## Screw-on toolholder for front turning



Inch	H	B	LF	HBH	HBL	HF	WF2	Insert	
TFTR06-IN	0.375	0.375	4.724	0.118	0.591	0.375	0	TFX33..	TF33..
TFTR08-IN	0.500	0.500	4.724	0.039	0.591	0.500	0	TFX33..	TF33..
Metric	H	B	LF	HBH	HBL	HF	WF2	Insert	
TFTR10	10	10	120	3	15	10	0	TFX33..	TF33..
TFTR12	12	12	120	1	15	12	0	TFX33..	TF33..
TFTR16	16	16	120	-	-	16	0	TFX33..	TF33..
TFTR20	20	20	120	-	-	20	0	TFX33..	TF33..

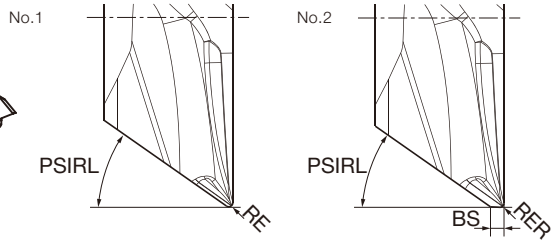
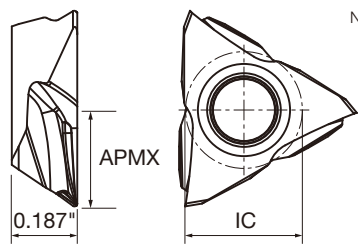
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
TFTR**	LR-S-4*10PW	CLR-15S

Grade 1  
 Insert 2  
 Ext. Toolholder 3  
 Int. Toolholder 4  
 Threading 5  
 Grooving 6  
 Shaper 7  
 Endmill 8  
 Drilling Tool 9  
 Technical Reference 10

**INSERT**  
**TFX The Front Max**



Right hand (R) shown.

P	Steel	★	☆
M	Stainless	☆	★
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials	★	

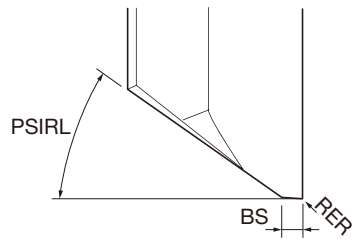
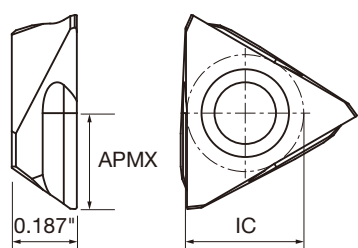
★ : First choice  
☆ : Second choice

Designation	Coated		Wiper	APMX (in)	IC (in)	BS (in)	PSIRL	RE (in)	RER (in)	Figure
	DM4	ST4								
TFX3301MR	●	●	No	0.197	0.375	-	32°	0.003	-	1
TFX3302MR	●	●	No	0.197	0.375	-	32°	0.007	-	1
TFX3304MR	●	●	No	0.197	0.375	-	32°	0.015	-	1
TFX3301MRW	●	●	Straight	0.197	0.375	0.020	32°	-	0.003	2
TFX3302MRW	●	●	Straight	0.197	0.375	0.020	32°	-	0.007	2
TFX3304MRW	●	●	Straight	0.197	0.375	0.020	32°	-	0.015	2

All angles shown are obtained when insert is set in the holder.

● : Line up

**TF**



Right hand (R) shown.

P	Steel	★	
M	Stainless	★	
N	Non-ferrous	★	
S	Superalloys		
H	Hard materials		

★ : First choice  
☆ : Second choice

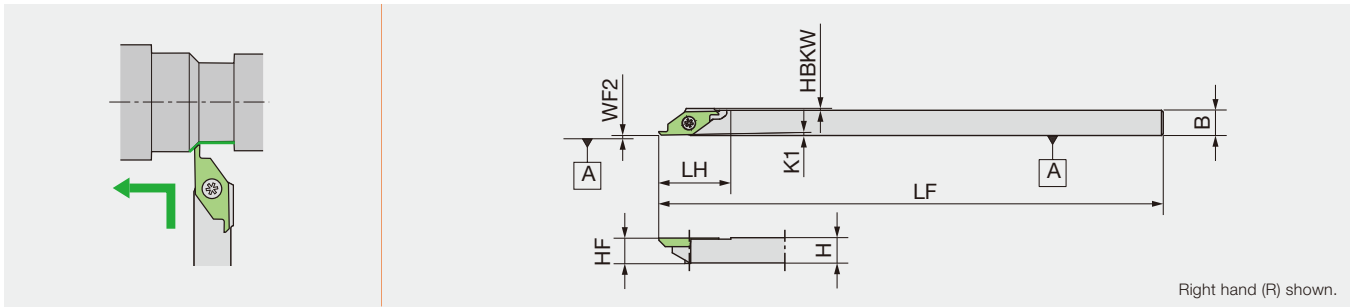
Designation	Coated		Wiper	APMX (in)	IC (in)	BS (in)	PSIRL	RER (in)
	ZM3							
TF3300R	●		Straight	0.157	0.375	0.020	32°	0
TF3305R	●		Straight	0.157	0.375	0.020	32°	0.002
TF3315R	●		Straight	0.157	0.375	0.020	32°	0.006
TF3320R	●		Straight	0.157	0.375	0.020	32°	0.008

All angles shown are obtained when insert is set in the holder.

● : Line up

# CSV R/L

## Screw-on toolholder for back turning



Inch	H	B	LF	LH	HBKW	HF	K1	WF2	Insert
CSVL06-IN-NC	0.375	0.375	4.724	0.787	-	0.375	1°	0.004	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVL08-IN-NC	0.500	0.500	4.724	0.787	-	0.500	1°	0.004	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR06-IN-NC	0.375	0.375	4.724	0.787	-	0.375	1°	0.004	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR08-IN-NC	0.500	0.500	4.724	0.787	-	0.500	1°	0.004	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
Metric	H	B	LF	LH	HBKW	HF	K1	WF2	Insert
CSVR07	7	7	140	20	0.5	7	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR07GX	7	7	85	20	0.5	7	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR08	8	8	140	20	0	8	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR08GX	8	8	85	20	0	8	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR095	9.5	9.5	140	20	0	9.5	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR10	10	10	140	20	0	10	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR12	12	12	140	20	0	12	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR12GX	12	12	85	20	0	12	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVL07	7	7	140	20	0.5	7	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVL08	8	8	140	20	0	8	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVL10	10	10	140	20	0	10	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVL08NC	8	8	120	20	-	8	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVL10NC	10	10	120	20	-	10	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVL12NC	12	12	120	20	-	12	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR08NC	8	8	120	20	-	8	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR08NC-F	8	8	120	20	-	8	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR10GXNC	10	10	85	20	-	10	1°	0 - 0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR10NC	10	10	120	20	-	10	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..
CSVR12NC	12	12	120	20	-	12	1°	0.1	CSV series, CSVF../CSVB../CSV..../CSVG../CSV..

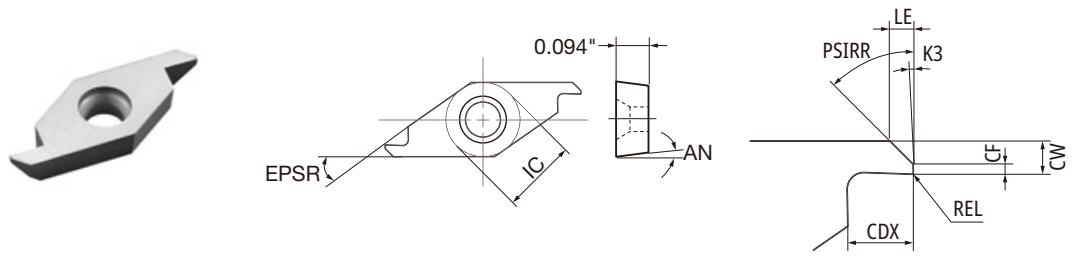
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CSV R/L**	LRIS-2.5*7	CLR-15S

## INSERT

### CSVB-V without chipbreaker (For back turning)



Right hand (R) shown.

<b>P</b>	Steel	☆	★	☆
<b>M</b>	Stainless	★	☆	☆
<b>N</b>	Non-ferrous	☆	☆	★
<b>S</b>	Superalloys	★	☆	☆
<b>H</b>	Hard materials	★	☆	☆

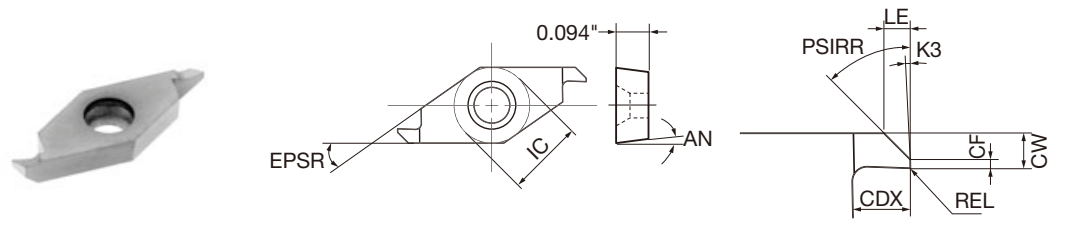
★ : First choice  
☆ : Second choice

Designation	HAND	Coated			Mirror finish	LE (in)	CDX (in)	IC (in)	AN	EPSR	CF (in)	CW (in)	K3	PSIRR	REL (in)
		DT4	VM1	ZM3											
CSVB11FRV	R		●		M	0.028	0.079	0.250	7°	35°	0.012	0.039	5°	45°	0
CSVB11FRV12	R		●		M	0.031	0.079	0.250	7°	35°	0.012	0.047	5°	45°	0
CSVB11FRV14	R		●		M	0.039	0.079	0.250	7°	35°	0.012	0.055	5°	45°	0
CSVB11FRV-A	R		●		M	0.028	0.079	0.250	7°	35°	0.012	0.039	2°	45°	0
CSVB11FRV-C	R		●		M	0.028	0.079	0.250	7°	35°	0.006	0.039	5°	45°	0
CSVB11FRV-M	R	●	●	●	M	0.028	0.079	0.250	7°	35°	0.006	0.039	2°	45°	0
CSVB11FLV	L		●		M	0.028	0.079	0.250	7°	35°	0.012	0.039	5°	45°	0
CSVB11FLV-M	L		●		M	0.028	0.079	0.250	7°	35°	0.006	0.039	2°	45°	0

All angles shown are obtained when insert is set in the holder.

● : Line up

### CSVB-VB with chipbreaker (For back turning)



Right hand (R) shown.

<b>P</b>	Steel	☆	★	☆
<b>M</b>	Stainless	★	☆	☆
<b>N</b>	Non-ferrous	☆	☆	★
<b>S</b>	Superalloys	★	☆	☆
<b>H</b>	Hard materials	★	☆	☆

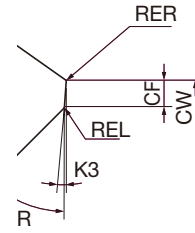
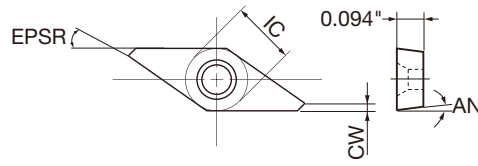
★ : First choice  
☆ : Second choice

Designation	HAND	Coated			Mirror finish	LE (in)	CDX (in)	IC (in)	AN	EPSR	CF (in)	CW (in)	K3	PSIRR	REL (in)
		DT4	VM1	ZM3											
CSVB11FRVB	R		●		M	0.028	0.079	0.250	7°	35°	0.012	0.039	5°	45°	0
CSVB11FRVB12	R		●		M	0.031	0.079	0.250	7°	35°	0.012	0.047	5°	45°	0
CSVB11FRVB14	R		●		M	0.039	0.079	0.250	7°	35°	0.012	0.055	5°	45°	0
CSVB11FRVB-A	R		●		M	0.028	0.079	0.250	7°	35°	0.012	0.039	2°	45°	0
CSVB11FRVB-C	R		●		M	0.028	0.079	0.250	7°	35°	0.006	0.039	5°	45°	0
CSVB11FRVB-M	R	●	●	●	M	0.028	0.079	0.250	7°	35°	0.006	0.039	2°	45°	0
CSVB11FLVB-M	L		●		M	0.028	0.079	0.250	7°	35°	0.006	0.039	2°	45°	0

All angles shown are obtained when insert is set in the holder.

● : Line up

# CSVB-VX without chipbreaker (For back turning)



Left hand (L) shown.

<b>P</b>	Steel	★
<b>M</b>	Stainless	☆
<b>N</b>	Non-ferrous	
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice

Designation	HAND	Coated	Mirror finish	IC (in)	AN	EPSR	CF (in)	CW (in)	K3	PSIRL	REL (in)	RER (in)
		VM1										
CSVB11FLVX	L	●	Ⓜ	0.250	7°	35°	0.001	0.028	5°	45°	0	0

All angles shown are obtained when insert is set in the holder.

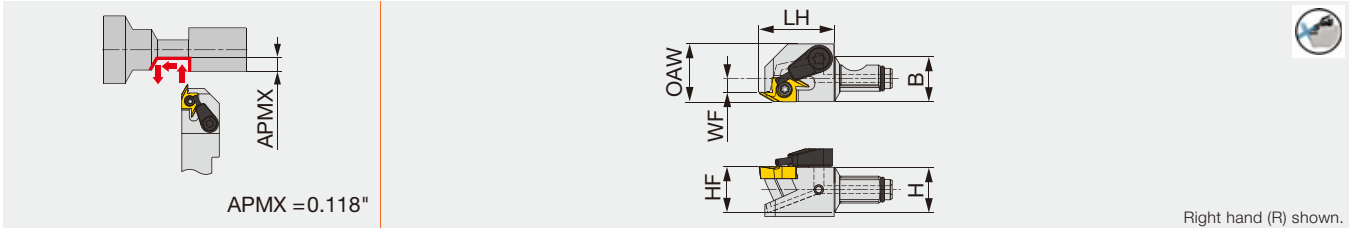
● : Line up

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# J-SERIES

## QC10/12/16-JSEGR-CHP

Screw-on modular head for back turning, with high pressure coolant capability

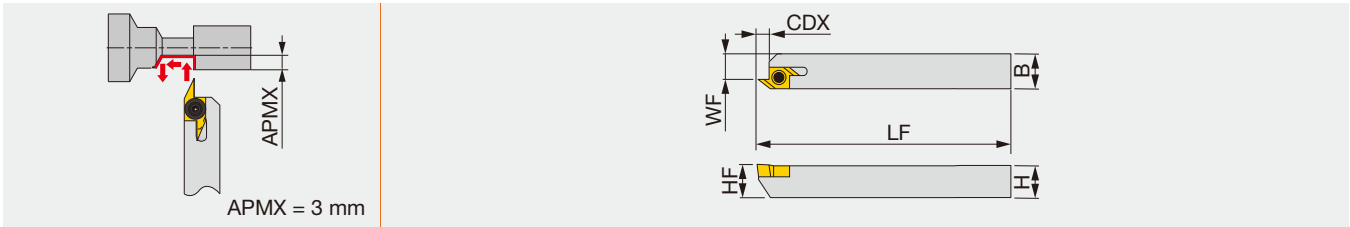


Metric	H	B	LH	HF	WF	OAW	Insert	Torque*
QC10-JSEGR10-CHP	10 (0.625")	10 (0.625")	17 (0.669")	10 (0.394")	2.5 (0.098")	13 (0.512")	J10ER...	1.2 (0.89)
QC12-JSEGR10-CHP	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	3.5 (0.138")	15 (0.591")	J10ER...	1.2 (0.89)
QC16-JSEGR10-CHP	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	5.5 (0.217")	20 (0.787")	J10ER...	1.2 (0.89)

Torque\* : Recommended clamping torque: N-m (lbs-ft)

## JSEGR/L

Screw-on toolholder for back turning



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)

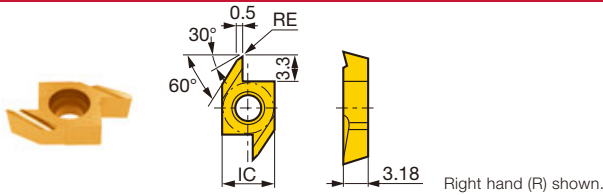
## SPARE PARTS



Designation	Clamping screw	Coolant unit	Wrench	Wrench 2 (Optional)	O-ring
QC10-JSEGR10-CHP	CSTB-2.5	-	T-8F	-	ORSS-0353.5X1.0NBR70
QC12-JSEGR10-CHP	CSTB-2.5	S-CU-CHP	T-8F	-	ORSS-0454.5X1.0NBR70
QC16-JSEGR10-CHP	CSTB-2.5	S-CU-CHP	T-8F	-	ORSS-0757.5X1.0NBR70
JSEGR/L...	CSTB-2.5	-	T-8F	(T-8L)	-

# INSERT

## J10E (Sharp edge)



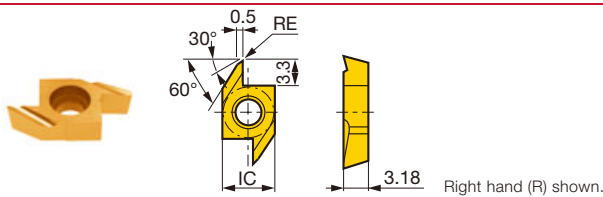
P	Steel	★	☆		★															
M	Stainless	★	☆																	
K	Cast iron	★			☆			☆												
N	Non-ferrous									★										
S	Superalloys		☆							★										
H	Hard materials									★										

★ : 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)



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

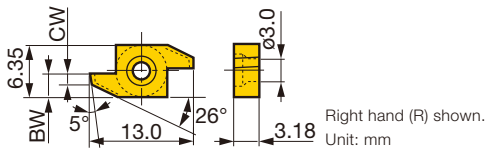
Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

## STANDARD CUTTING CONDITIONS (J10E type insert)

ISO	Workpiece material	Grade	Cutting speed Vc (sfm)	Feed f (ipr)
<b>P</b>	Steel 1045, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
	Free-cutting steel	J9530	164 - 492	0.0004 - 0.004
		SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
<b>M</b>	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
<b>N</b>	Aluminum alloys, Brass Si < 12%, 5056, 6061, etc.	TH10	33 - 656	0.0004 - 0.004
<b>S</b>	Difficult-to-machine material, Titanium alloys Ti-6Al-4V, etc.	TH10	33 - 98	0.0004 - 0.004

## INSERT

### 10E (Insert blank)

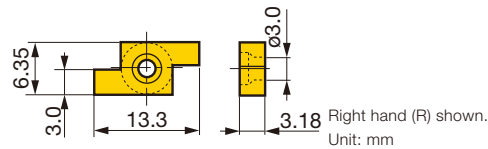


Designation	HAND	Uncoated		
		TH10		
10ER100B	R	●		
10EL100B	L	●		
10ER150B	R	●		
10EL150B	L	●		

● : 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)

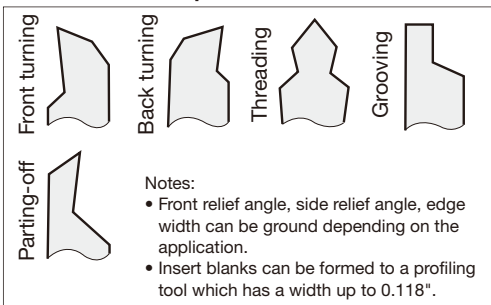


Designation	HAND	Uncoated		
		TH10		
10ER300	R	●		
10EL300	L	●		

● : 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



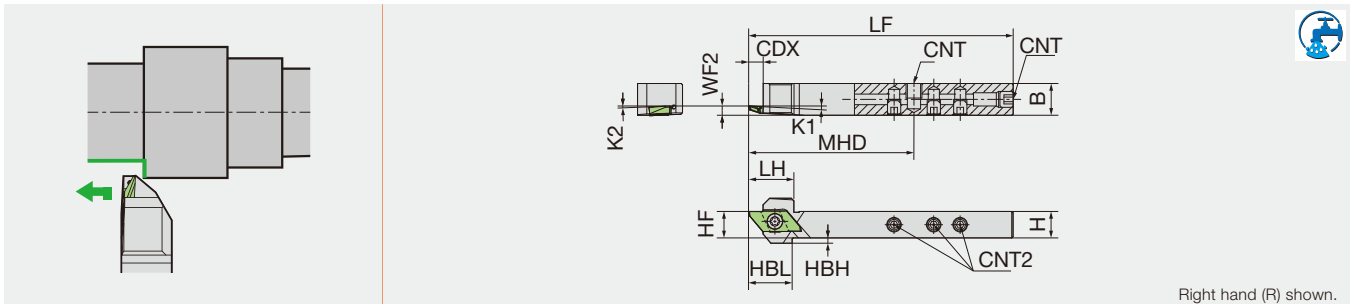
## Standard cutting conditions

Operations		Workpiece material	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	



## TBP-OH3

Screw-on toolholder for back turning, with high pressure coolant capability



Inch	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
TBPR10X-IN-OH3	0.625	0.625	4.724	0.787	0.217	-	-	0.625	3°	2°	3.100	0.138	NPT1/8	M5	TBP..
Metric	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
TBPR1012H-OH3	10	12	100	17.33	5.5	2	16.5	10	3°	2°	62.5	3.5	M6*1	M5	TBP..
TBPR16X-OH3	16	16	120	20	5.5	-	-	16	3°	2°	78.75	3.5	Rc1/8	M5	TBP..

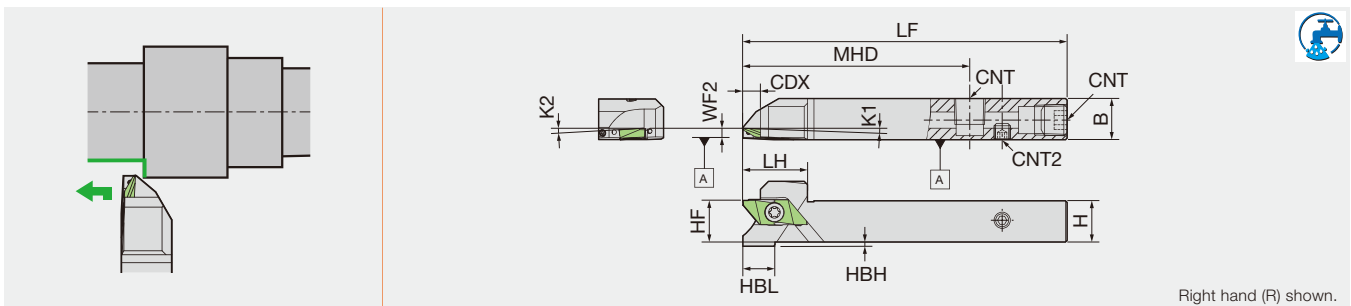
NOTE: Reference Chart of OH3 Hole Position→10-1

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
TBPR10X-IN-OH3	LRIS-4*12PW	SPNPT1/8	SS0505SC	CLR-15S	LW-2.5
TBPR1012H-OH3	LRIS-4*10PW	SS0605SC	SS0505SC	CLR-15S	LW-2.5
TBPR16X-OH3	LRIS-4*12PW	SPR1/8	SS0505SC	CLR-15S	LW-2.5

## TBP-OH2

Screw-on toolholder for back turning, with high pressure coolant capability



Inch	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
TBPR08H-IN-OH2	0.500	0.500	3.937	0.787	0.217	0.051	0.394	0.5	3°	2°	0.138	NPT1/8	M5	M5	TBP..
TBPR10X-IN-OH2	0.625	0.625	4.724	0.787	0.217	-	-	0.625	3°	2°	0.138	NPT1/8	M5	M5	TBP..
Metric	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
TBPR12H-OH2	12	12	100	19.5	5.5	2	10	12	3°	2°	70	3.5	Rc1/8	M5	TBP..
TBPR16X-OH2	16	16	120	19.5	5.5	-	-	16	3°	2°	70	3.5	Rc1/8	M5	TBP..

NOTE: Use a right-handed (R) or non-handed insert.

### SPARE PARTS

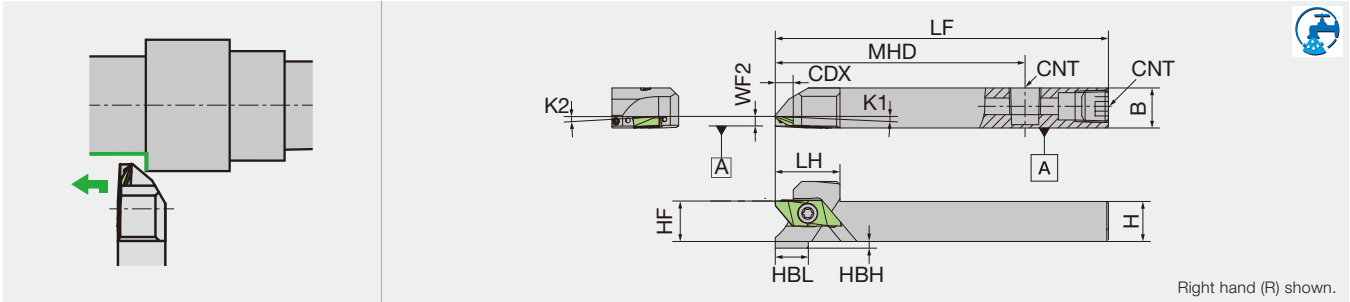
Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
TBPR*-OH2	LRIS-4*12PW	SPR1/8	SS0505SC	CLR-15S	LW-2.5

Reference pages : Inserts → 3-114 -

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

## TBP-OH

Screw-on toolholder for back turning, with high pressure coolant capability



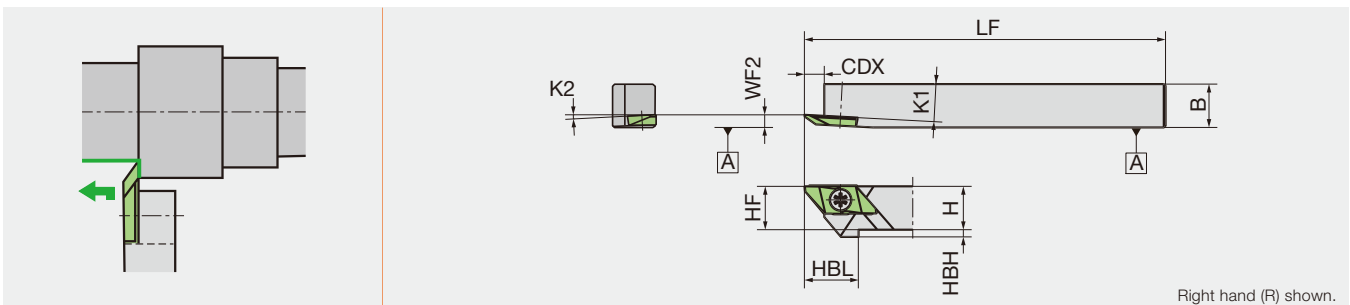
Inch	H	B	LF	HBH	HBL	HF	K1	K2	MHD	WF2	CDX	CNT	Insert
TBPR06H-IN-OH	0.375	0.472	3.937	0.176	0.748	0.375	3°	2°	2.953	0.138	0.217	M6*1	TBP..
TBPR08H-IN-OH	0.500	0.500	3.937	0.051	0.394	0.500	3°	2°	2.953	0.138	0.217	NPT1/8	TBP..
TBPR10H-IN-OH	0.625	0.625	3.937	-	-	0.625	3°	2°	2.953	0.138	0.217	NPT1/8	TBP..
Metric	H	B	LF	HBH	HBL	HF	K1	K2	MHD	WF2	CDX	CNT	Insert
TBPR1012H-OH	10	12	100	4	19	10	3°	2°	75	3.5	5.5	M6*1	TBP..
TBPR12H-OH	12	12	100	2	10	12	3°	2°	75	3.5	5.5	Rc1/8	TBP..
TBPR16H-OH	16	16	100	-	-	16	3°	2°	75	3.5	5.5	Rc1/8	TBP..

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Wrench (for Clamp screw)
TBPR06H-IN-OH, TBPR1012H-OH	LRIS-4*12PW	SS0605SC	CLR-15S
TBPR08H-IN-OH, TBPR10H-IN-OH	LRIS-4*12PW	SPNPT1/8	CLR-15S
TBPR12H-OH, TBPR16H-OH	LRIS-4*12PW	SPR1/8	CLR-15S

## TBPR/L

Screw-on toolholder for back turning



Inch	H	B	LF	HBH	HBL	HF	K1	K2	WF2	CDX	Insert
TBPR06-IN	0.375	0.375	4.724	0.079	0.591	0.375	3°	2°	0.138	0.217	TBP..
TBPR08-IN	0.500	0.500	4.724	-	-	0.500	3°	2°	0.138	0.217	TBP..
TBPR10-IN	0.625	0.625	4.724	-	-	0.625	3°	2°	0.138	0.217	TBP..
Metric	H	B	LF	HBH	HBL	HF	K1	K2	WF2	CDX	Insert
TBPR08	8	10	120	4	15	8	3°	2°	3.5	5.5	TBP..
TBPR10	10	10	120	2	15	10	3°	2°	3.5	5.5	TBP..
TBPR10H	10	10	100	2	15	10	3°	2°	3.5	5.5	TBP..
TBPR12	12	12	120	-	-	12	3°	2°	3.5	5.5	TBP..
TBPR12GX	12	12	85	-	-	12	3°	2°	3.5	5.5	TBP..
TBPR16	16	16	120	-	-	16	3°	2°	3.5	5.5	TBP..
TBPR16H	16	16	100	-	-	16	3°	2°	3.5	5.5	TBP..
TBPL08	8	10	120	4	15	8	3°	2°	3.5	5.5	TBP..
TBPL10	10	10	120	2	15	10	3°	2°	3.5	5.5	TBP..
TBPL12	12	12	120	-	-	12	3°	2°	3.5	5.5	TBP..
TBPL16	16	16	120	-	-	16	3°	2°	3.5	5.5	TBP..

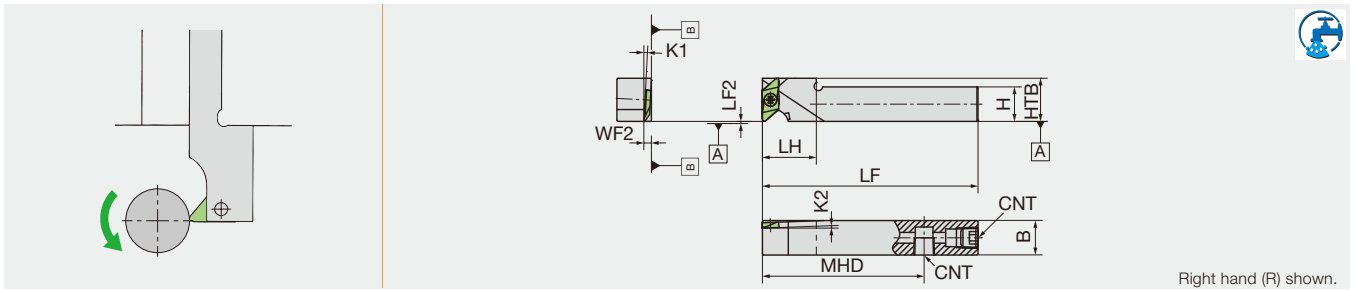
### SPARE PARTS

Designation	Clamp screw	Wrench (for Clamp screw)
TBPR06-IN TBPR/L08, TBPR/L10**	LRIS-4*10PW	CLR-15S
TBPR08-IN TBPR/L12**	LRIS-4*12PW	CLR-15S
TBPR/L16**	LRIS-4*12PW	CLR-15S

Reference pages : Inserts → [3-114](#) -

## Y-TBPR-OH

Screw-on Y-axis turning toolholder for back turning, with high pressure coolant capability



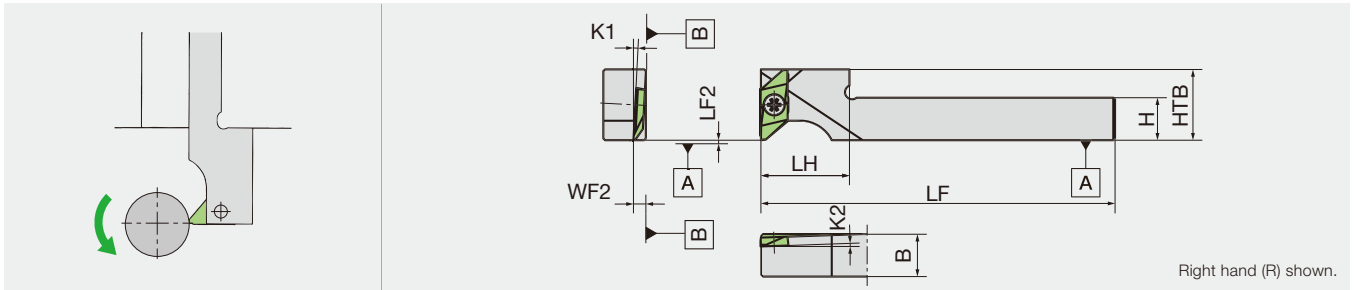
Inch	H	B	LF	LH	HTB	K1	K2	LF2	MHD	WF2	CNT	Insert
Y-TBPR08H-IN-OH2	0.500	0.500	3.937	0.984	0.787	3°	2°	0	2.756	0.138	NPT1/8	TBP..
Metric	H	B	LF	LH	HTB	K1	K2	LF2	MHD	WF2	CNT	Insert
Y-TBPR12HS-OH	12	12	100	20	20	3°	2°	0	75	3.5	Rc1/8	TBP..
Y-TBPR12HS-OH2	12	12	100	20	20	3°	2°	0	70	3.5	Rc1/8	TBP..
Y-TBPR16H-OH	16	16	100	25	20	3°	2°	0	75	3.5	Rc1/8	TBP..

NOTE: Use a right-handed (R) insert.

NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter. →10-1

## Y-TBPR

Screw-on Y-axis turning toolholder for back turning



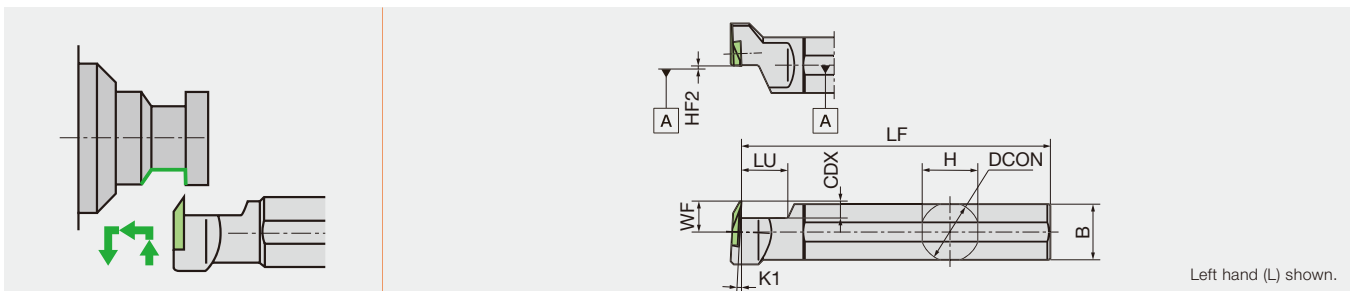
Metric	H	B	LF	LH	HTB	K1	K2	LF2	WF2	Insert
Y-TBPR06-IN	0.375	0.375	2.756	0.984	0.787	3°	2°	0	0.138	TBP..
Y-TBPR08-IN	0.500	0.500	2.756	0.984	0.787	3°	2°	0	0.138	TBP..
Y-TBPR10-IN	0.625	0.625	2.756	0.984	0.787	3°	2°	0	0.138	TBP..
Metric	H	B	LF	LH	HTB	K1	K2	LF2	WF2	Insert
Y-TBPR10MS	10	10	120	22	20	3°	2°	0	3.5	TBP..
Y-TBPR10S	10	10	120	20	20	3°	2°	0	3.5	TBP..
Y-TBPR12MS	12	12	120	22	20	3°	2°	0	3.5	TBP..
Y-TBPR12S	12	12	120	20	20	3°	2°	0	3.5	TBP..

NOTE: Use a right-handed (R) insert.

NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter. →10-1

## DS-TBPL

DS Toolholders / For sleeve tool post



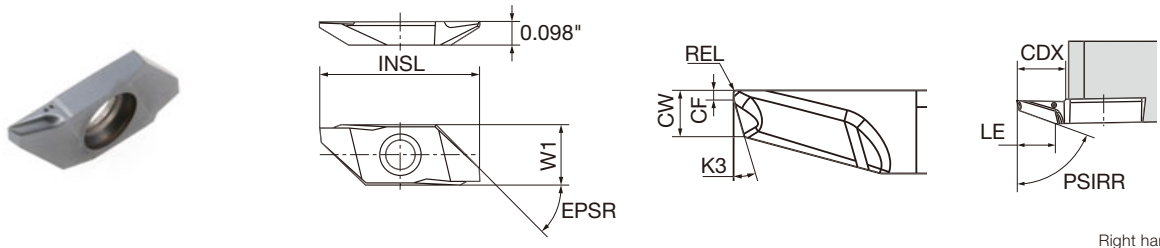
Metric	H	B	LF	CDX	DCON	HF2	K1	K2	LU	WF	Insert
DS-TBPL19	18	18	120	5.5	19.05	0	3°	2°	14	10	TBP...
DS-TBPL20	19	19	120	5.5	20	0	3°	2°	14	10	TBP...
DS-TBPL25	24	24	150	5.5	25.4	0	3°	2°	14	10	TBP...

NOTE: Use a right-handed (R) insert.

### SPARE PARTS

Designation	Clamp screw	Clamp screw 1	Screw (for CNT)	Wrench (for Clamp screw)	Wrench 1 (for Clamp screw)
Y-TBPR08H-IN-OH2	LRIS-4*12PW	SNPT1/8	SS0505SC	CLR-15S	LW-2.5
Y-TBPR** -OH, Y-TBPR12HS-OH2	LRIS-4*12PW	-	SPR1/8	CLR-15S	-
Y-TBPR10**, Y-TBPR12MS	LRIS-4*10PW	-	-	CLR-15S	-
Y-TBPR12S	LRIS-4*12PW	-	-	CLR-15S	-
DS-TBPL**	-	LRIS-4*10	-	-	LLR-25S-20*65

## INSERT TBP with BM-Chipbreaker



Right hand (R) shown.

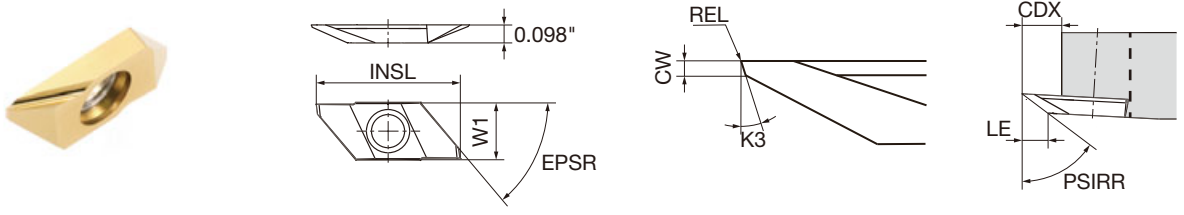
P	Steel	★	☆	☆
M	Stainless	☆	★	☆
N	Non-ferrous	☆	☆	★
S	Superalloys	★	☆	☆
H	Hard materials	★	☆	☆

★ : First choice  
☆ : Second choice

Designation	HAND	Coated			LE (in)	CDX (in)	INSL (in)	W1 (in)	EPSR	CF (in)	CW (in)	K3	PSIRR	REL (in)
		DM4	ST4	TM4										
TBP72FR05-BM	R	●	●	●	0.138	0.209	0.787	0.315	50°	0.012	0.055	16°	72°	0.002
TBP72FR10M-BM	R	●	●	●	0.138	0.209	0.787	0.315	50°	0.012	0.055	16°	72°	0.003
TBP72FR20M-BM	R	●	●	●	0.138	0.209	0.787	0.315	50°	0.012	0.055	16°	72°	0.007

● : Line up

## TBP with Chipbreaker



Right hand (R) shown.

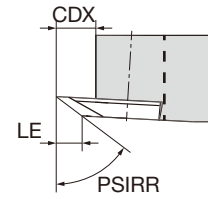
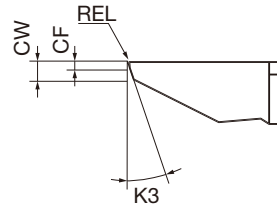
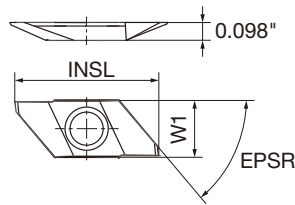
P	Steel	★	☆	☆	★	☆
M	Stainless	☆	★	★	☆	☆
N	Non-ferrous	☆	☆	★	☆	★
S	Superalloys	☆	★	☆	☆	☆
H	Hard materials	★	☆	☆	☆	☆

★ : First choice  
☆ : Second choice

Designation	HAND	Coated					LE (in)	CDX (in)	INSL (in)	W1 (in)	EPSR	CF	CW (in)	K3	PSIRR	REL (in)
		QM3	DT4	TM4	VM1	ZM3										
TBP55FR00	R				●	●	0.118	0.209	0.787	0.315	50°	-	0.020	15°	55°	0
TBP55FR10	R				●	●	0.118	0.209	0.787	0.315	50°	-	0.020	15°	55°	0.004
TBP60FR00	R	●	●	●	●	●	0.146	0.209	0.787	0.315	50°	-	0.020	15°	60°	0
TBP60FR10	R	●		●	●	●	0.146	0.209	0.787	0.315	50°	-	0.020	15°	60°	0.004
TBP60FR10M	R	●	●		●		0.146	0.209	0.787	0.315	50°	-	0.020	15°	60°	0.003
TBP60FR20	R			●			0.146	0.209	0.787	0.315	50°	-	0.020	15°	60°	0.008
TBP55FL00	L				●		0.118	0.209	0.787	0.315	50°	-	0.020	15°	55°	0
TBP55FL10	L				●		0.118	0.209	0.787	0.315	50°	-	0.020	15°	55°	0.004
TBP60FL00	L				●		0.146	0.209	0.787	0.315	50°	-	0.020	15°	60°	0
TBP60FL10	L				●		0.146	0.209	0.787	0.315	50°	-	0.020	15°	60°	0.004

● : Line up

## TBP-V without Chipbreaker



Right hand (R) shown.

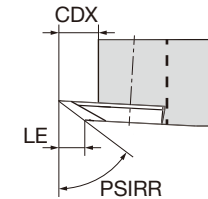
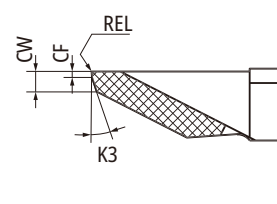
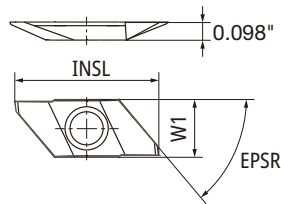
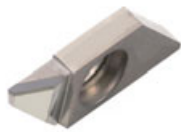
P	Steel	★	☆		
M	Stainless	☆	★		
N	Non-ferrous		☆	★	
S	Superalloys				
H	Hard materials				

★ : First choice  
☆ : Second choice

Designation	HAND	Coated			Uncoated	Mirror finish	LE (in)	CDX (in)	INSL (in)	W1 (in)	EPSR	CF (in)	CW (in)	K3	PSIRR	REL (in)
		VM1	ZM3	KM1												
TBP60FRV	R	●	●	●		M	0.189	0.209	0.787	0.315	50°	0.008	0.028	15°	60°	0
TBP60FRV05	R	●		●		M	0.189	0.209	0.787	0.315	50°	0.008	0.028	15°	60°	0.002
TBP60FRV10	R	●	●	●		M	0.189	0.209	0.787	0.315	50°	0.008	0.028	15°	60°	0.004
TBP60FLV	L	●				M	0.189	0.209	0.787	0.315	50°	0.008	0.028	15°	60°	0

● : Line up

## TBP-P PCD tipped



Right hand (R) shown.

P	Steel			
M	Stainless			
N	Non-ferrous	★		
S	Superalloys			
H	Hard materials			

★ : First choice  
☆ : Second choice

Designation	HAND	PCD		LE (in)	CDX (in)	INSL (in)	W1 (in)	EPSR	CF (in)	CW (in)	K3	PSIRR	REL (in)
		PD1											
TBP60FRV00-P	R	●		0.157	0.209	0.787	0.315	50°	0.008	0.028	15°	60°	0
TBP60FRV10-P	R	●		0.157	0.209	0.787	0.315	50°	0.008	0.028	15°	60°	0.004

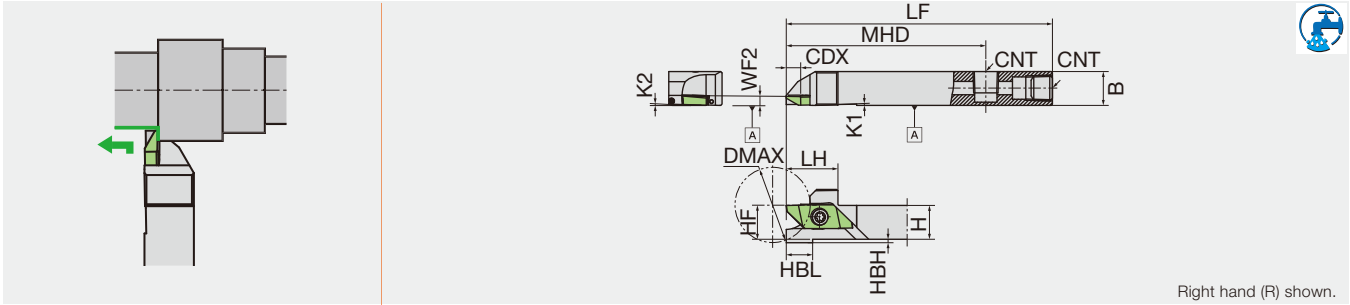
● : Line up

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

## TBPAR-OH

Screw-on toolholder for back turning, with high pressure coolant capability



Metric	DMAX	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	Insert
TBPAR12H-OH	25	12	12	100	19.5	6.8	4	10	12	1°	2°	75	-3.4	Rc1/8	TBPA..
TBPAR16H-OH	35	16	16	100	19.5	6.8	2	10	16	1°	2°	75	-3.4	Rc1/8	TBPA..
TBPAR20H-OH	50	20	20	100	19.5	6.8	-	-	20	1°	2°	75	-3.4	Rc1/8	TBPA..

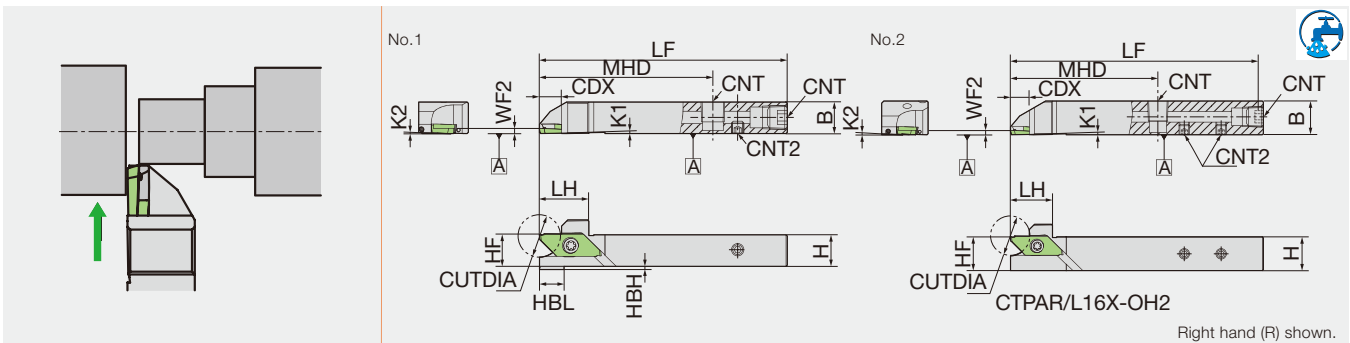
### SPARE PARTS



Designation	Clamp screw	Screw (for CNT)	Wrench (for Clamp screw)
TBPAR**-OH	LRIS-4*12PW	SPR1/8	CLR-15S

## CTPAR/L-OH2

Screw-on toolholder for back turning, with high pressure coolant capability



Inch	CUTDIA	H	B	LF	LH	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert	Figure
CTPAR08H-IN-OH2	0.630	0.500	0.500	3.937	0.787	0.051	0.394	0.500	1°	2°	2.756	0.079	NPT1/8	M5	CTPA.. TBPA..	1
CTPAR10X-IN-OH2	0.630	0.625	0.625	4.724	0.787	-	-	0.625	1°	2°	2.756	0.079	NPT1/8	M5	CTPA.. TBPA..	2

Metric	CUTDIA	H	B	LF	LH	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert	Figure
CTPAR12H-OH2	16	12	12	100	19.5	2	10	12	1°	2°	70	2	Rc1/8	M5	CTPA.. TBPA..	1
CTPAR16X-OH2	16	16	16	120	19.5	-	-	16	1°	2°	70	2	Rc1/8	M5	CTPA.. TBPA..	2
CTPAL12H-OH2	16	12	12	100	19.5	2	10	12	1°	2°	70	2	Rc1/8	M5	CTPA.. TBPA..	1
CTPAL16X-OH2	16	16	16	120	19.5	-	-	16	1°	2°	70	2	Rc1/8	M5	CTPA.. TBPA..	2

### SPARE PARTS

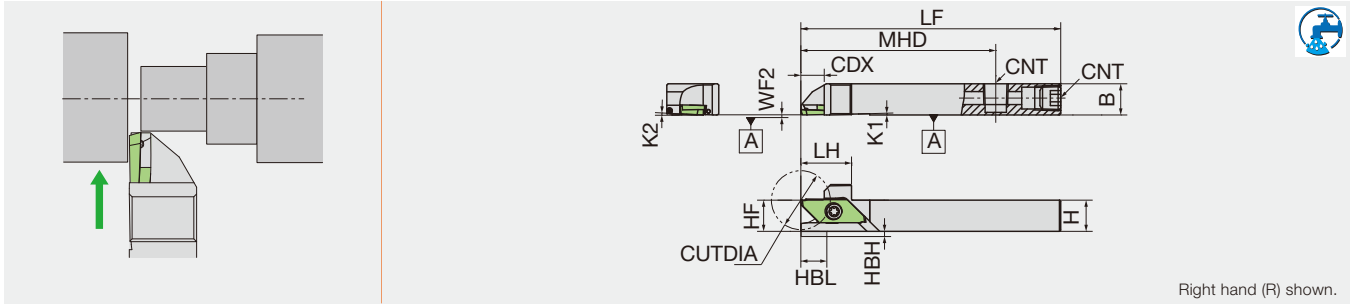


Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
CTPAR08H-IN-OH2	LRIS-4*12PW	SPNPT1/8	SS0505SC	CLR-15S	LW-2.5
CTPAR10X-IN-OH2	LRIS-4*12PW	SPNPT1/8L	SS0505SC	CLR-15S	LW-2.5
CTPAR/L**-OH2	LRIS-4*12PW	SPR1/8	SS0505SC	CLR-15S	LW-2.5

Reference pages : Inserts → 3-118 -

## CTPA-OH

Screw-on toolholder for back turning, with high pressure coolant capability



Inch	CUTDIA	H	B	LF	LH	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	Insert
CTPAR06H-IN-OH	0.630	0.375	0.375	3.937	0.768	0.176	0.787	0.375	1°	2°	2.953	0	M6*1	CTPA.. TBPA..
CTPAR10H-IN-OH	0.630	0.625	0.625	3.937	0.768	-	-	0.625	1°	2°	2.953	0	NPT1/8	CTPA.. TBPA..
Metric	CUTDIA	H	B	LF	LH	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	Insert
CTPAL12H-OH	16	12	12	100	19.5	2	10	12	1°	2°	75	0	Rc1/8	CTPA.. TBPA..
CTPAL16H-OH	16	16	16	100	19.5	-	-	16	1°	2°	75	0	Rc1/8	CTPA.. TBPA..

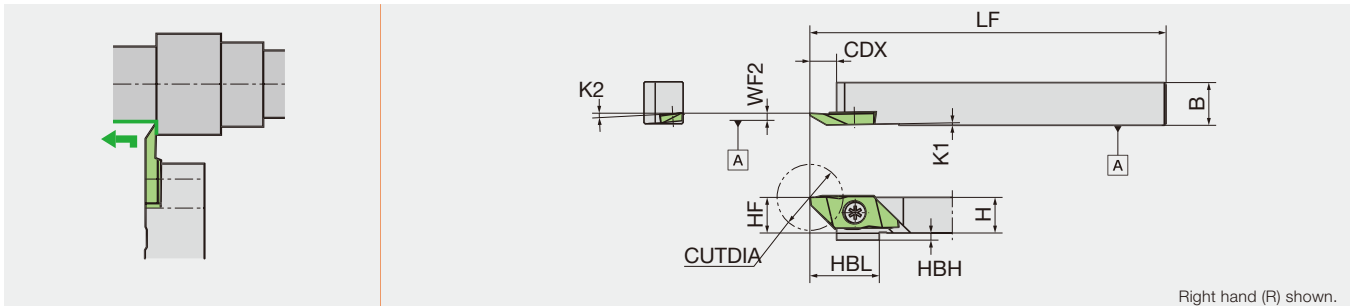
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CTPAR**-IN-OH	LRIS-4*12PW	CLR-15S
CTPAL**-OH	LRIS-4*12PW	CLR-15S

## CTPAR/L

Screw-on toolholder for back turning



Inch	CUTDIA	H	B	LF	CDX	HBH	HBL	HF	K1	K2	WF2	Insert
CTPAR06-IN	0.630	0.375	0.375	4.724	0.295	0.079	0.768	0.375	1°	2°	0	CTPA.. TBPA..
CTPAR08-IN	0.630	0.500	0.500	4.724	0.295	-	-	0.500	1°	2°	0	CTPA.. TBPA..
CTPAR10-IN	0.630	0.625	0.625	4.724	0.295	-	-	0.625	1°	2°	0	CTPA.. TBPA..
CTPAL06-IN	0.630	0.375	0.375	4.724	0.295	0.079	0.768	0.375	1°	2°	0	CTPA.. TBPA..
CTPAL08-IN	0.630	0.500	0.500	4.724	0.295	-	-	0.500	1°	2°	0	CTPA.. TBPA..
CTPAL10-IN	0.630	0.625	0.625	4.724	0.295	-	-	0.625	1°	2°	0	CTPA.. TBPA..
Metric	CUTDIA	H	B	LF	CDX	HBH	HBL	HF	K1	K2	WF2	Insert
CTPAR10	16	10	10	120	7.5	2	19.5	10	1°	2°	0	CTPA.. TBPA..
CTPAR12	16	12	12	120	7.5	-	-	12	1°	2°	0	CTPA.. TBPA..
CTPAR12GX	16	12	12	85	7.5	-	-	12	1°	2°	0	CTPA.. TBPA..
CTPAR16	16	16	16	120	7.5	-	-	16	1°	2°	0	CTPA.. TBPA..
CTPAR20F	16	20	20	80	7.5	-	-	20	1°	2°	0	CTPA.. TBPA..
CTPAL10	16	10	10	120	7.5	2	19.5	10	1°	2°	0	CTPA.. TBPA..
CTPAL12	16	12	12	120	7.5	-	-	12	1°	2°	0	CTPA.. TBPA..
CTPAL12GX	16	12	12	85	7.5	-	-	12	1°	2°	0	CTPA.. TBPA..
CTPAL16	16	16	16	120	7.5	-	-	16	1°	2°	0	CTPA.. TBPA..
CTPAL20F	16	20	20	80	7.5	-	-	20	1°	2°	0	CTPA.. TBPA..

### SPARE PARTS



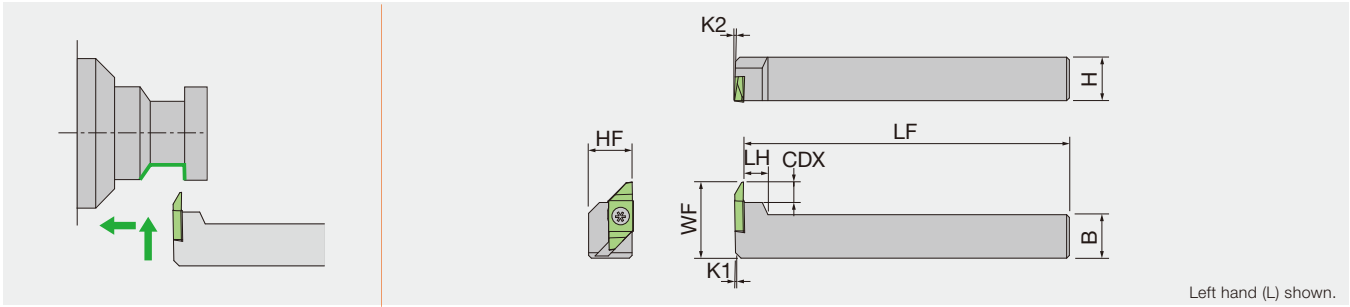
Designation	Clamp screw	Wrench (for Clamp screw)
CTPAR/L06-IN, CTPAR/L10	LRIS-4*10PW	CLR-15S
CTPAR/L08-IN, CTPAR/L10-IN, CTPAR/L112**	LRIS-4*12PW	CLR-15S
CTPAR/L116	LRIS-4*12PW	CLR-15S
CTPAR/L120F	LRIS-4*10	LLR-25S

Reference pages : Inserts → 3-118 -

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

# CH-TBPAL

Screw-on toolholder for back turning for horizontal gang style tool post



Left hand (L) shown.

Metric	H	B	LF	LH	CDX	HF	K1	K2	WF	Insert
CH-TBPAL16	16	16	120	9	7.5	16	1°	2°	28	TBPA..
CH-TBPAL20	20	20	120	9	7.5	20	1°	2°	32	TBPA..

NOTE: Use a right-handed insert.

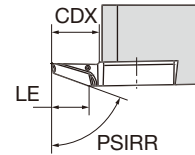
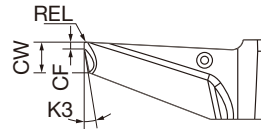
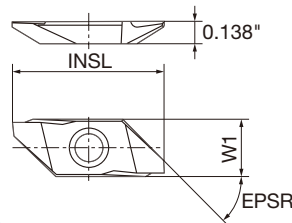
## SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CH-TBPAL**	LRIS-4*10	LLR-25S

## INSERT

### TBPA with BM-Chipbreaker



Right hand (R) shown.

P	Steel	★	☆	☆
M	Stainless	☆	★	☆
N	Non-ferrous	☆	☆	★
S	Superalloys	★	☆	☆
H	Hard materials	★	☆	☆

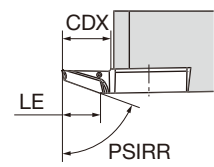
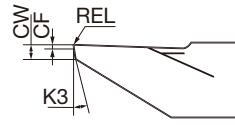
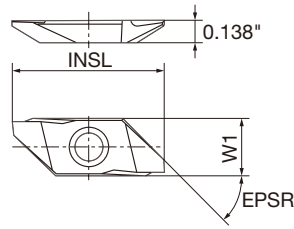
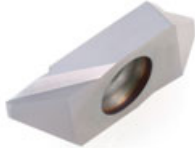
★ : First choice  
☆ : Second choice

Designation	HAND	Coated			LE (in)	CDX (in)	INSL (in)	W1 (in)	EPSR	CF (in)	CW (in)	K3	PSIRR	REL (in)
		DM4	ST4	TM4										
TBPA70FR05-BM	R	●	●	●	0.217	0.256	0.984	0.370	45°	0.012	0.053	12°	70°	0.002
TBPA70FR10M-BM	R	●	●	●	0.217	0.256	0.984	0.370	45°	0.012	0.053	12°	70°	0.003
TBPA70FR20M-BM	R	●	●	●	0.217	0.256	0.984	0.370	45°	0.012	0.053	12°	70°	0.007

● : Line up



## TBPA with Chipbreaker



Right hand (R) shown.

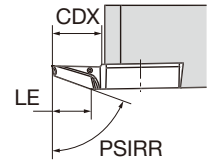
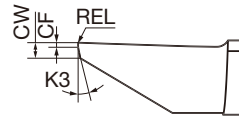
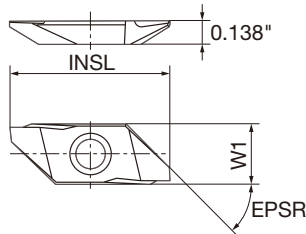
P	Steel	★	☆	★	☆
M	Stainless	☆	★	☆	☆
N	Non-ferrous	☆	★	☆	★
S	Superalloys	☆	★	☆	★
H	Hard materials	★	☆	☆	☆

★ : First choice  
☆ : Second choice

Designation	HAND	Coated				Mirror finish	LE (in)	CDX (in)	INSL (in)	W1 (in)	EPSR	CF (in)	CW (in)	K3	PSIRR	REL (in)
		QM3	DT4	VM1	ZM3											
TBPA60FR10M	R	●				M	0.177	0.209	0.984	0.370	45°	0.012	0.028	15°	60°	0.003
TBPA60FRPB10	R			●	●	M	0.177	0.209	0.984	0.370	45°	0.012	0.028	15°	60°	0.004
TBPA60FRPB10M	R		●	●		M	0.177	0.209	0.984	0.370	45°	0.012	0.028	15°	60°	0.003
TBPA60FRPB20M	R		●	●		M	0.177	0.209	0.984	0.370	45°	0.012	0.028	15°	60°	0.007
TBPA60FRVB	R		●	●	●	M	0.177	0.209	0.984	0.370	45°	0.008	0.028	15°	60°	0
TBPA60FLPB10	L				●	M	0.177	0.209	0.984	0.370	45°	0.012	0.028	15°	60°	0.004
TBPA60FLVB	L				●	M	0.177	0.209	0.984	0.370	45°	0.008	0.028	15°	60°	0

● : Line up

## TBPA-V without Chipbreaker



Right hand (R) shown.

P	Steel	★	★
M	Stainless	☆	★
N	Non-ferrous	☆	★
S	Superalloys	☆	★
H	Hard materials	☆	☆

★ : First choice  
☆ : Second choice

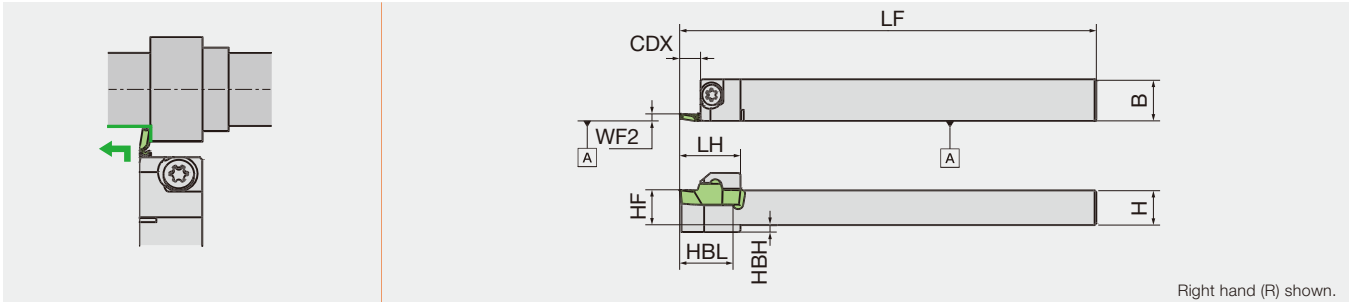
Designation	HAND	Coated		Mirror finish	LE	CDX (in)	INSL (in)	W1 (in)	EPSR	CF (in)	CW (in)	K3	PSIRR	REL (in)
		VM1	ZM3											
TBPA60FRV	R	●	●	M	0.248	0.268	0.984	0.370	45°	0.008	0.028	15°	60°	0
TBPA60FLV	L		●	M	0.248	0.268	0.984	0.370	45°	0.008	0.028	15°	60°	0

● : Line up

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

## TBDPR/L

Screw-on toolholder for back turning



Right hand (R) shown.

Inch	H	B	LF	LH	CDX	HBH	HBL	HF	WF2	Insert
TBDPR06-IN	0.375	0.472	4.724	0.571	0.118	0.079	0.571	0.375	0.081	TBDP..
TBDPR08-IN	0.500	0.500	4.724	0.689	0.197	-	-	0.500	0.081	TBDP..
TBDPR10-IN	0.625	0.625	4.724	0.768	0.197	-	-	0.625	0.081	TBDP..
Metric	H	B	LF	LH	CDX	HBH	HBL	HF	WF2	Insert
TBDPR1012	10	12	120	15	3	2	14.5	10	2.05	TBDP..
TBDPR1012H	10	12	100	15	3	2	14.5	10	2.05	TBDP..
TBDPR12	12	12	120	18	5	-	-	12	2.05	TBDP..
TBDPR16	16	16	120	19.5	5	-	-	16	2.05	TBDP..
TBDPR20	20	20	120	19.5	5	-	-	20	2.05	TBDP..
TBDPL1012	10	12	120	15	3	2	14.5	10	2.05	TBDP..
TBDPL12	12	12	120	18	5	-	-	12	2.05	TBDP..
TBDPL16	16	16	120	19.5	5	-	-	16	2.05	TBDP..

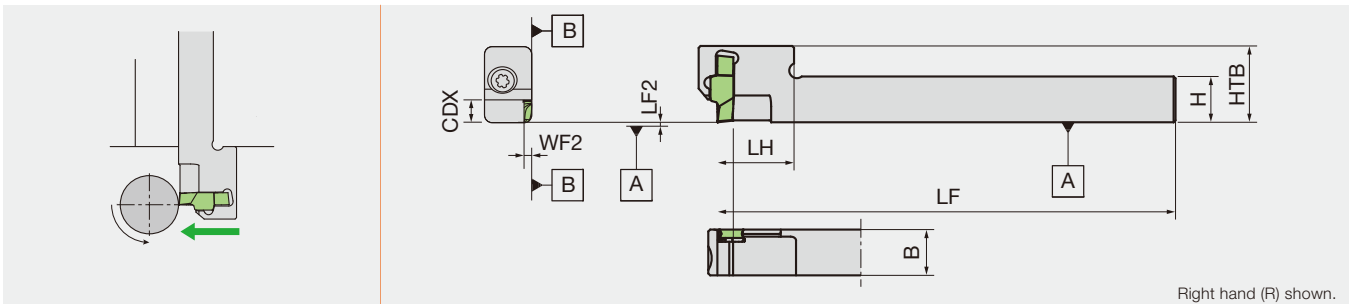
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
TBDPR**	LRIS-4*12	LLR-25S

## Y-TBDPR

Screw-on Y-axis turning toolholder for back turning



Right hand (R) shown.

Metric	H	B	LF	LH	CDX	HTB	LF2	WF2	Insert
Y-TBDPR12S	12	12	120	20	5	20	0	2.05	TBDP..

NOTE: Use a right-handed (R) insert.

NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter.

→10-1

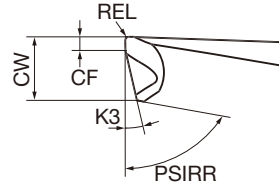
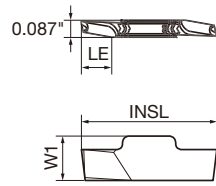
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
Y-TBDPR12S	LRIS-4*12	LLR-25S

# INSERT

## TBDP



Right hand (R) shown.

<b>P</b>	Steel		☆	★	★
<b>M</b>	Stainless	★	★	☆	☆
<b>N</b>	Non-ferrous				★
<b>S</b>	Superalloys		★	☆	
<b>H</b>	Hard materials		☆	★	

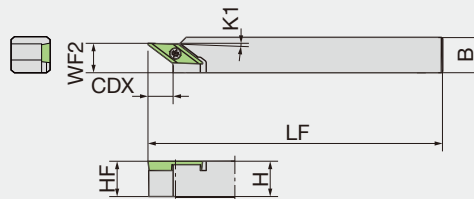
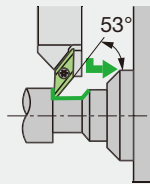
★ : First choice  
☆ : Second choice

Designation	HAND	Coated				LE (in)	INSL (in)	W1 (in)	CF (in)	CW (in)	K3	PSIRR	REL (in)
		ST4	DM4	QM3	TM4								
TBDP22005R	R	●	●	●	●	0.138	0.688	0.236	0.012	0.055	13°	80°	0.002
TBDP2201MR	R	●	●	●	●	0.138	0.688	0.236	0.012	0.055	13°	80°	0.003
TBDP2202MR	R	●	●	●	●	0.138	0.688	0.236	0.012	0.055	13°	80°	0.007

● : Line up

## TBVCR-F

Screw-on toolholder for back turning



Right hand (R) shown.

Inch	H	B	LF	CDX	HF	KAPR	K1	WF2	Insert	
TBVCR08-F10-IN	0.500	0.500	4.724	0.335	0.500	53°	2°	0.394	TBVC11FR..	VC**1103...
Metric	H	B	LF	CDX	HF	KAPR	K1	WF2	Insert	
TBVCR10-F10	10	10	120	8.5	10	53°	2°	10	TBVC11FR..	VC**1103...
TBVCR12-F10	12	12	120	8.5	12	53°	2°	10	TBVC11FR..	VC**1103...
TBVCR12GX-F10	12	12	85	8.5	12	53°	2°	10	TBVC11FR..	VC**1103...
TBVCR16-F10	16	16	120	8.5	16	53°	2°	10	TBVC11FR..	VC**1103...
TBVCR16H-F10	16	16	100	8.5	16	53°	2°	10	TBVC11FR..	VC**1103...
TBVCR20F-F10	20	20	80	8.5	20	53°	2°	10	TBVC11FR..	VC**1103...

### SPARE PARTS



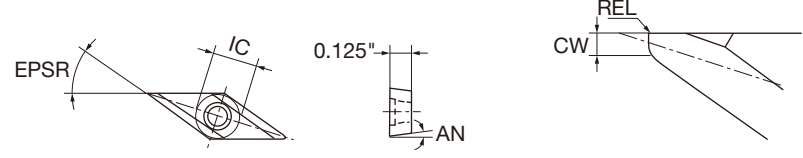
Designation	Clamp screw	Wrench (for Clamp screw)
TBVCR**	LRIS-2.5*7	CLR-15S

Reference pages : Inserts → 3-118, 2-50 -, PCD → 2-127

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

**INSERT**

**TBVC..**



Right hand (R) shown.

<b>P</b>	Steel	★	★
<b>M</b>	Stainless	☆	★
<b>N</b>	Non-ferrous		★
<b>S</b>	Superalloys		
<b>H</b>	Hard materials		

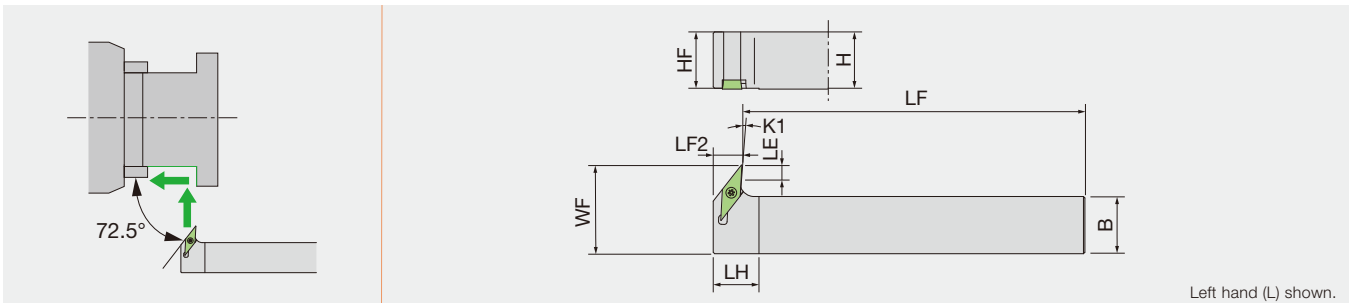
★ : First choice  
☆ : Second choice

Designation	HAND	Coated		IC (in)	AN	EPSR	CW (in)	REL (in)
		VM1	ZM3					
TBVC11FR05U	R		●	0.250	7°	35°	0.020	0.002
TBVC11FR10S	R		●	0.250	7°	35°	0.020	0.004
TBVC11FR10U	R	●	●	0..250	7°	35°	0.020	0.004

● : Line up

**CH-SVXCL**

Screw-on toolholder for back turning for horizontal gang style tool post



Left hand (L) shown.

Metric	H	B	LF	LH	HF	K1	LE	LF2	WF	Insert
CH-SVXCL1616X11	16	16	120	16	16	3°	7	10	27	VC**1103...
CH-SVXCL2020X11	20	20	120	16	20	3°	7	10	31	VC**1103...

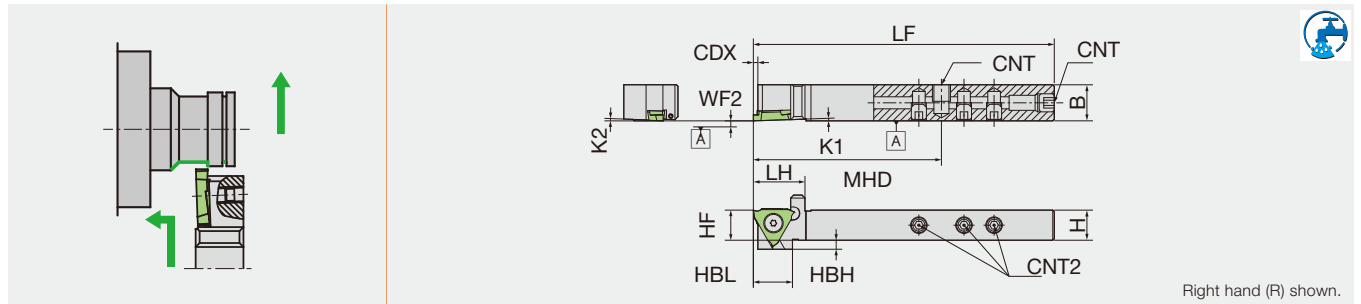
**SPARE PARTS**



Designation	Clamp screw	Wrench (for Clamp screw)
CH-SVXCL**X11	LRIS-2.5*7	CLR-15S

## GTTR-OH3

Screw-on toolholder for back turning, with high pressure coolant capability



Inch	H	B	LF	LH	CDX	CW	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
GTTR10XB-IN-OH3	0.625	0.625	4.724	0.787	0.063	-	-	-	0.625	2°	2°	3.100	0	NPT1/8	M5	GT**32.. TBMH32..
Metric	H	B	LF	LH	CDX	CW	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
GTTR1012H00-OH3	10	12	100	17.15	3	0.3 - 3	3	13	10	2°	2°	62.5	0	Rc1/8	M5	GT**32.. TBMH32..
GTTR16X00-OH3	16	16	120	20	3.65	0.3 - 3	-	-	16	2°	2°	78.75	0	Rc1/8	M5	GT**32.. TBMH32..

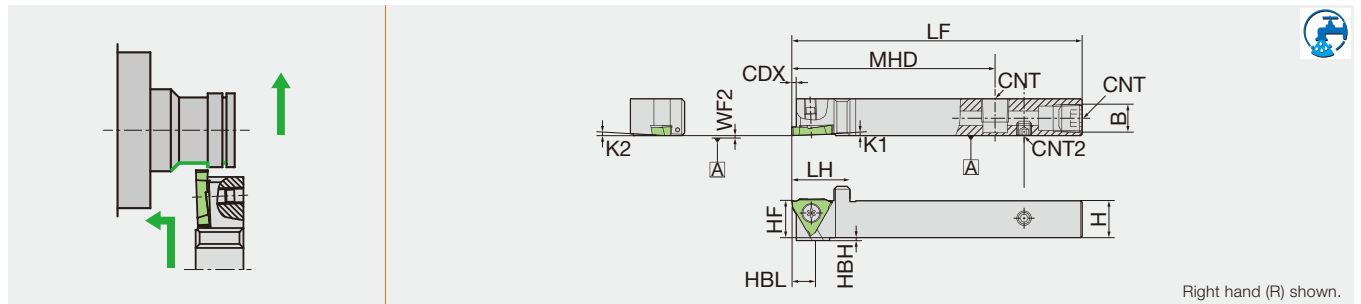
NOTE: Reference Chart of OH3 Hole Position → 10-1

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	SCREW (FOR CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
GTTR10XB-IN-OH3	LR-S-4*10PW	SPNPT1/8	SS0505SC	CLR-15S	LW-2.5
GTTR1012H00-OH3	LR-S-4*10PW	SS0605SC	SS0505SC	CLR-15S	LW-2.5
GTTR16X00-OH3	LR-S-4*10PW	SPR1/8	SS0505SC	CLR-15S	LW-2.5

## GTTR-OH2

Screw-on toolholder for back turning, with high pressure coolant capability



Inch	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
GTTR08HA-IN-OH2	0.500	0.500	3.937	0.787	0.071	0.039	0.512	0.500	2°	2°	2.756	0	NPT1/8	M5	GT**32.. TBMH32..
GTTR08HB-IN-OH2	0.500	0.500	3.937	0.787	0.106	0.039	0.512	0.500	2°	2°	2.756	0	NPT1/8	M5	GT**32.. TBMH32..
GTTR10XA-IN-OH2	0.625	0.625	3.937	0.787	0.071	-	-	0.625	2°	2°	2.756	0	NPT1/8	M5	GT**32.. TBMH32..
GTTR10XB-IN-OH2	0.625	0.625	4.724	0.787	0.106	-	-	0.625	2°	2°	2.756	0	NPT1/8	M5	GT**32.. TBMH32..
Metric	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
GTTR12H00-OH2	12	12	100	19.5	1.6	1	13	12	2°	2°	70	0	Rc1/8	M5	GT**32.. TBMH32..
GTTR16X00-OH2	16	16	120	19.5	1.6	-	-	16	2°	2°	70	0	Rc1/8	M5	GT**32.. TBMH32..

### SPARE PARTS

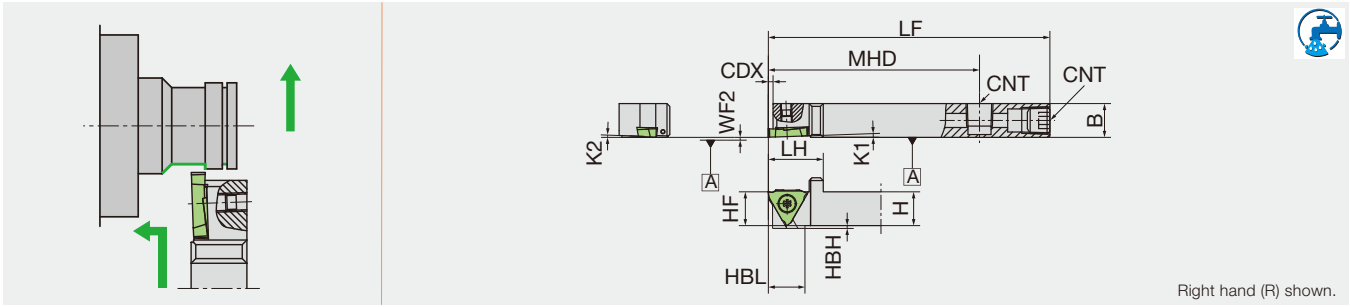
Designation	Clamp screw	Screw (for CNT)	SCREW (FOR CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
GTTR**H/X*-IN-OH2, GTTR**H00-OH2	LR-S-4*10PW	SPR1/8	SS0505SC	CLR-15S	LW-2.5

Reference pages : Inserts → 3-128

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

# GTTR-OH

Screw-on toolholder for back turning, with high pressure coolant capability



Right hand (R) shown.

Inch	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	Insert	
GTTR10HA-IN-OH	0.625	0.625	3.937	0.768	0.071	-	-	0.625	2°	2°	2.953	0	NPT1/8	GT**32..	TBMH32..
GTTR10HB-IN-OH	0.625	0.625	4.724	0.768	0.106	-	-	0.625	2°	2°	2.953	0	NPT1/8	GT**32..	TBMH32..
Metric	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	Insert	
GTTR1012H00-OH	10	12	100	19.5	1.6	1	13	10	2°	2°	70	0	M6*1	GT**32..	TBMH32..
GTTR12H00-OH	12	12	100	19.5	1.6	1	13	12	2°	2°	70	0	Rc1/8	GT**32..	TBMH32..
GTTR16H00-OH	16	16	100	19.5	1.6	-	-	16	2°	2°	70	0	Rc1/8	GT**32..	TBMH32..

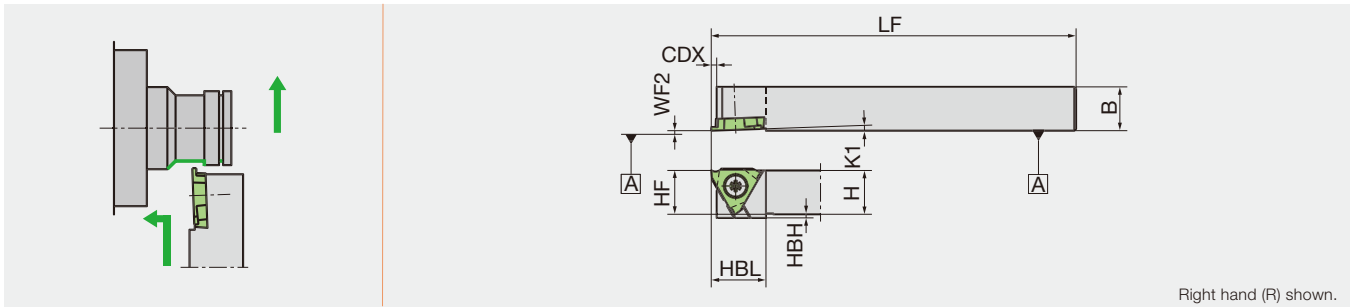
## SPARE PARTS



Designation	Clamp screw	Screw (for CNT)	Wrench (for Clamp screw)
GTTR10HA-IN-OH	LR-S-4*10PW	SPNPT1/8	CLR-15S
GTTR10HB-IN-OH	LR-S-4*10PW	SPNPT1/8	CLR-15S
GTTR1012H00-OH	LR-S-4*10PW	SS0605SC	CLR-15S
GTTR12H00-OH	LR-S-4*10PW	SPR1/8	CLR-15S
GTTR16H00-OH	LR-S-4*10PW	SPR1/8	CLR-15S

# GTTR

## Screw-on toolholder for back turning



Right hand (R) shown.

Inch	H	B	LF	CDX	HBH	HBL	HF	K1	K2	WF2	Insert	
GTTR06A-IN	0.375	0.375	4.724	0.071	0.118	0.591	0.375	2°	2°	0	GT**32..	TBMH32..
GTTR06B-IN	0.375	0.375	4.724	0.106	0.118	0.591	0.375	2°	2°	0	GT**32..	TBMH32..
GTTR08A-IN	0.500	0.500	4.724	0.071	0.039	0.591	0.500	2°	2°	0	GT**32..	TBMH32..
GTTR08B-IN	0.500	0.500	4.724	0.106	0.039	0.591	0.500	2°	2°	0	GT**32..	TBMH32..
GTTR10A-IN	0.625	0.625	4.724	0.071	-	-	0.625	2°	2°	0	GT**32..	TBMH32..
GTTR10B-IN	0.625	0.625	4.724	0.106	-	-	0.625	2°	2°	0	GT**32..	TBMH32..
GTTR12A-IN	0.750	0.750	4.724	0.071	-	-	0.750	2°	2°	0	GT**32..	TBMH32..
GTTR12B-IN	0.750	0.750	4.724	0.106	-	-	0.750	2°	2°	0	GT**32..	TBMH32..
GTTL06A-IN	0.375	0.375	4.724	0.071	0.118	0.591	0.375	2°	2°	0	GT**32..	TBMH32..
GTTL06B-IN	0.375	0.375	4.724	0.106	0.118	0.591	0.375	2°	2°	0	GT**32..	TBMH32..
GTTL08A-IN	0.500	0.500	4.724	0.071	0.039	0.591	0.500	2°	2°	0	GT**32..	TBMH32..
GTTL08B-IN	0.500	0.500	4.724	0.106	0.039	0.591	0.500	2°	2°	0	GT**32..	TBMH32..
GTTL10A-IN	0.625	0.625	4.724	0.071	-	-	0.625	2°	2°	0	GT**32..	TBMH32..
GTTL10B-IN	0.625	0.625	4.724	0.106	-	-	0.625	2°	2°	0	GT**32..	TBMH32..
Metric	H	B	LF	CDX	HBH	HBL	HF	K1	K2	WF2	Insert	
GTTR08F00	8	8	80	1.6	5	15	8	2°	2°	0	GT**32..	TBMH32..
GTTR08K00	8	8	120	1.6	5	15	8	2°	2°	0	GT**32..	TBMH32..
GTTR10F00	10	10	80	1.6	3	15	10	2°	2°	0	GT**32..	TBMH32..
GTTR10F15	10	10	80	2.7	3	15	10	2°	2°	0	GT**32..	TBMH32..
GTTR10F25	10	10	80	2.7	3	15	10	2°	2°	0	GT**32..	TBMH32..
GTTR10K00	10	10	120	1.6	3	15	10	2°	2°	0	GT**32..	TBMH32..
GTTR10K15	10	10	120	2.7	3	15	10	2°	2°	0	GT**32..	TBMH32..
GTTR10K25	10	10	120	2.7	3	15	10	2°	2°	0	GT**32..	TBMH32..
GTTR12F00	12	12	80	1.6	1	15	12	2°	2°	0	GT**32..	TBMH32..
GTTR12F15	12	12	80	2.7	1	15	12	2°	2°	0	GT**32..	TBMH32..
GTTR12F25	12	12	80	2.7	1	15	12	2°	2°	0	GT**32..	TBMH32..
GTTR12K00	12	12	120	1.6	1	15	12	2°	2°	0	GT**32..	TBMH32..
GTTR12K15	12	12	120	2.7	1	15	12	2°	2°	0	GT**32..	TBMH32..
GTTR12K25	12	12	120	2.7	1	15	12	2°	2°	0	GT**32..	TBMH32..
GTTR16H00	16	16	100	1.6	-	-	16	2°	2°	0	GT**32..	TBMH32..
GTTR16H15	16	16	100	2.7	-	-	16	2°	2°	0	GT**32..	TBMH32..
GTTR16H25	16	16	100	2.7	-	-	16	2°	2°	0	GT**32..	TBMH32..
GTTR16K00	16	16	120	1.6	-	-	16	2°	2°	0	GT**32..	TBMH32..
GTTR16K15	16	16	120	2.7	-	-	16	2°	2°	0	GT**32..	TBMH32..
GTTR16K25	16	16	120	2.7	-	-	16	2°	2°	0	GT**32..	TBMH32..
GTTR20K00	20	20	125	2.7	-	-	20	2°	2°	0	GT**32..	TBMH32..
GTTR25M00	25	25	150	2.7	-	-	25	2°	2°	0	GT**32..	TBMH32..

### SPARE PARTS



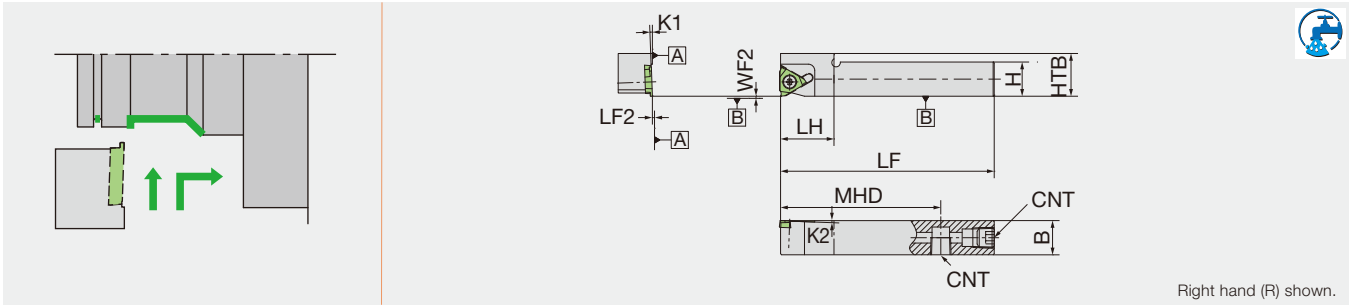
Designation	Clamp screw	Wrench (for Clamp screw)
GTTR**	LR-S-4*10PW	CLR-15S

Reference pages : Inserts → 3-128

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

## Y-GTTR-OH

Screw-on Y-axis turning toolholder for back turning, with high pressure coolant capability



Right hand (R) shown.

Inch	H	B	LF	LH	HTB	K1	K2	LF2	MHD	WF2	CNT	Insert	
Y-GTTR08H-IN-OH	0.500	0.500	3.937	0.984	0.787	2°	2°	0	2.953	0	NPT1/8	GT**32..	TBMH32..
Y-GTTR08H-IN-OH2	0.500	0.500	3.937	0.984	0.787	2°	2°	0	2.756	0	NPT1/8	GT**32..	TBMH32..
Metric	H	B	LF	LH	HTB	K1	K2	LF2	MHD	WF2	CNT	Insert	
Y-GTTR12H00S-OH	12	12	100	20	20	2°	2°	0	75	0	Rc1/8	GT**32..	TBMH32..
Y-GTTR16H00-OH	16	16	100	25	20	2°	2°	0	75	0	Rc1/8	GT**32..	TBMH32..

NOTE: Use a right-handed (R) insert.

NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter.

→10-1

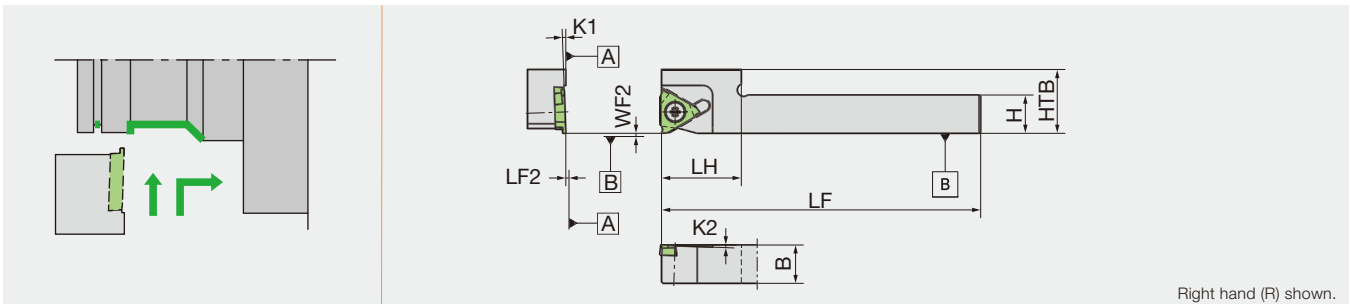
### SPARE PARTS



Designation	Clamp screw	Screw (for CNT)	Wrench (for Clamp screw)
Y-GTTR**H-IN-OH	LR-S-4*10PW	SPNPT1/8	CLR-15S
Y-GTTR**-OH	LR-S-4*10PW	SPR1/8	CLR-15S

## Y-GTTR

Screw-on Y-axis turning toolholder for back turning



Right hand (R) shown.

Inch	H	B	LF	LH	HTB	K1	K2	LF2	WF2	Insert	
Y-GTTR06-IN	0.375	0.375	4.724	0.984	0.787	2°	2°	0	0	GT**32..	TBMH32..
Y-GTTR08-IN	0.500	0.500	4.724	0.984	0.787	2°	2°	0	0	GT**32..	TBMH32..
Y-GTTR10-IN	0.625	0.625	4.724	0.984	0.787	2°	2°	0	0	GT**32..	TBMH32..
Metric	H	B	LF	LH	HTB	K1	K2	LF2	WF2	Insert	
Y-GTTR10MS	10	10	120	22	20	2°	2°	0	0	GT**32..	TBMH32..
Y-GTTR10S	10	10	120	20	20	2°	2°	0	0	GT**32..	TBMH32..
Y-GTTR12MS	12	12	120	22	20	2°	2°	0	0	GT**32..	TBMH32..
Y-GTTR12S	12	12	120	20	20	2°	2°	0	0	GT**32..	TBMH32..

NOTE: Use a right-handed (R) insert.

NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter.

→10-1

### SPARE PARTS



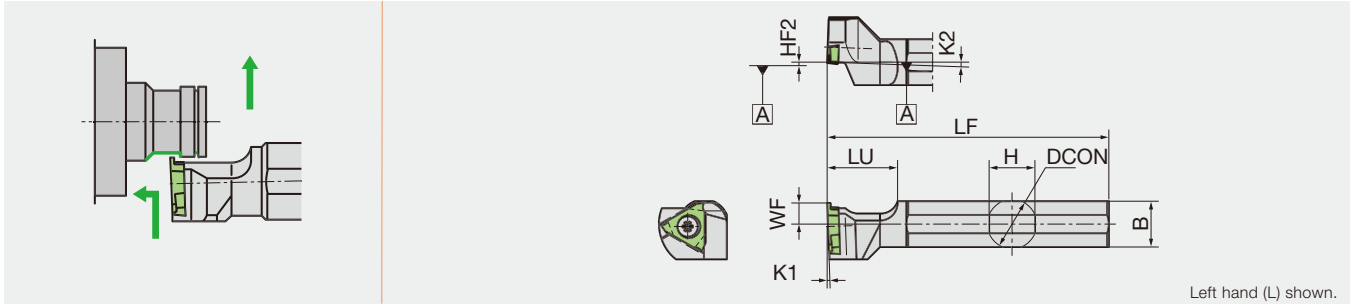
Designation	Clamp screw	Wrench (for Clamp screw)
Y-GTTR**	LR-S-4*10PW	CLR-15S

Reference pages : Inserts → 3-128



## DS-GTTL

Screw-on round-shank toolholder for back turning



Metric	H	B	LF	DCON	HF2	K1	K2	LU	WF	Insert
DS-GTTL14F	13	13	80	14	0	2°	2°	19	6	GT**32.. TBMH32..
DS-GTTL15H	15	15	100	15.875	0	2°	2°	19	6	GT**32.. TBMH32..
DS-GTTL16X	15	15	95	16	0	2°	2°	19	6	GT**32.. TBMH32..
DS-GTTL19	18	18	120	19.05	0	2°	2°	19	6	GT**32.. TBMH32..
DS-GTTL20	19	19	120	20	0	2°	2°	19	6	GT**32.. TBMH32..
DS-GTTL22	21	21	120	22	0	2°	2°	19	6	GT**32.. TBMH32..
DS-GTTL25	24	24	120	25.4	0	2°	2°	19	10	GT**32.. TBMH32..
DS-GTTL25-MET	24	24	150	25	0	2°	2°	19	10	GT**32.. TBMH32..
DS-GTTL32	30	30	150	32	0	2°	2°	19	10	GT**32.. TBMH32..

NOTE: Use a right-handed (R) insert.

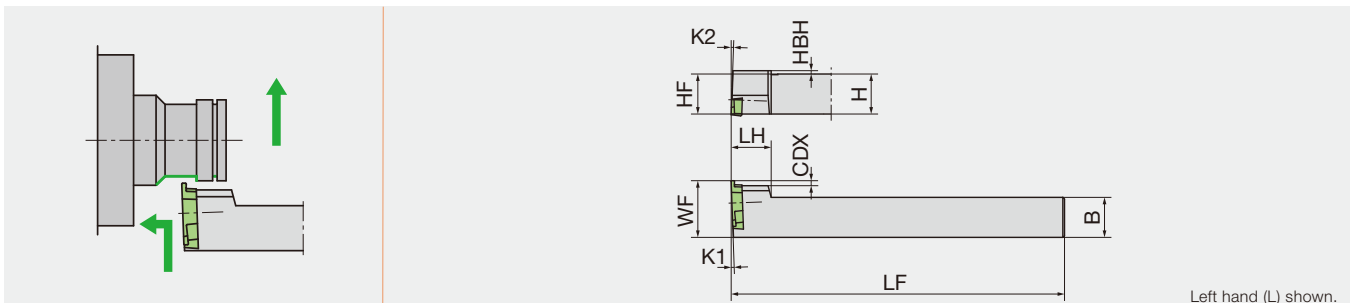
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
DS-GTTL**	LR-S-4*9	RLR-20S

## CH-GTTL

Screw-on toolholder for back turning for horizontal gang style tool post



Metric	H	B	LF	LH	CDX	HBH	HF	K1	K2	WF	Insert
CH-GTTL10H00	10	10	100	12	1.5	3	10	2°	2°	15	GT**32.. TBMH32..
CH-GTTL12H00	12	12	100	12	1.5	1	12	2°	2°	17	GT**32.. TBMH32..
CH-GTTL16H00	16	16	100	12	1.5	-	16	2°	2°	21	GT**32.. TBMH32..

NOTE: Use a right-handed (R) insert.

### SPARE PARTS

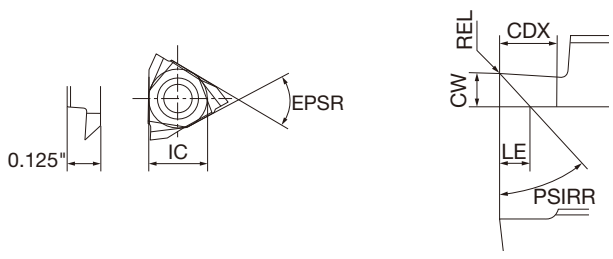


Designation	Clamp screw	Wrench (for Clamp screw)
CH-GTTL**H00	LR-S-4*9	RLR-20S

Reference pages : Inserts → 3-128

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

**INSERT**  
**TBMH with Chipbreaker**



<b>P</b>	Steel	★
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	★
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice

Right hand (R) shown.

Designation	HAND	Coated		LE (in)	CDX (in)	IC (in)	EPSR	CW (in)	PSIRR	REL (in)
		ZM3								
TBMH32100R05-22	R	●		0.012	0.071	0.375	60°	0.039	22°	0.002
TBMH32100R05-45	R	●		0.035	0.071	0.375	60°	0.039	45°	0.002
TBMH32150R05-22	R	●		0.020	0.106	0.375	60°	0.059	22°	0.002
TBMH32150R05-45	R	●		0.051	0.102	0.375	60°	0.059	45°	0.002

● : Line up

# Technical Guide

## MINIFORCE 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	<b>P</b>	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
	<b>M</b>	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	<b>P</b>	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		
<b>M</b>	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)
<b>P</b>	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
<b>M</b>	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
<b>S</b>	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

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

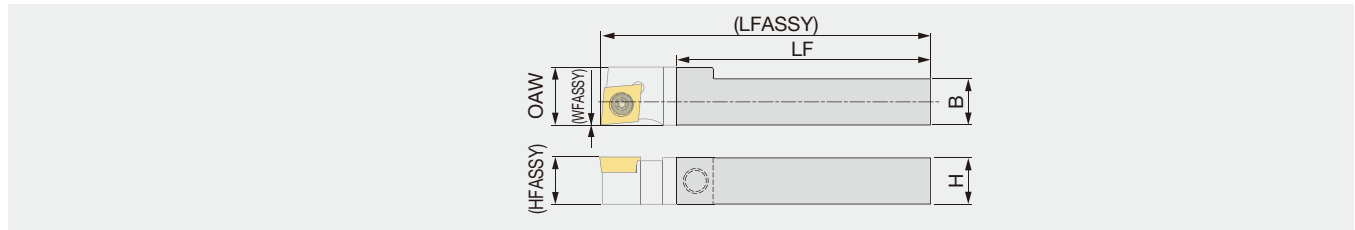
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# ACCESSORY

## MODUMTURN<sup>INI</sup>

### QC-08 and QC-1212

Shank for modular heads

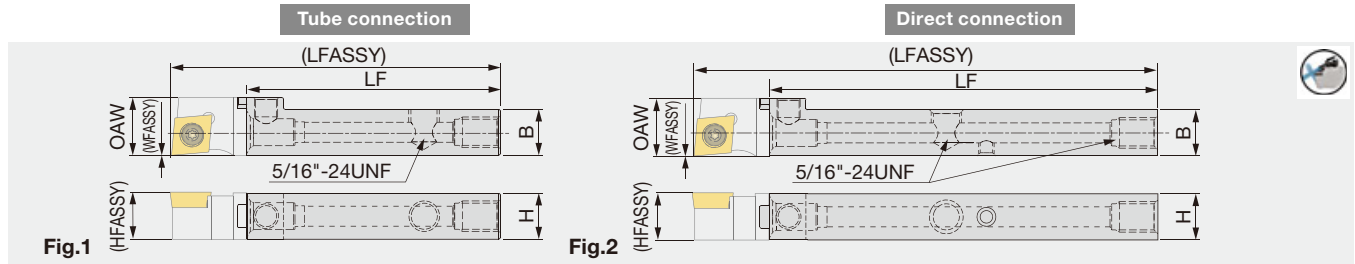


Inch	H	B	WFASSY	LF	OAW	HFASSY	LFASSY <sup>(1)</sup>	Torque
QC-08F	0.500	0.500	0	2.560	0.590	0.500	3.346	2.21
QC-08X	0.500	0.500	0	3.940	0.590	0.500	4.724	2.21
Metric	H	B	WFASSY	LF	OAW	HFASSY	LFASSY <sup>(1)</sup>	Torque*
QC-1212F	12	12	0	65	15	12	85	3
QC-1212X	12	12	0	100	15	12	120	3

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-1012/1212/1616-CHP

Shank for modular heads, with high pressure coolant capability



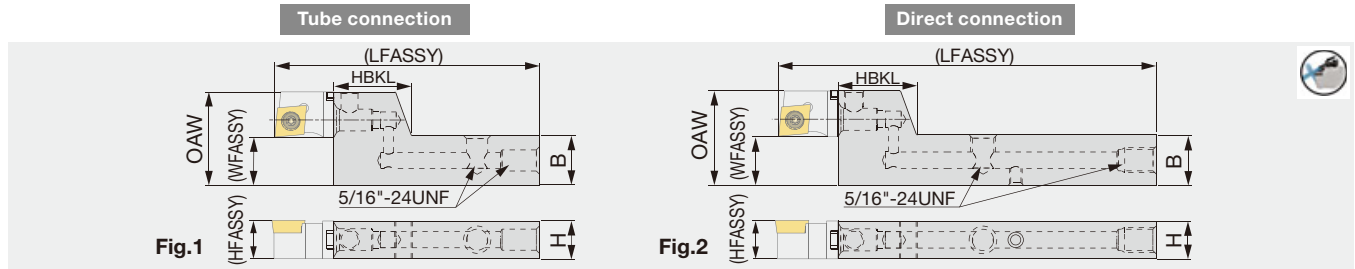
Inch	H	B	LF	WFASSY	OAW	HFASSY	LFASSY <sup>(1)</sup>	Torque*	Fig.
QC-08F-CHP	0.500	0.500	2.559	0	0.591	0.500	3.346	2.21	1
QC-06H-CHP <sup>(*)</sup>	0.375	0.500	3.268	0.512	0.512	0.375	3.937	1.84	2
QC-08X-CHP <sup>(*)</sup>	0.500	0.500	3.937	0	0.591	0.500	4.724	2.21	2
QC-10X-CHP <sup>(*)</sup>	0.625	0.625	3.897	0.787	0.787	0.625	4.724	6.27	2
Metric	H	B	LF	WFASSY	OAW	HFASSY	LFASSY <sup>(1)</sup>	Torque*	Fig.
QC-1212F-CHP	12	12	65	0	15	12	85	3	1
QC-1212X-CHP <sup>(*)</sup>	12	12	100	0	15	12	120	3	2
QC-1012H-CHP <sup>(*)</sup>	10	12	83	0	13	10	100	2.5	2
QC-1616X-CHP <sup>(*)</sup>	16	16	99	0	20	16	120	8.5	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	Clamping screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
QC-08*, QC-1212*	SRM6X0.5-26977	P-3	-	-	-	-
QC-08F-CHP, QC-1212F-CHP	SRM6X0.5-26977	P-3	SR5/16UNF TL360	P-4	-	-
QC-06H-CHP, QC-1012H-CHP	SRM5X0.5	P-2.5	SR 5/16UNF TL360	P-4	SSHM4-4-TB	P-2
QC-08X-CHP, QC-1212X-CHP	SRM6X0.5-26977	P-3	SR5/16UNF TL360	P-4	SSHM4-6-TB	P-2
QC-10X-CHP, QC-1616X-CHP	SRM8X0.5	P-5	SR 5/16UNF TL360	P-4	SSHM4-6-TB	P-2

# QC-1216/1620-F15-CHP

Stepped-head shank for modular heads, with high pressure coolant capability



Inch	H	B	LF	OAW	WFASSY	HFASSY	LFASSY <sup>(1)</sup>	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 (*)	0.500	0.625	3.937	1.220	0.625	0.500	4.724	0.980	2.21	2
QC-10X-F10-CHP (*)	0.625	0.750	3.897	1.413	0.625	0.625	4.724	1.181	6.27	2

Metric	H	B	LF	OAW	WFASSY	HFASSY	LFASSY <sup>(1)</sup>	HBKL	Torque*	Fig.
QC-1216F-F15-CHP	12	16	65	30	15	12	85	25	3	1
QC-1216X-F15-CHP <sup>(1)</sup>	12	16	100	30	15	12	120	25	3	2
QC-1620X-F15-CHP	16	20	99	35	15	16	120	30	8.5	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-08F-F10-CHP, QC-1216F-F15-CHP	SRM6X0.5-26977	P-3	SR5/16UNF TL360	P-4	-	-
QC-08X-F10-CHP, QC-1216X-F15-CHP	SRM6X0.5-26977	P-3	SR5/16UNF TL360	P-4	SSHM4-6-TB	P-2
QC-10X-F10-CHP, QC-1620X-F15-CHP	SRM8X0.5	P-5	SR 5/16UNF TL360	P-4	SSHM4-6-TB	P-2

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

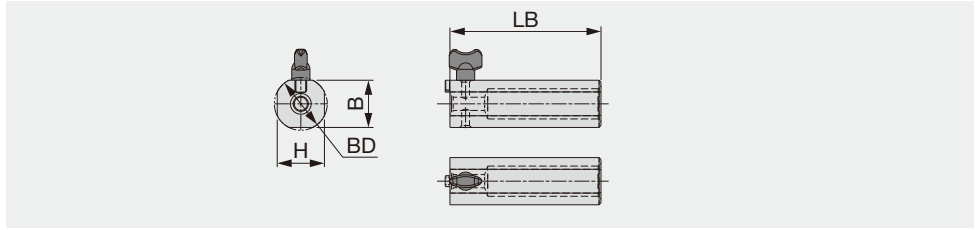
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# ACCESSORY

## MODUMINI TURN

### QC-10/12/16D28EXC

Modular head holder for insert change



Inch	BD	LB	H	B
QC-10D28EXC	1.063	3.150	0.945	0.945
QC-12D28EXC	1.102	3.150	0.984	0.984
QC-16D28EXC	1.102	3.150	0.984	0.984

Metric	BD	LB	H	B
QC-10D28EXC	27	80	24	24
QC-12D28EXC	28	80	25	25
QC-16D28EXC	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



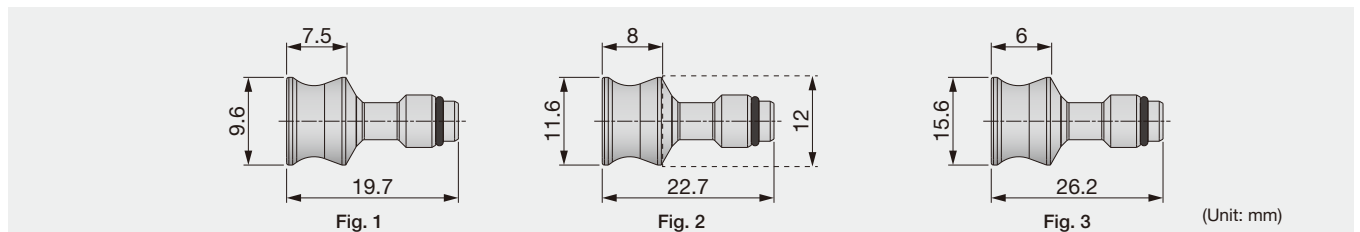
Designation	Fixing screw
QC-10/12/16D28EXC	KNOBM5X10



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.

### QC10/12/16-STOPPER

Protective plug for shank



Metric	Fig.
QC10-STOPPER	1
QC12-STOPPER	2
QC16-STOPPER	3

#### SPARE PARTS



Designation	O-ring
QC10-STOPPER	ORSS-0353.5X1.0NBR70
QC12-STOPPER	ORSS-0454.5X1.0NBR70
QC16-STOPPER	ORSS-0757.5X1.0NBR70



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.



# 4. Internal Toolholders

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# Main products



## TINYM<sup>INI</sup>TURN

Solid boring bar for turning small diameters with high precision



4-44 -



## STREAMJETBAR

Highly rigid toolholders providing good chip evacuation



4-11 -



## MINIF<sup>ORCE</sup>TURN

Economical double-sided inserts with excellent sharpness



WXGU 4-35  
DXGU 4-36 -



## Y-PRO SERIES

Inserts with 25° corner angle for profiling



Shank  $\varnothing 0.500'' - 0.625''$ ,  $\varnothing 12 - 16$  mm

4-22



## Mogul Bar



Anti vibration boring bar and special chipbreaker for good chip evacuation  
-Opposite direction to the feed-

4-16



## LBM Series

Min machining diameter  $\varnothing 1.0$ – with high precision

4-38 -



## STICK DUO



Economical 2 corners solid bar with wide range of choice

4-55



## Shaper DUO



Unique tools for Hexalobular, Hexagon and Square hole process.

7-1

## Sleeve



Wide range of choice -Coolant supply / Adjustable overhang length

4-42, 4-58





# Miniature Internal Turning - Quick Guide

## Positive type (Metric)

### StreamJet-Bar / Mogul Bar

Application	Style	Designation	Insert	Material	Through coolant	StreamJet-Bar	Mogul Bar	Min. bore diameter DMIN (mm)						Page	
								0	10	20	30	40	50		
Boring & Internal facing		<b>SEXPR</b>	EP...	Steel Carbide	●	✓		04.5   07	04.5   07						4-53
		<b>S/C-MBR-OH</b>	MBL...	Steel Carbide	●		✓	05							4-12
		<b>S/C-SEXR-OH</b>	ERGH..	Steel Carbide	●		✓	06							4-13
		<b>SCLCR/L</b>	CC...	Steel Carbide	●	✓		05   027	05   027						4-14
		<b>S/C-SCLCR/L-OH</b>	CC..	Steel Carbide	●		✓	010   018							4-16
		<b>S/C-SCLPR/L-OH</b>	CP...	Steel Carbide	●		✓	07   010							4-17
Boring & internal profiling		<b>SDUCR/L</b>	DC...	Steel Carbide	●	✓		013   032	013   027						4-18
		<b>SVUCR/L</b>	VC...	Steel Carbide	●	✓		016   032	018   032						4-19
		<b>SDQCR/L</b>	DC...	Steel Carbide	●	✓		013   030	013   025						4-20
		<b>SVQCR/L</b>	VC...	Steel Carbide	●	✓		013.5   021.5	013.5   021.5						4-21
		<b>SYUBR/L</b>	YW...	Steel Carbide	●	✓		020	020   024.5						4-22
Boring		<b>SWUBR/L</b>	WB...	Steel Carbide	●	✓		06   08	06   08						4-23
		<b>S/C-STUCR/L-OH</b>	TC..	Steel Carbide	●		✓	08							4-24
		<b>STUPR/L</b>	TP...	Steel Carbide	●	✓		08   034	08   027						4-25
		<b>S/C-STUPR/L-OH</b>	TP..	Steel Carbide	●		✓	010   022							4-27
Blind hole boring		<b>STFPR/L</b>	TP...	Steel Carbide	●	✓		010   027	010   022						4-28

## StreamJet-Bar / Mogul Bar

Application	Style	Designation	Insert	Material	Through coolant	StreamJet-Bar	Mogul Bar	Min. bore diameter DMIN (mm)						Page	
								0	10	20	30	40	50		
Internal undercut & profiling		SYQBR/L	YW...	Steel Carbide	●	✓		ø17	ø21.5	ø17	ø21.5				4-29
Front turning, Back turning		C-STZCR-OH	TC..	Carbide	●		✓			ø10					4-30
		C-STZPR-OH	TP...	Carbide	●		✓			ø12	ø17.5				4-30
Back boring		SDZCR/L	DC...	Steel Carbide	●	✓		ø14	ø25	ø18	ø22				4-31
		SVZCR/L	VC...	Steel	●	✓		ø16							4-32
		SVZBR/L	VB...	Steel	●	✓		ø20	ø40						4-33
		SEZPR/L	EP...	Steel Carbide	●	✓		ø5.5	ø6.5	ø5.5	ø6.5				4-34
Internal sphere cutting		SVJCR/L	VC...	Steel	●	✓		ø16	ø20						4-34

## Double-sided insert with positive cutting edges (Metric)

### MiniForce-Turn

Application	Style	Designation	Insert	Material	Through coolant	MINIFURN	Min. bore diameter DMIN (mm)						Page		
							0	10	20	30	40	50			
Boring & internal facing		SWLXR/L	WX*U...	Steel Carbide	●	✓		ø12	ø22	ø12	ø22				4-35
Boring & internal profiling		SDXXR/L	DX*U...	Steel Carbide	●	✓		ø13	ø24	ø13	ø24				4-36
Back boring		SDZXR/L	DX*U...	Steel Carbide	●	✓		ø14	ø20	ø18	ø22				4-37

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

# Miniature Internal Turning - Quick Guide

## Solid bar type (Metric)

### LBM series

Applica- tion	Style	Designation	Insert	Through coolant	Min. bore diameter DMIN (mm)						Page		
					0	10	20	30	40	50			
Internal, Front turning		<b>LBMAR</b>	LBM..		ø1	ø3							4-38
		<b>LBMAR-S</b>	LBMD..S		ø1	ø2.3							4-38
		<b>CH-LBML</b>	LBM.. LBMD..S		ø1	ø3							4-39
		<b>DS-LBMBL</b>	LBM.. LBMD..S		ø1	ø3							4-39

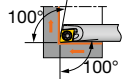
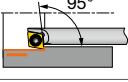
### TinyMini-Turn

Solid carbide tools for small diameters turning

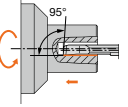
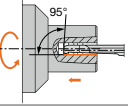
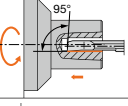
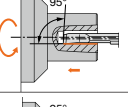
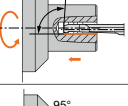
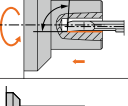
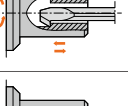
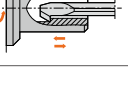
Application	Description	Through coolant	Cylindrical shank		Groove width (mm)	Min. bore diameter DMIN (mm)										Page		
			ø4	ø7		0	2	4	6	8	10	12	14	15				
Boring, profiling & chamfering	<b>TBT</b>		●	●	-	ø0.6										ø7	4-44	
	<b>JBT</b>	●	●	●	-	ø1										ø7	4-45	
Internal, Face grooving	<b>TBP</b>		●	●	-		ø2.8									ø5	4-46	
	<b>JBP</b>	●	●	●	-		ø2.8									ø5	4-46	
Back boring & chamfering	<b>TBU</b>			●	-											ø5	4-46	
	<b>JBU</b>	●		●	-											ø5	4-47	
Boring & 45° chamfering	<b>TBC</b>			●	-											ø5	ø6.8	4-47
	<b>JBC</b>	●		●	-											ø5	ø6.8	4-47
Back boring	<b>TBB</b>		●	●	-		ø3									ø7	4-48	
	<b>JBB</b>	●	●	●	-		ø3									ø5	4-48	
Threading (Metric thread)	<b>TBI</b>		●	●	-											ø4	ø7	4-48
	<b>JBI</b>	●	●	●	-											ø4	ø6	4-49
Internal Grooving	<b>TBG</b>		●	●	0.5 - 2		ø2									ø6.8	4-49	
	<b>JBG</b>	●	●	●	0.5 - 2		ø2									ø6.8	4-50	
Face grooving	<b>TBF</b>			●	1 - 3											ø6	ø15	4-51
	<b>JBF</b>	●		●	1 - 3											ø6	ø15	4-51
Face grooving (for shaft)	<b>TBS</b>			●	2											ø6	4-52	
	<b>JBS</b>	●		●	2											ø6	4-52	
Boring & profiling (full radius type)	<b>TBR</b>			●	1											ø5	ø6.8	4-52
	<b>JBR</b>	●		●	1											ø5	ø6.8	4-52

## TinyMini-Turn

Indexable tools for small diameters turning

	Application	Description	Material	Cylindrical shank		Min. bore diameter DMIN (mm)						Page	
				ø7	Through coolant	0	2	4	6	8	10		
Boring & internal facing		<b>SEXPR</b>	Steel Carbide	●	●			ø5	ø6				<b>4-53</b>
Back boring		<b>SEZPR</b>	Steel Carbide	●	●			ø5.5					<b>4-53</b>

## STICK DUO series

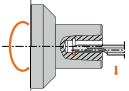
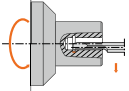
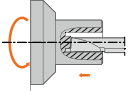
Application	Style	Designation	Sleeve	Cylindrical shank								Min. bore diameter DMIN (mm)	High precision	Page
				ø2	ø2.5	ø3	ø3.5	ø4	ø5	ø6	ø8			
Internal, Front turning		<b>SBFS-S</b>	HY-NBH-OH HY-NBH NBH	●	●	●	●	●	●	●		2.2 - 6.2		<b>4-62</b>
		<b>SBFB-F</b>	HY-NBH-OH HY-NBH NBH	●	●	●	●	●	●	●		2.2 - 6.2		<b>4-63</b>
		<b>SBFS-H</b>	HY-NBH-OH HY-NBH NBH	●	●	●	●	●	●	●	●	2.2 - 8.2		<b>4-64</b>
		<b>SHFS-S</b>	HY-NBH-OH HY-NBH NBH	●	●	●	●	●	●			2.2 - 5.2	●	<b>4-65</b>
		<b>SHFB-F</b>	HY-NBH-OH HY-NBH NBH	●	●	●	●	●	●			2.2 - 5.2	●	<b>4-66</b>
		<b>SHFS-H</b>	HY-NBH-OH HY-NBH NBH	●	●	●	●	●	●			2.2 - 5.2	●	<b>4-67</b>
Internal, Back turning		<b>SBB-S</b>	HY-NBH-OH HY-NBH NBH			●		●				3.0 - 4.0		<b>4-68</b>
		<b>SBB</b>	HY-NBH-OH HY-NBH NBH			●		●				3.0 - 4.0		<b>4-68</b>

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

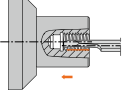
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# Miniature Internal Turning - Quick Guide




## STICK DUO series

Application	Style	Designation	Sleeve	Cylindrical shank					Min. bore diameter DMIN (mm)	Groove width (mm)	Page
				ø3	ø4	ø5	ø6	ø8			
Internal Grooving		<b>SBG-S</b>	HY-NBH-OH HY-NBH NBH	●	●	●	●	●	3.0 - 8.0	0.5 - 2.0	<b>4-69</b>
		<b>SBG</b>	HY-NBH-OH HY-NBH NBH	●	●	●	●	●	3.0 - 8.0	0.5 - 2.0	<b>4-70</b>
Internal Face grooving		<b>SFG</b>	HY-NBH-OH HY-NBH NBH				●	●	6.0 - 8.0	1.0 - 3.0	<b>4-71</b>

## STICK DUO series

Application	Style	Designation	Sleeve	Cylindrical shank						Min. bore diameter DMIN (mm)	Pitch (mm)						Page	
				ø2.5	ø3	ø3.5	ø4	ø5	ø6		0	1	2	3	4	5		
Internal Threading		<b>SBT</b>	HY-NBH-OH HY-NBH NBH	●	●	●	●	●	●	2.5 - 6.0	0.5	1.75						<b>4-72</b>

## SHAPER DUO

Application	Style	Designation	Sleeve	Cylindrical shank								Socket size	AF range (mm)	Page
				ø2	ø2.5	ø3	ø3.5	ø4	ø5	ø6	ø8			
Hexagon		<b>SSP-H</b>	HY-NBH-OH HY-NBH NBH	●		●		●	●	●	●	-	1.0 - 12.1	<b>7-3</b>
Hexalobular		<b>SSP-T</b>	HY-NBH-OH HY-NBH NBH							●		T6 - T30	-	<b>7-4</b>
Square		<b>SSP-S</b>	HY-NBH-OH HY-NBH NBH	●	●	●	●	●	●	●	●	-	2.0 - 8.0	<b>7-5</b>



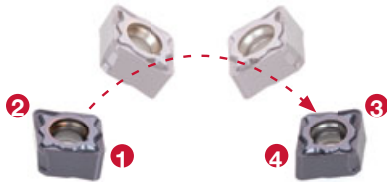


## Economical double-sided positive insert

Innovative geometry and seat interface ensures stability and high performance.

### Insert

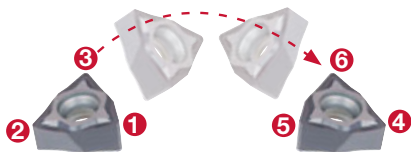
**CXMU0603...** 4 edges, rhombic 80°



**DXM/GU0703...** 4 edges, rhombic 55°



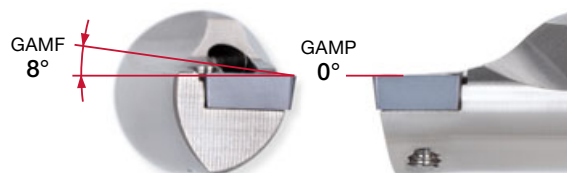
**WXGU0403...** 6 positive cutting edges



### Low cutting force machining with high rake angle



**MINIFORCE**  
A12M-SCLXR06-D140



**Conventional**  
A12M-SCLCR06-D140

# Mogul Bar

For ID boring | Swiss CNC Lathes



Highly rigid bars and inserts that direct chips away from the part

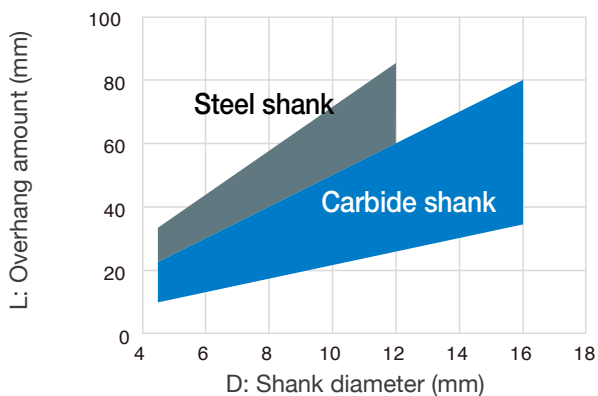
Unique boring bar design greatly improves rigidity combined with chipbreakers that control the direction of the chip evacuation during the boring operation

## Features

Toolholder overhang

Steel shank  $L/D \leq 5$

Carbide shank  $L/D \leq 7$

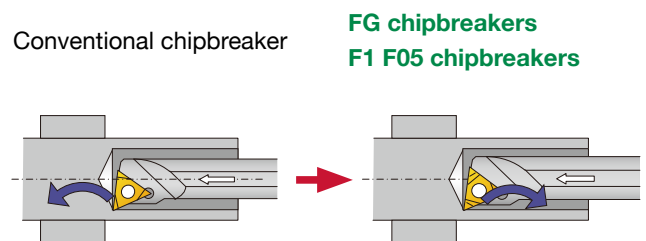


Cutting conditions  
 Material : Alloy steel, Stainless steel  
 $V_c = 80\text{m/min}$   $f = 0.05 - 0.1 \text{ mm/rev}$   
 $a_p = 0.1 - 0.5 \text{ mm}$   
 WET

## Features

F1, F05, FG chipbreakers developed for blind hole applications to direct chips backward and out of the hole to prevent chip packing

Coolant through boring bars to support chip evacuation



Reference pages: Inserts → [2-11](#), CBN → [2-87 -](#), PCD → [2-119 -](#),  
 Shank → [4-16](#)

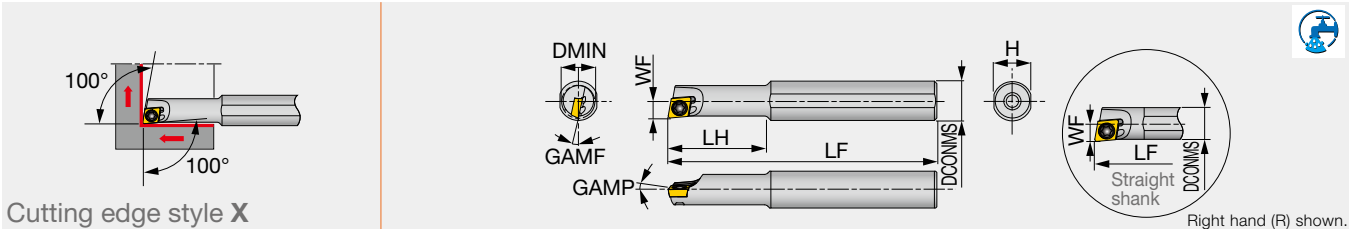
# EP



**Rhombic, 75°  
with hole  
Positive 11°**

## STREAMJETBAR A/E-SEXPR/L

Screw-on boring bar, for positive 75° rhombic inserts



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).

### 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

Reference pages: Insert → 2-34 -, CBN → 2-93, PCD → 2-122

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

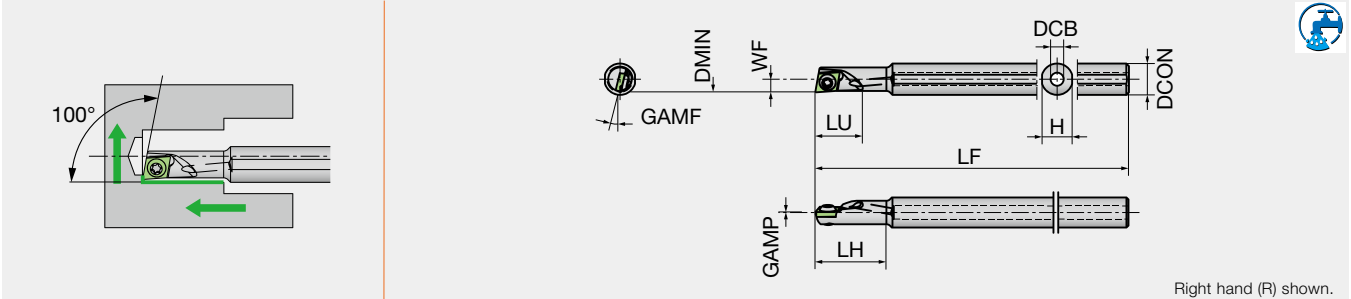
# MB



**Rhombic, 75°  
with hole  
Positive 9°**

## S/C-MBR-OH

Screw-on boring bar, for positive 75° rhombic inserts



Metric	Material	DMIN	DCON	WF	LF	LH	H	GAMP	GAMF	RE*	DCB	LU	Insert
S06F-MBRD05-OH	Steel	5	6	2.5	80	13.5	5.7	0°	13°	0.15	2.5	9	MBL..
C045F-MBRD05-OH	Carbide	5	4.5	2.5	80	10.5	4	0°	13°	0.15	1.5	9	MBL..
C06F-MBRD05-OH	Carbide	5	6	2.5	80	18	5.7	0°	13°	0.15	1.5	9	MBL..

Use a left-handed insert  
For F1 chipbreaker, right-hand inserts fit to right-hand toolholder  
F1 chipbreaker evacuates chips BACKWARD\*\*RE: Standard corner radius  
\*RE: Standard corner radius

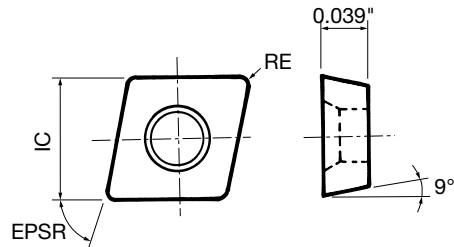
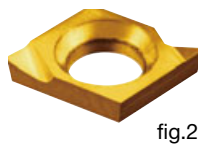
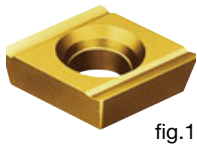
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
**-MBRD05-OH	LR-S-2*3.5	CLR-13S

## INSERT

### MBL with chipbreaker



P	Steel	★	☆	☆	☆
M	Stainless	☆	★	☆	☆
N	Non-ferrous	☆	☆	★	☆
S	Superalloys	☆	☆	☆	☆
H	Hard materials	★	☆	☆	☆

★ : First choice  
☆ : Second choice

Designation	HAND	Coated				RE (in)	EPSR	IC (in)	Figure
		QM3	ST4	TM4	ZM3				
MBL005FL	L	●	●	●	●	0.002	75°	0.142	1
MBL015FL	L	●	●	●	●	0.006	75°	0.142	1
MBL005FRF1	R	●	●	●	●	0.002	75°	0.142	2
MBL015FRF1	R	●	●	●	●	0.006	75°	0.142	2

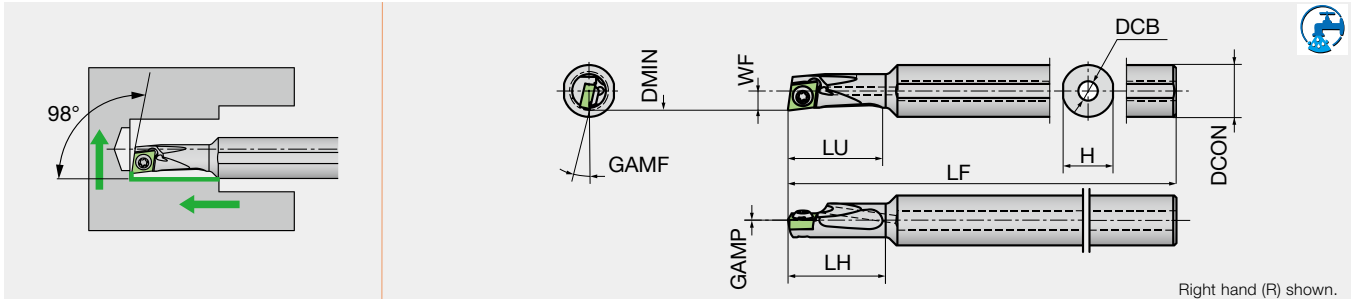
● : Line up



**Rhombic, 75°  
with hole  
Positive 9°**

## S/C-SEXR-OH

Screw-on boring bar, for positive 75° rhombic inserts



Metric	Material	DMIN	DCON	WF	LF	LH	H	GAMP	GAMP	RE*	DCB	LU	Insert
S08G-SEXRRT3D06-OH	Steel	6	8	3	90	15	7.7	0°	13°	0.2	3	15	ERGHT301..
C05G-SEXRRT3D06-OH	Carbide	6	5	3	90	12.5	4	0°	13°	0.2	1.5	11	ERGHT301..
C06G-SEXRRT3D06-OH	Carbide	6	6	3	90	20	5.7	0°	13°	0.2	1.5	11	ERGHT301..
C06G-SEXRRLT3D06-OH	Carbide	6	6	3	90	20	5.7	0°	13°	0.2	1.5	11	ERGHT301..

Use a left-handed insert  
For F1 chipbreaker, right-hand inserts fit to right-hand toolholder  
F1 chipbreaker evacuates chips BACKWARD  
\*RE: Standard corner radius

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
**-SEXRRT3D06-OH	LR-S-2*3.7	CLR-13S

## INSERT

### ERGH

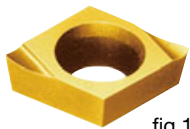
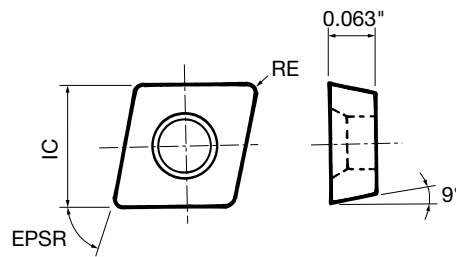


fig.1



fig.2



	P	M	N	S	H
Steel	★	☆	☆	☆	☆
Stainless	☆	★	☆	☆	☆
Non-ferrous	☆	☆	★	☆	☆
Superalloys	☆	☆	☆	★	☆
Hard materials	★	☆	☆	☆	☆

★ : First choice  
☆ : Second choice

Designation	HAND	Coated				RE (in)	EPSR	IC (in)	Figure
		QM3	ST4	TM4	ZM3				
ERGHT30102FRA2	R			●	●	0.008	75°	0.156	1
ERGHT30104FRA2	R			●	●	0.016	75°	0.156	1
ERGHT30102FLA2	L			●	●	0.008	75°	0.156	1
ERGHT30104FLA2	L			●	●	0.016	75°	0.156	1
ERGHT30101FRF1	R	●	●	●		0.004	75°	0.156	2
ERGHT30102FRF1	R	●	●	●		0.008	75°	0.156	2
ERGHT30104FRF1	R	●	●	●		0.016	75°	0.156	2

● : Line up

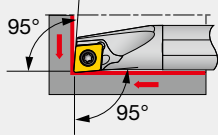
# CC



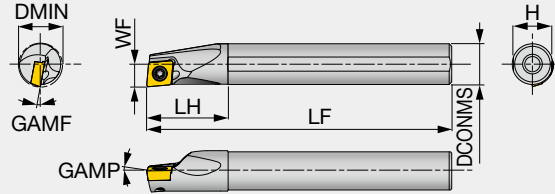
**Rhombic, 80°  
with hole  
Positive 7°**

## 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

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

# CC

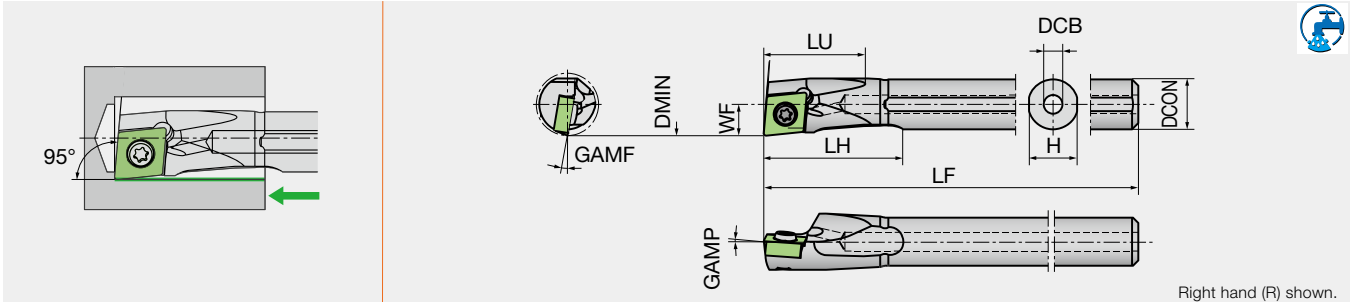


**Rhombic, 80°  
with hole  
Positive 7°**

## Mogul Bar

S/C-SCLC-OH

Screw-on boring bar, for positive 80° rhombic inserts



Metric	Material	DMIN	DCON	WF	LF	LH	H	GAMF	GAMP	RE*	DCB	LU	Insert
S08H-SCLCR06D10-OH	Steel	10	8	5	100	22	7.7	13°	0°	0.4	3	16	CC**0602...
S10K-SCLCR06D12-OH	Steel	12	10	6	125	27.5	9.6	11°	0°	0.4	3.5	20	CC**0602...
S12M-SCLCR06D14-OH	Steel	14	12	7	150	32.5	11.5	9°	0°	0.4	4	23	CC**0602...
S16Q-SCLCR09D18-OH	Steel	18	16	9	180	42.5	15.4	10°	0°	0.4	5	30	CC**09T3...
C08K-SCLCR06D10-OH	Carbide	10	8	5	125	16.5	7.7	13°	0°	0.4	2.5	15	CC**0602...
C10M-SCLCR06D12-OH	Carbide	12	10	6	150	20	9.6	11°	0°	0.4	2.5	19.5	CC**0602...
C10M-SCLCL06D12-OH	Carbide	12	10	6	150	20	9.6	11°	0°	0.4	2.5	19.5	CC**0602...
C12M-SCLCR06D14-OH	Carbide	14	12	7	150	23.5	11.5	9°	0°	0.4	3	22.5	CC**0602...

Use a left-handed insert  
 For F1 chipbreaker, right-hand inserts fit to right-hand toolholder  
 F1 chipbreaker evacuates chips BACKWARD  
 \*RE: Standard corner radius

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
S/C**-SCLCR06**	LRIS-2.5*5	CLR-15S
S**-SCLCR09**	LRIS-4*8	LLR-25S-20*65

Reference pages: Insert → 2-11 -, CBN → 2-87 -, PCD → 2-119 -



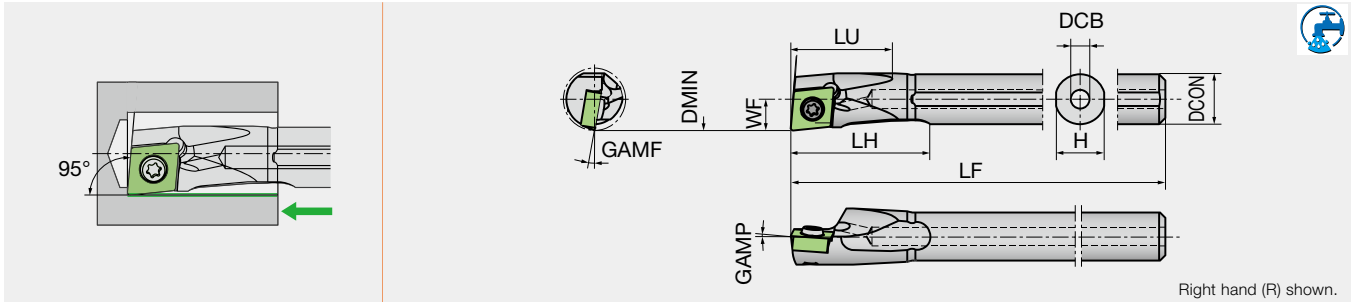
# CP



**Rhombic, 80°  
with hole  
Positive 11°**

## S/C-SCLP-OH

Screw-on boring bar, for positive 80° rhombic inserts



Metric	Material	DMIN	DCON	WF	LF	LH	H	GAMP	GAMF	RE*	DCB	LU	Insert
S06F-SCLPR04D07-OH	Steel	7	6	3.5	80	17	5.75	5°	9°	0.2	2.5	12	CP**0401...
S07G-SCLPR04D08-OH	Steel	8	7	4	90	19.5	6.75	5°	7°	0.2	3	13.5	CP**0401...
S08H-SCLPR06D10-OH	Steel	10	8	5	100	22	7.7	5°	10°	0.4	3	16	CP**0602...
C06H-SCLPR04D07-OH	Carbide	7	6	3.5	100	11.5	5.75	5°	9°	0.2	2	12	CP**0401...
C06H-SCLPL04D07-OH	Carbide	7	6	3.5	100	11.5	5.75	5°	9°	0.2	2	12	CP**0401...
C07J-SCLPR04D08-OH	Carbide	8	7	4	110	13	6.75	5°	7°	0.2	2	13.5	CP**0401...
C08K-SCLPR06D10-OH	Carbide	10	8	5	125	16.5	7.7	5°	10°	0.4	2.5	15	CP**0602...
C08K-SCLPL06D10-OH	Carbide	10	8	5	125	16.5	7.7	5°	10°	0.4	2.5	15	CP**0602...

Use a left-handed insert  
For F1 chipbreaker, right-hand inserts fit to right-hand toolholder  
F1 chipbreaker evacuates chips BACKWARD  
\*RE: Standard corner radius

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
S/C**-SCLPR04**	LR-S-2*3.7	CLR-13S
S/C**-SCLPR06**	LR-S-2.5*6	CLR-15S

Reference pages: Insert → 2-20 -, CBN → 2-90, PCD → 2-120

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

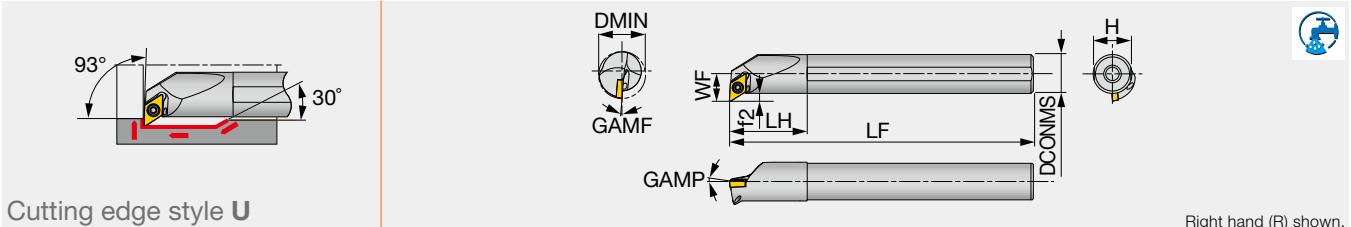
# DC

 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).

#### 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

Reference pages: Insert → 2-23 -, CBN → 2-91 -, PCD → 2-120 -

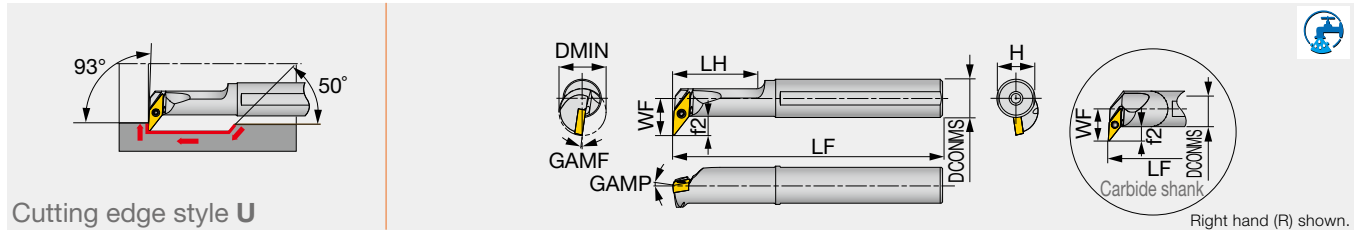
# VC

Rhombic, 35°  
with hole  
Positive 7°



## A/E-SVUCR/L

Screw-on boring bar, for positive 35° rhombic inserts



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: Insert → 2-50 -, CBN → 2-101, PCD → 2-127

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

# DC

Rhombic, 55°

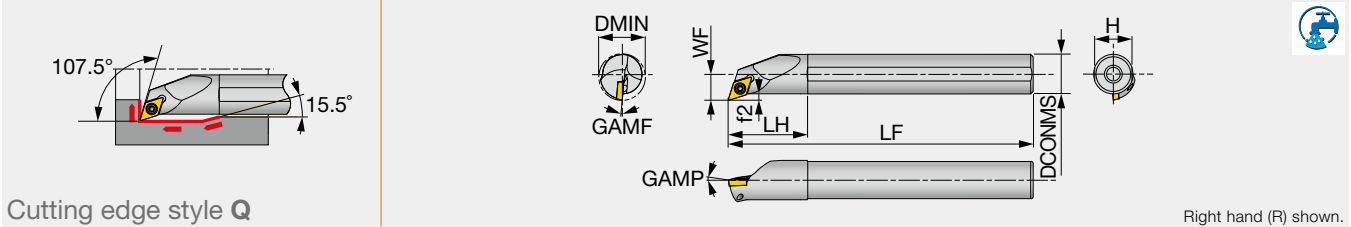


with hole  
Positive 7°

## STREAMJETBAR

### A/E-SDQCR/L

Screw-on boring bar, for positive 55° rhombic inserts



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: Insert → 2-23 -, CBN → 2-91 -, PCD → 2-120 -

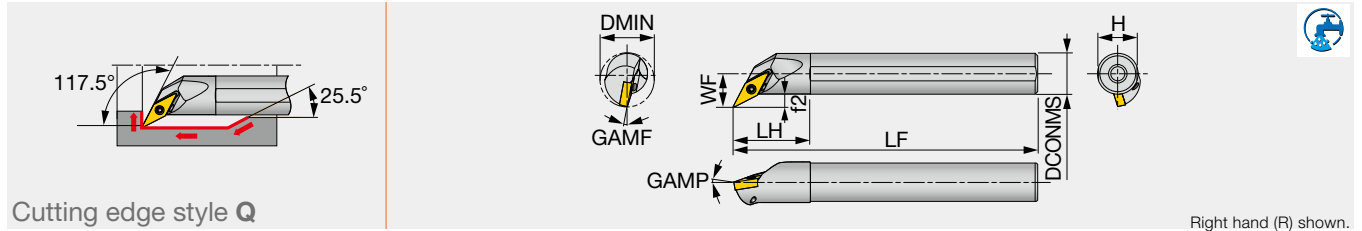
# VC

Rhombic, 35°  
with hole  
Positive 7°



## A/E-SVQCR/L

Screw-on boring bar, for positive 35° rhombic inserts



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).

### 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

Reference pages: Insert → 2-50 -, CBN → 2-101, PCD → 2-127

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

# YW

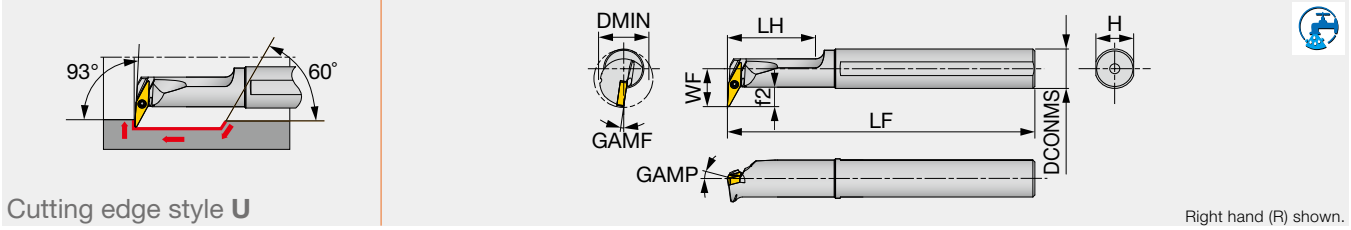


Rhombic, 25°  
with hole  
Positive 7°

## Y-PRO SERIES

A/E-SYUBR/L

Screw-on boring bar, for positive 25° rhombic inserts



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

Reference pages: Insert → [2-59](#)

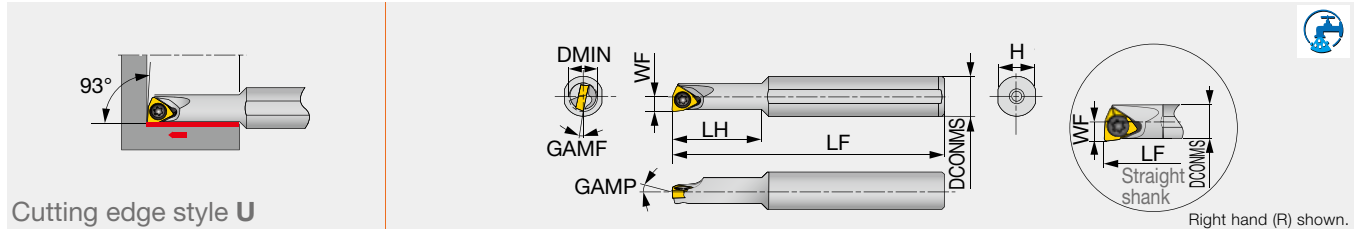
# WB



Trigon, 80°  
with hole  
Positive 5°

## STREAMJETBAR A/E-SWUBR/L

Screw-on boring bar, for positive 80° trigon inserts



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

Reference pages: Insert → 2-57

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

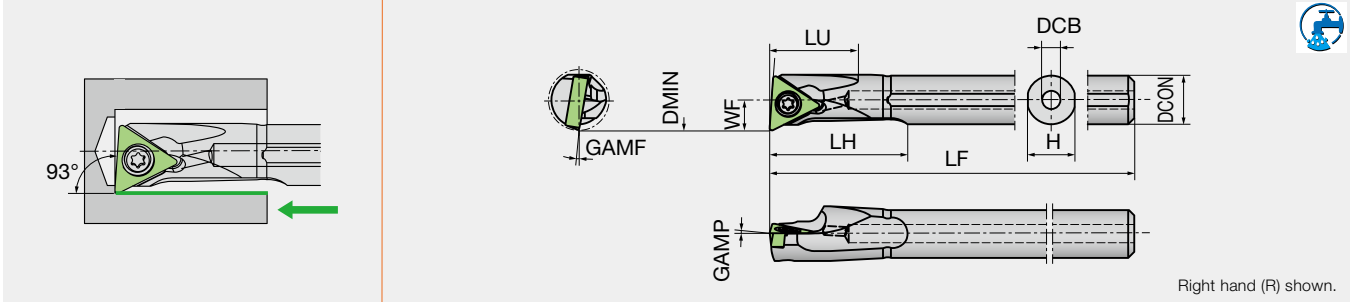
# TC



**Triangular  
with hole  
Positive 7°**

## S/C-STUC-OH

Screw-on boring bar, for positive 60° triangular inserts



Metric	Material	DMIN	DCON	WF	LF	LH	H	GAMP	GAMF	RE*	DCB	LU	Insert
S07G-STUCR06D08-OH	Steel	8	7	4	90	19.5	6.75	0°	11°	0.2	2.5	12.5	TC**0601...
C07J-STUCR06D08-OH	Carbide	8	7	4	110	13	6.75	0°	11°	0.2	2	12.5	TC**0601...
C07J-STUCL06D08-OH	Carbide	8	7	4	110	13	6.75	0°	11°	0.2	2	12.5	TC**0601...

Use a left-handed insert  
 For F05 chipbreaker, right-hand inserts fit to right-hand toolholder  
 F05 chipbreaker evacuates chips BACKWARD  
 \*RE: Standard corner radius

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
S/C07G-STUCR/L06D08-OH	LR-S-2*4.4	CLR-13S

Reference pages: Insert → [2-36 -](#), CBN → [2-93 -](#), PCD → [2-122 -](#)



# TP

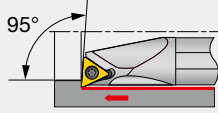


Triangular  
with hole  
Positive 11°

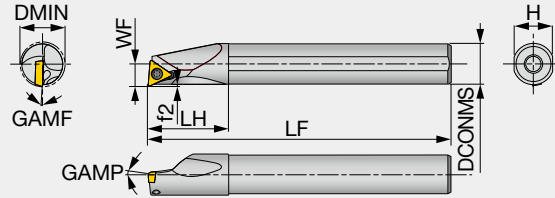
## STREAMJETBAR

### 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... <sup>(1)</sup>	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... <sup>(1)</sup>	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... <sup>(1)</sup>	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... <sup>(1)</sup>	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... <sup>(1)</sup>	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... <sup>(1)</sup>	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... <sup>(1)</sup>	2.20
E05-STUPR7-D07	Carbide	0.438	0.313	0.250	5.00	0.625	2.880	-	5°	-7°	0.016	TP** 73... <sup>(1)</sup>	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... <sup>(1)</sup>	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... <sup>(1)</sup>	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... <sup>(1)</sup>	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... <sup>(1)</sup>	0.9
A10F-STUPR1102-D120	Steel	12	10	6.5	80	20	9	1.4	5°	-6°	0.4	TP**1102... <sup>(1)</sup>	1.2
A10K-STUPR/L1102-D120	Steel	12	10	6.5	125	20	9	0.7	5°	-6°	0.4	TP**1102... <sup>(1)</sup>	1.2
A10K-STUPR/L1103-D120	Steel	12	10	6.5	125	20	9	0.6	5°	-10°	0.4	TP**1103... <sup>(1)</sup>	1.4
A12H-STUPR1102-D140	Steel	14	12	7	100	24	11	0.8	5°	-4°	0.4	TP**1102... <sup>(1)</sup>	1.2
A12M-STUPR/L1102-D140	Steel	14	12	7	150	24	11	0.8	5°	-4°	0.4	TP**1102... <sup>(1)</sup>	1.2
A12M-STUPR/L1103-D140	Steel	14	12	7	150	24	11	0.6	5°	-6°	0.4	TP**1103... <sup>(1)</sup>	1.4
A12H-STUPR1102-D160	Steel	16	12	9	100	24	11	0.6	5°	-3°	0.4	TP**1102... <sup>(1)</sup>	1.2
A12M-STUPR/L1102-D160	Steel	16	12	9	150	24	11	0.6	5°	-3°	0.4	TP**1102... <sup>(1)</sup>	1.2
A16K-STUPR13-D180	Steel	18	16	9	125	32	15	0.8	5°	-3°	0.4	TP**1303... <sup>(1)</sup>	1.4
A16Q-STUPR/L1103-D180	Steel	18	16	9	180	32	15	0.8	5°	-4°	0.4	TP**1103... <sup>(1)</sup>	1.4
A16Q-STUPR/L13-D180	Steel	18	16	9	180	32	15	0.8	5°	-3°	0.4	TP**1303... <sup>(1)</sup>	1.4
A16K-STUPR13-D200	Steel	20	16	11	125	32	15	0.6	5°	-3°	0.4	TP**1303... <sup>(1)</sup>	1.4
A16Q-STUPR/L13-D200	Steel	20	16	11	180	32	15	0.6	5°	-3°	0.4	TP**1303... <sup>(1)</sup>	1.4
A20R-STUPR/L1103-D220	Steel	22	20	11	200	36	18	0.7	5°	-2°	0.4	TP**1103... <sup>(1)</sup>	1.4
A20R-STUPR/L13-D220	Steel	22	20	11	200	36	18	0.7	5°	-2°	0.4	TP**1303... <sup>(1)</sup>	1.4
A25S-STUPR/L16-D270	Steel	27	25	13.5	250	45	23	0.5	5°	-1°	0.8	TP**16T3... <sup>(1)</sup>	3
A32T-STUPR/L16-D340	Steel	34	32	17	300	50	30	0.7	5°	0°	0.8	TP**16T3... <sup>(1)</sup>	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... <sup>(1)</sup>	0.9
E08K-STUPR/L09-D100	Carbide	10	8	5.5	125	22	7	0.6	5°	-8°	0.4	TP**0902... <sup>(1)</sup>	0.9
E10F-STUPR1102-D120	Carbide	12	10	6.5	80	25	9	0.5	5°	-6°	0.4	TP**1102... <sup>(1)</sup>	1.2
E10H-STUPR1102-D120	Carbide	12	10	6.5	100	25	9	0.6	5°	-6°	0.4	TP**1102... <sup>(1)</sup>	1.2
E10M-STUPR/L1102-D120	Carbide	12	10	6.5	150	25	9	0.6	5°	-6°	0.4	TP**1102... <sup>(1)</sup>	1.2
E10M-STUPR/L1103-D120	Carbide	12	10	6.5	150	25	9	0.7	5°	-10°	0.4	TP**1103... <sup>(1)</sup>	1.4
E12G-STUPR1102-D140	Carbide	14	12	7	90	27	11	0.8	5°	-4°	0.4	TP**1102... <sup>(1)</sup>	1.2
E12J-STUPR1102-D140	Carbide	14	12	7	110	27	11	0.8	5°	-4°	0.4	TP**1102... <sup>(1)</sup>	1.2
E12Q-STUPR/L1102-D140	Carbide	14	12	7	180	27	11	0.8	5°	-4°	0.4	TP**1102... <sup>(1)</sup>	1.2
E12Q-STUPR/L1103-D140	Carbide	14	12	7	180	27	11	0.7	5°	-6°	0.4	TP**1103... <sup>(1)</sup>	1.4
E12G-STUPR1102-D160	Carbide	16	12	9	90	27	11	0.6	5°	-3°	0.4	TP**1102... <sup>(1)</sup>	1.2
E12J-STUPR1102-D160	Carbide	16	12	9	110	27	11	0.6	5°	-3°	0.4	TP**1102... <sup>(1)</sup>	1.2

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



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... <sup>(1)</sup>	1.2
E16H-STUPR13-D180	Carbide	18	16	9	100	32	15	0.9	5°	-3°	0.4	TP**1303... <sup>(1)</sup>	1.4
E16R-STUPR/L1103-D180	Carbide	18	16	9	200	32	15	0.8	5°	-3°	0.4	TP**1103... <sup>(1)</sup>	1.4
E16L-STUPR13-D180	Carbide	18	16	9	130	32	15	0.6	5°	-3°	0.4	TP**1303... <sup>(1)</sup>	1.4
E16R-STUPR/L13-D180	Carbide	18	16	9	200	32	15	0.6	5°	-3°	0.4	TP**1303... <sup>(1)</sup>	1.4
E16H-STUPR13-D200	Carbide	20	16	11	100	32	15	0.6	5°	-3°	0.4	TP**1303... <sup>(1)</sup>	1.4
E16L-STUPR13-D200	Carbide	20	16	11	130	32	15	0.6	5°	-3°	0.4	TP**1303... <sup>(1)</sup>	1.4
E16R-STUPR/L13-D200	Carbide	20	16	11	200	32	15	0.6	5°	-3°	0.4	TP**1303... <sup>(1)</sup>	1.4
E20S-STUPR1103-D220	Carbide	22	20	11	250	36	18	0.7	5°	-2°	0.4	TP**1103... <sup>(1)</sup>	1.4
E20S-STUPR13-D220	Carbide	22	20	11	250	36	18	0.6	5°	-2°	0.4	TP**1303... <sup>(1)</sup>	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

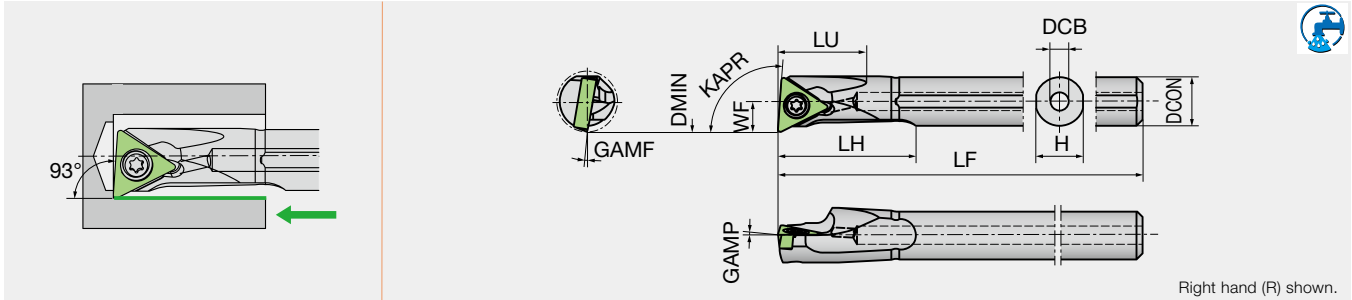
# TP



**Triangular  
with hole  
Positive 11°**

## S/C-STUP-OH

Screw-on boring bar, for positive 60° triangular inserts



Metric	Material	DMIN	DCON	WF	LF	LH	H	GAMP	GAMF	RE*	DCB	LU	Insert
S08H-STUPR09D10-OH	Steel	10	8	5	100	22.5	7.7	5°	10°	0.4	3	14.5	TP**0902...
S10K-STUPR11D12-OH	Steel	12	10	6	125	27.5	9.6	5°	7.5°	0.4	3.5	18.5	TP**1103...
S12M-STUPR11D14-OH	Steel	14	12	7	150	32.5	11.5	5°	5°	0.4	4	22	TP**1103...
S16Q-STUPR11D18-OH	Steel	18	16	9	180	42.5	15.4	5°	3°	0.4	5	28.5	TP**1103...
S20Q-STUPR11D22-OH	Steel	22	20	11	180	46	19.4	5°	3°	0.4	5	38	TP**1103...
C08K-STUPR09D10-OH	Carbide	10	8	5	125	16.5	7.7	5°	10°	0.4	2.5	14.5	TP**0902...
C08K-STUPL09D10-OH	Carbide	10	8	5	125	16.5	7.7	5°	10°	0.4	2.5	14.5	TP**0902...
C10M-STUPR11D12-OH	Carbide	12	10	6	150	20	9.6	5°	7.5°	0.4	2.5	17.5	TP**1103...
C10M-STUPL11D12-OH	Carbide	12	10	6	150	20	9.6	5°	7.5°	0.4	2.5	17.5	TP**1103...
C12M-STUPR11D14-OH	Carbide	14	12	7	150	23	11.5	5°	5°	0.4	3	21.5	TP**1103...
C16Q-STUPR11D18-OH	Carbide	18	16	9	180	29	15.4	5°	3°	0.4	4	28	TP**1103...

Use a left-handed insert  
 For F1/FG chipbreaker, right-hand inserts fit to right-hand toolholder  
 F1/FG chipbreaker evacuates chips BACKWARD  
 \*RE: Standard corner radius

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
S/C** - STUPR/L09**	LR-S-2.5*4.8	CLR-15S
S/C** - STUPR/L11**	LR-S-3*5.8	RLR-20S

Reference pages: Insert → 2-42 -, CBN → 2-94 -, PCD → 2-123 -

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

# TP

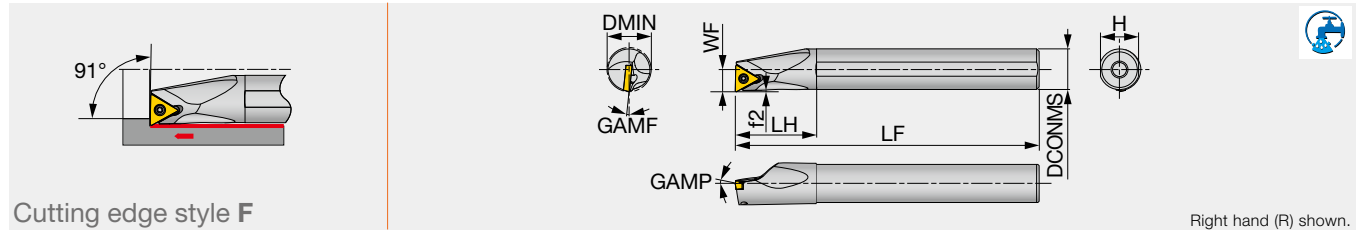


Triangular  
with hole  
Positive 11°

## STREAMJETBAR

A/E-STFPR/L

Screw-on boring bar, for positive 60° triangular inserts



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

Reference pages: Insert → 2-42 -, CBN → 2-94 -, PCD → 2-123 -

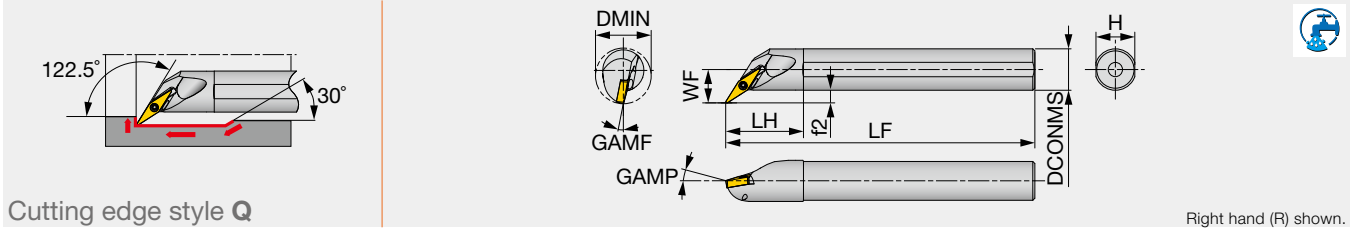
# YW

Rhombic, 25°  
with hole  
Positive 7°

## Y-PRO SERIES

A/E-SYQBR/L

Screw-on boring bar, for positive 25° rhombic inserts



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

Reference pages: Insert → 2-59

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

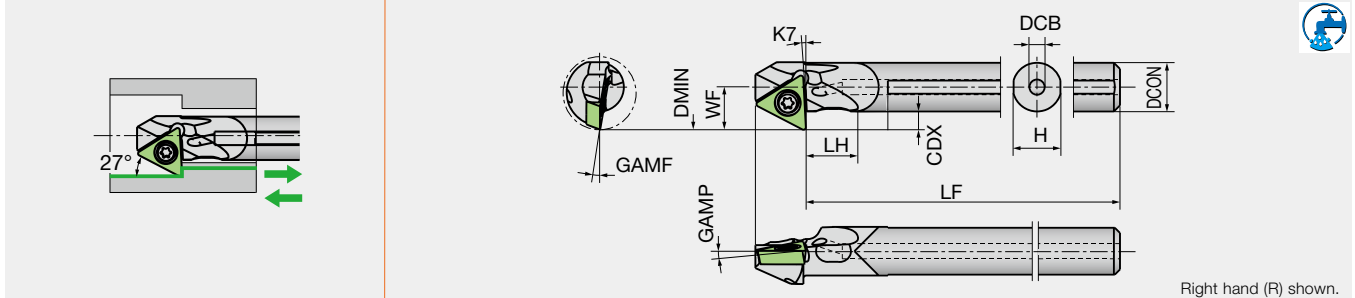
# TC



**Triangular  
with hole  
Positive 7°**

## C-STZC/ZP-OH

Screw-on boring bar, for positive 60° triangular inserts



Metric	DMIN	DCON	WF	LF	LH	H	GAMP	GAMF	RE*	CDX	DCB	Insert
C06H-STZCR06D10-OH	10	6	5.5	100	6	5.8	0°	10°	0.2	2.5	2	TC**0601...
C08K-STZPR09D12-OH	12	8	7	125	8.5	7.7	5°	10°	0.4	3	2.5	TP**0902...
C10M-STZPR09D14-OH	14	10	8	150	12	9.6	5°	7°	0.4	3	2.5	TP**0902...
C12M-STZPR11D175-OH	17.5	12	10.5	150	14.5	11.5	5°	5°	0.4	4.5	3	TP**1103...

Use a left-handed insert

For F05 chipbreaker, right-hand inserts fit to right-hand toolholder

F05 chipbreaker evacuates chips BACKWARD

\*RE: Standard corner radius

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
C06H-STZCR06D10-OH	LR-S-2*4.4	CLR-13S
C**-STZPR09**	LR-S-2.5*4.8	CLR-15S
C12M-STZPR11D175-OH	LR-S-3*5.8	RLR-20S

Reference pages: Insert → [2-36 -](#), [2-42 -](#), CBN → [2-93 -](#), [2-94 -](#), PCD → [2-122 -](#), [2-123 -](#)

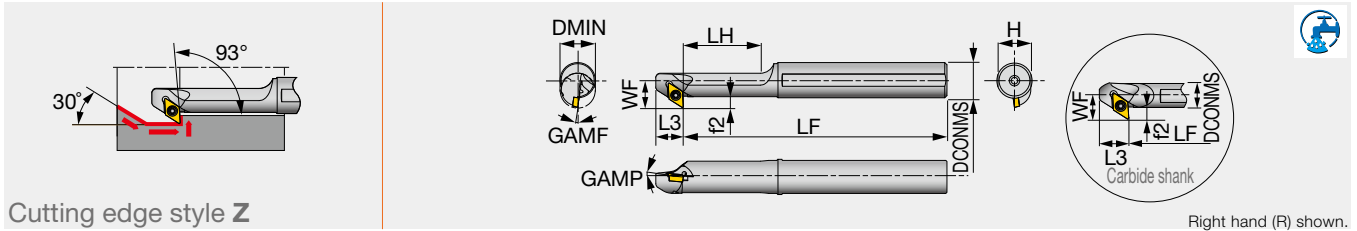
# DC

Rhombic, 55°  
with hole  
Positive 7°



## 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

Reference pages: Insert → 2-23 -, CBN → 2-91 -, PCD → 2-120 -

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

# VC

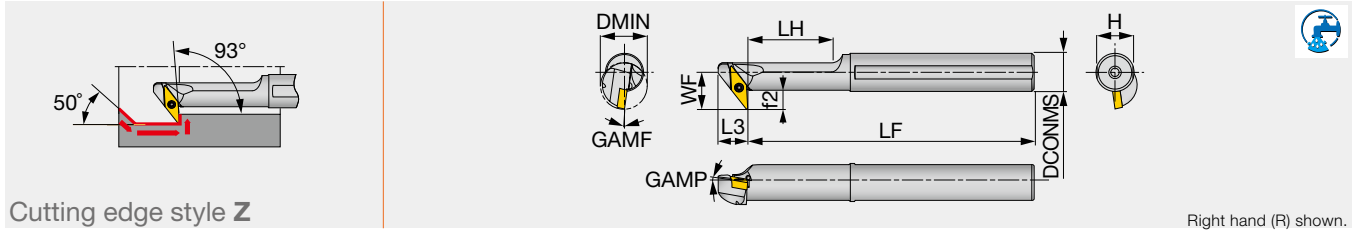


Rhombic, 35° with hole  
Positive 7°

## STREAMJETBAR

A-SVZCR/L

Screw-on boring bar, for positive 35° rhombic inserts



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

Reference pages: Insert → 2-50 -, CBN → 2-101, PCD → 2-127



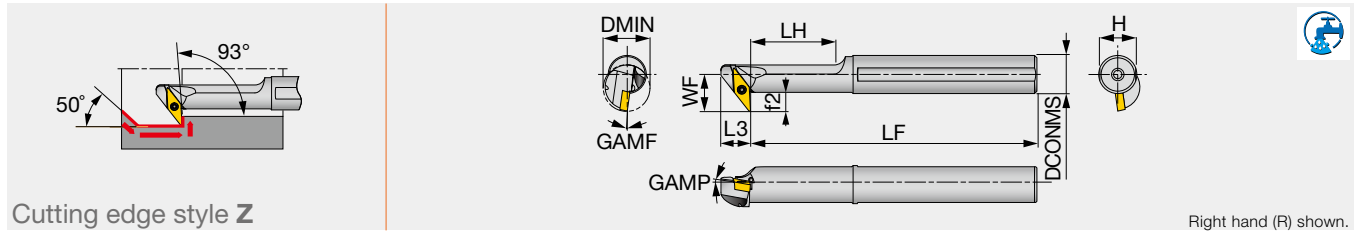
# VB

Rhombic, 35°  
with hole  
Positive 5°



## 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

Reference pages: Insert → 2-48 -, CBN → 2-99 -, PCD → 2-127

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

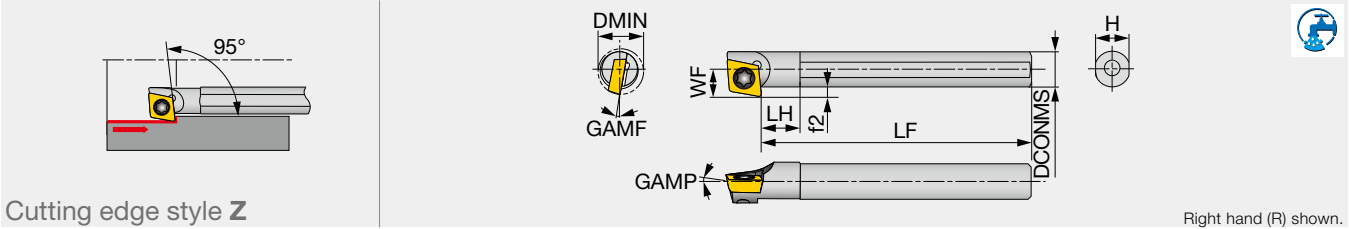
# EP



**Rhombic, 75°  
with hole  
Positive 11°**

## 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

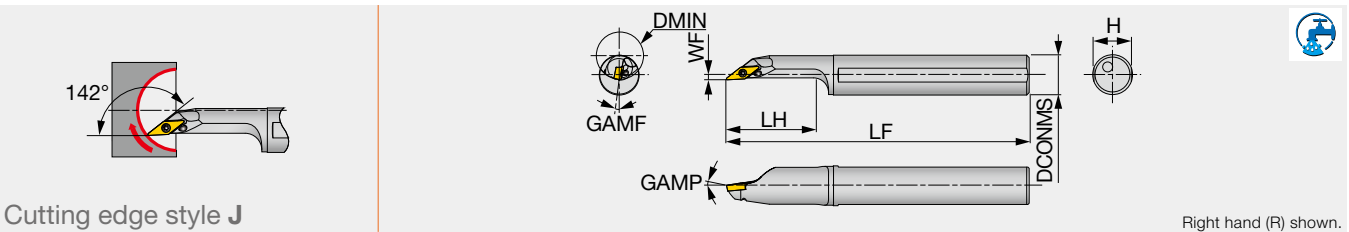
# VC



**Rhombic, 35°  
with hole  
Positive 7°**

## 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

Reference pages: A/E-SEZPR/L: Insert → 2-34 -, CBN → 2-93, PCD → 2-122  
A-SVJCR/L: Insert → 2-50 -, CBN → 2-101, PCD → 2-127

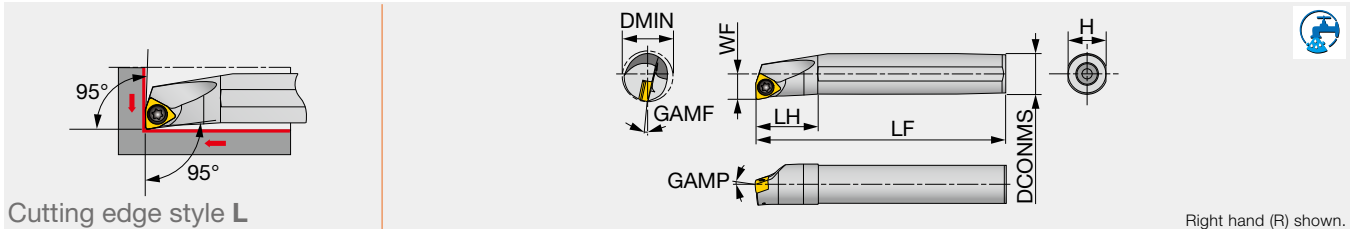
# WX



Trigon, 80°  
with hole

## MINIFORCE A/E-SWLXR/L

Screw-on boring bar, for WXGU inserts



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: Insert → 2-58 -

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

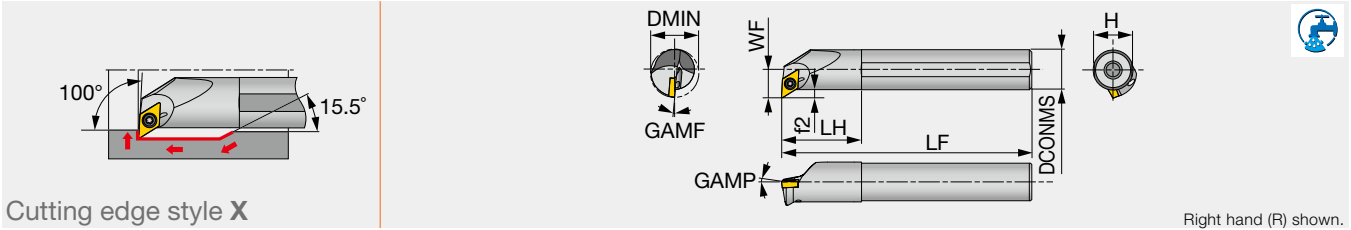
# DX



Rhombic, 55°  
with hole

## MINIFORCE A/E-SDXXR/L

Screw-on boring bar, for DXG/MU inserts



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)

### SPARE PARTS

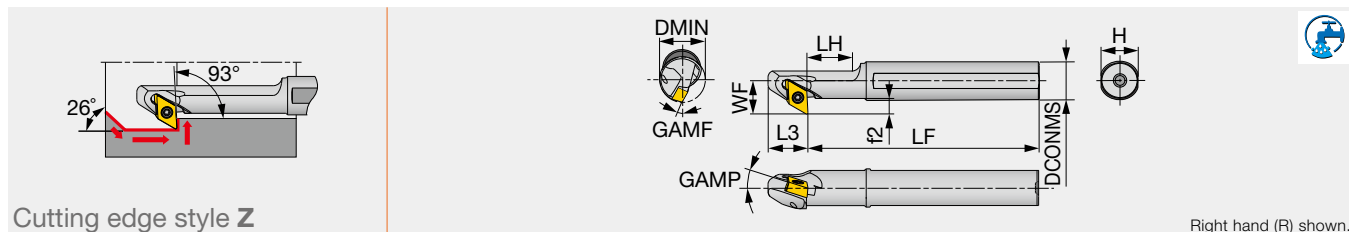


Designation	Clamping screw	Wrench
A/E**-SDXXR/L...	SR34-514	T-7F
S**-SDXXR/L07-H	SR34-514	T-7F

Reference pages: : Insert → **2-32** -

## A/E-SDZXR/L

Screw-on boring bar, for DXG/MU inserts



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

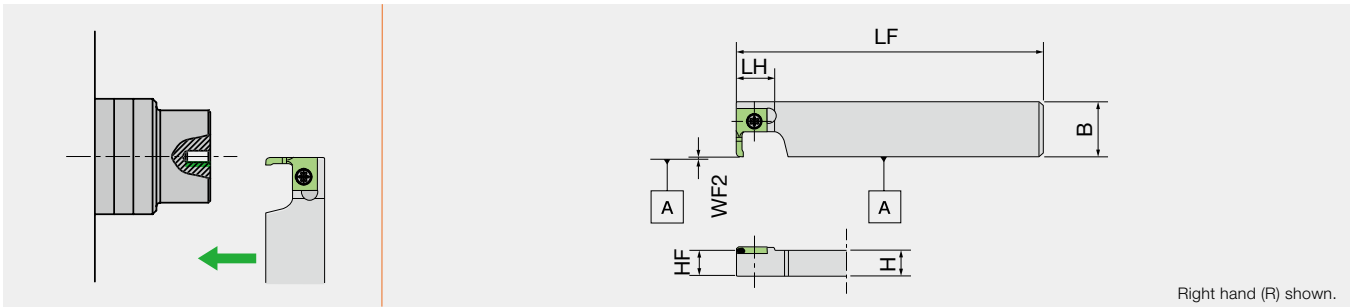
Note: Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).

### SPARE PARTS

Designation	Clamping screw	Wrench
A/E**-SDZXR/L...	SR34-514	T-7F

## LBMA

### Screw-on toolholder for boring insert



Inch	DMIN	H	B	LF	LH	HF	WF	WF2	Insert
LBMAR06-IN	0.039 - 0.118	0.375	0.375	4.724	0.591	0.375	-	0	LBM..
LBMAR08-IN	0.039 - 0.118	0.500	0.500	4.724	0.591	0.500	-	0	LBM..
LBMAR10-IN	0.039 - 0.118	0.625	0.625	4.724	0.591	0.625	-	0	LBM..

Metric	DMIN	H	B	LF	LH	HF	WF	WF2	Insert
LBMAR08	1 - 3	8	21.5	120	15	8	-	0	LBM..
LBMAR10	1 - 3	10	21.5	120	15	10	-	0	LBM..
LBMAR12	1 - 3	12	21.5	120	15	12	-	0	LBM..
LBMAR16	1 - 3	16	21.5	120	15	16	-	0	LBM..

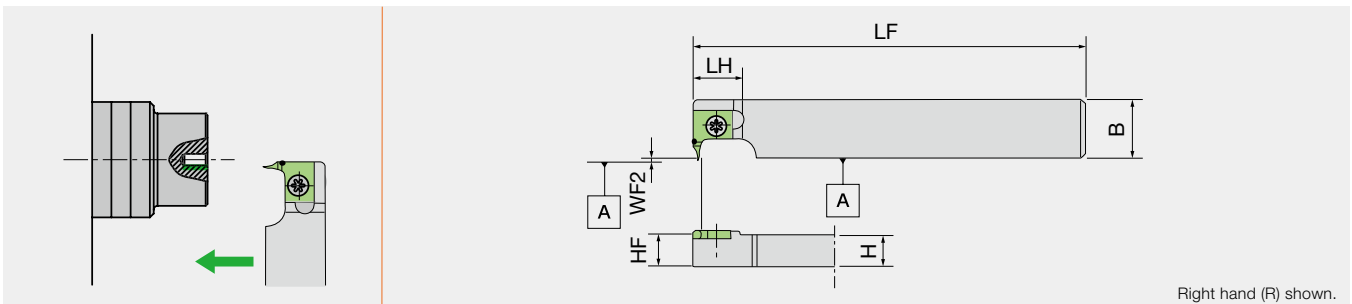
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
LBMAR06-IN	LRIS-4*10PW	CLR-15S
LBMAR08-IN	LRIS-4*12PW	CLR-15S
LBMAR10-IN	LRIS-4*12PW	CLR-15S
LBMAR10	LRIS-4*10PW	CLR-15S
LBMAR12	LRIS-4*12PW	CLR-15S
LBMAR16	LRIS-4*12PW	CLR-15S
LBMAR08	LRIS-4*10	LLR-25S

## LBMA-S

### Screw-on toolholder for boring insert



Metric	DMIN	H	B	LF	LH	HF	WF	WF2	Insert
LBMAR10SGX	1 - 2.3	10	18	85	15	10	-	0	LBMD..S
LBMAR10S	1 - 2.3	10	18	120	15	10	-	0	LBMD..S
LBMAR12S	1 - 2.3	12	18	120	15	12	-	0	LBMD..S

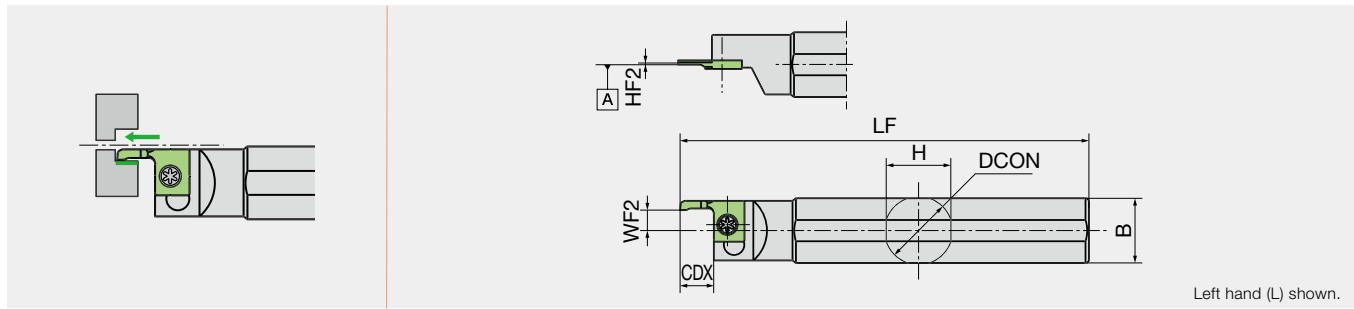
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
LBMAR10**	LRIS-4*10PW	CLR-15S
LBMAR12S	LRIS-4*12PW	CLR-15S

## DS-LBMB

Screw-on round-shank toolholder for boring insert



Metric	DMIN	H	B	LF	CDX	DCON	HF2	WF	WF2	Insert
DS-LBMBL14F	1 - 3	13	13	80	10	14	0	-	6.35	LBM.. LBMD..S
DS-LBMBL15H	1 - 3	15	15	100	10	15.875	0	-	6.35	LBM.. LBMD..S
DS-LBMBL16X	1 - 3	15	15	95	10	16	0	-	6.35	LBM.. LBMD..S
DS-LBMBL19	1 - 3	18	18	120	10	19.05	0	-	6.35	LBM.. LBMD..S
DS-LBMBL20	1 - 3	19	19	120	10	20	0	-	6.35	LBM.. LBMD..S
DS-LBMBL22	1 - 3	21	21	120	10	22	0	-	6.35	LBM.. LBMD..S
DS-LBMBL25	1 - 3	24	24	150	10	25.4	0	-	6.35	LBM.. LBMD..S
DS-LBMBL25-MET	1 - 3	24	24	120	10	25	0	-	6.35	LBM.. LBMD..S

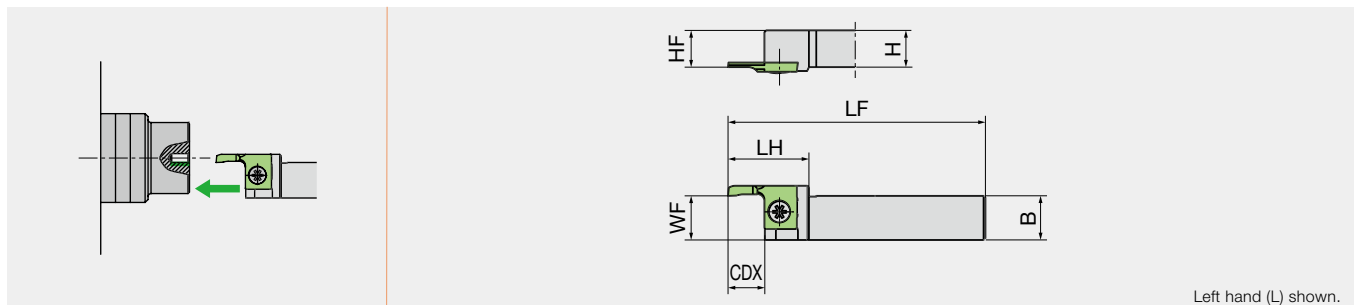
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
DS-LBMBL**	LRIS-4*10PW	CLR-15S

## CH-LBM

Screw-on toolholder for boring insert, for horizontal gang style tool post



Metric	DMIN	H	B	LF	LH	CDX	HF	WF	Insert
CH-LBML1012H	1 - 3	10	12	100	22	10	10	12.35	LBM.. LBMD..S
CH-LBML1212H	1 - 3	12	12	100	22	10	12	12.35	LBM.. LBMD..S

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CH-LBML**	LRIS-4*10PW	CLR-15S

Reference pages: : Insert → [4-40](#), [4-41](#)

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

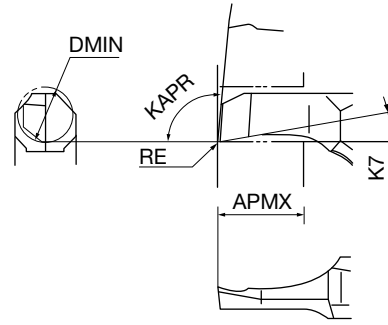
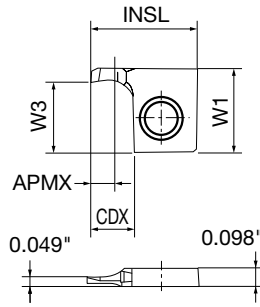
Drilling Tool

Technical Reference

# INSERT

## LBMD-S

Short type



Left hand (L) shown.

<b>P</b>	Steel	★
<b>M</b>	Stainless	☆
<b>N</b>	Non-ferrous	
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice

Designation	HAND	Coated		Mirror finish	DMIN (in)	APMX (in)	CDX (in)	INSL (in)	K7	KAPR	W1 (in)	W3 (in)	RE (in)
		VM1											
LBMD1020FLPB05S	L	●	●	M	0.039	0.079	0.236	0.591	10°	95°	0.472	0.394	0.002
LBMD1020FLVBS	L	●	●	M	0.039	0.079	0.236	0.591	10°	95°	0.472	0.394	0
LBMD1430FLPB05S	L	●	●	M	0.055	0.118	0.236	0.591	10°	95°	0.472	0.394	0.002
LBMD1430FLVBS	L	●	●	M	0.055	0.118	0.236	0.591	10°	95°	0.472	0.394	0
LBMD1730FLPB05S	L	●	●	M	0.067	0.118	0.236	0.591	10°	95°	0.472	0.394	0.002
LBMD1730FLVBS	L	●	●	M	0.067	0.118	0.236	0.591	10°	95°	0.472	0.394	0
LBMD2035FLPB05S	L	●	●	M	0.079	0.138	0.236	0.591	10°	95°	0.472	0.394	0.002
LBMD2035FLVBS	L	●	●	M	0.079	0.138	0.236	0.591	10°	95°	0.472	0.394	0
LBMD2335FLPB05S	L	●	●	M	0.091	0.138	0.236	0.591	10°	95°	0.472	0.394	0.002
LBMD2335FLVBS	L	●	●	M	0.091	0.138	0.236	0.591	10°	95°	0.472	0.394	0

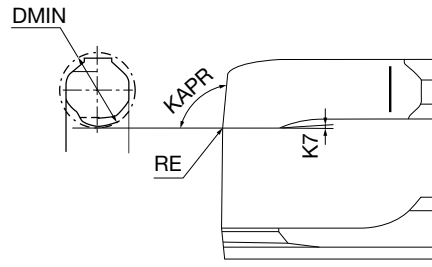
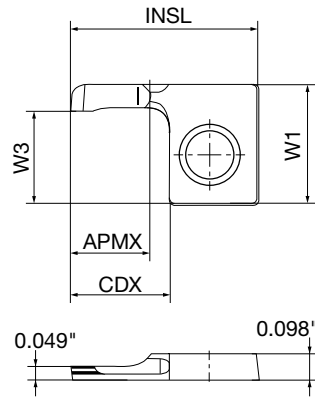
● : Line up



# INSERT

## LBM

Long type



Left hand (L) shown.

<b>P</b>	Steel	★	☆
<b>M</b>	Stainless	☆	★
<b>N</b>	Non-ferrous		★
<b>S</b>	Superalloys		
<b>H</b>	Hard materials		

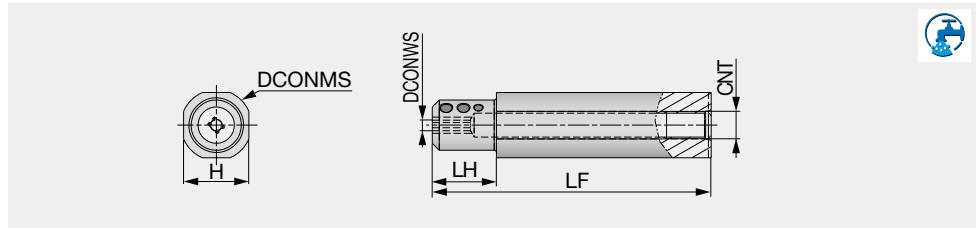
★ : First choice  
☆ : Second choice

Designation	HAND	Coated		Mirror finish	DMIN (in)	APMX (in)	CDX (in)	INSL (in)	K7	KAPR	W1 (in)	W3 (in)	RE (in)
		VM1	ZM3										
LBMD1020FLPB05	L	●		Ⓜ	0.039	0.079	0.390	0.744	10°	95°	0.472	0.394	0.002
LBMD1020FLVB	L	●		Ⓜ	0.039	0.079	0.390	0.744	10°	95°	0.472	0.394	0
LBMD2060FLPB05	L	●		Ⓜ	0.079	0.236	0.390	0.744	10°	95°	0.472	0.394	0.002
LBMD2060FLVB	L	●		Ⓜ	0.079	0.236	0.390	0.744	10°	95°	0.472	0.394	0
LBME2060FLP05	L	●		Ⓜ	0.079	0.236	0.390	0.744	2°	105°	0.472	0.394	0.002
LBME2060FLPB05	L	●		Ⓜ	0.079	0.236	0.390	0.744	2°	105°	0.472	0.394	0.002
LBME2060FLV	L	●		Ⓜ	0.079	0.236	0.390	0.744	2°	105°	0.472	0.394	0
LBME2060FLVB	L	●		Ⓜ	0.079	0.236	0.390	0.744	2°	105°	0.472	0.394	0
LBM3080FLPB05	L	●		Ⓜ	0.118	0.315	0.390	0.744	2°	90°	0.472	0.378	0.002
LBM3080FLVB	L	●		Ⓜ	0.118	0.315	0.390	0.744	2°	90°	0.472	0.378	0
LBMC3080FLP05	L	●	●	Ⓜ	0.118	0.315	0.390	0.744	2°	95°	0.472	0.378	0.002
LBMC3080FLPB05	L	●	●	Ⓜ	0.118	0.315	0.390	0.744	2°	95°	0.472	0.378	0.002
LBMC3080FLV	L	●	●	Ⓜ	0.118	0.315	0.390	0.744	2°	95°	0.472	0.378	0
LBMC3080FLVB	L	●	●	Ⓜ	0.118	0.315	0.390	0.744	2°	95°	0.472	0.378	0

● : Line up

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

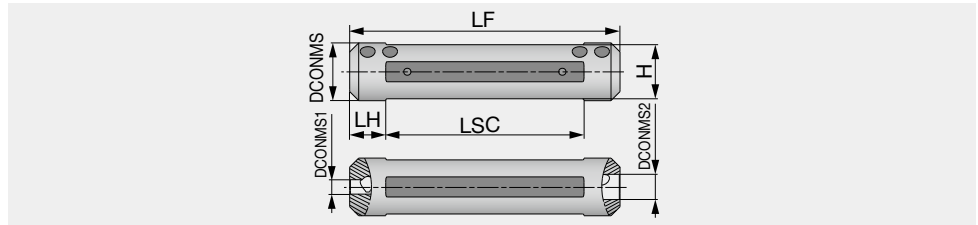
Sleeve for internal coolant supply with 4 coolant holes



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

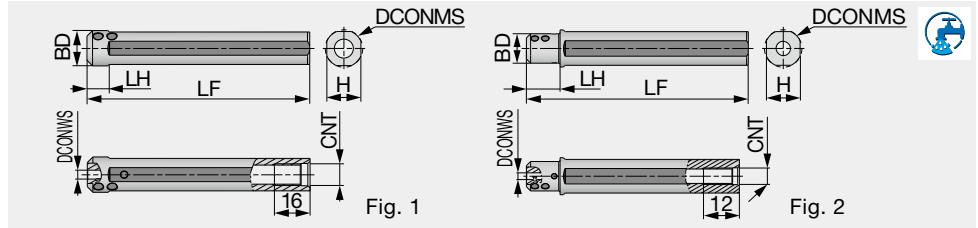
## SPARE PARTS



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

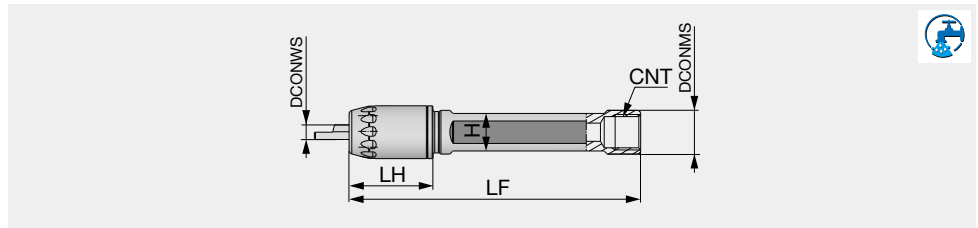
Sleeve for internal coolant supply



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

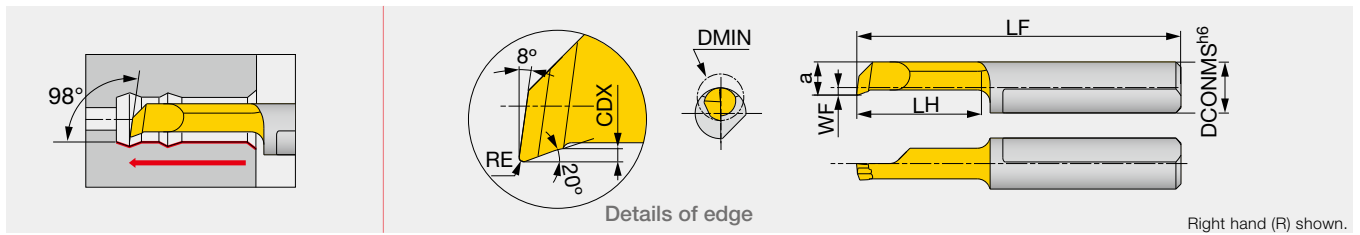


Metric	DCONMS	DCONWS	LF	LH	H	CNT
JBBSA16-4-L100C	16	4	100	23	14	Rc1/8
JBBSA16-7-L100C	16	7	100	23	14	Rc1/8
JBBSA20-4-L120C	20	4	120	23	18	Rc1/8
JBBSA20-7-L120C	20	7	120	23	18	Rc1/8

### 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

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

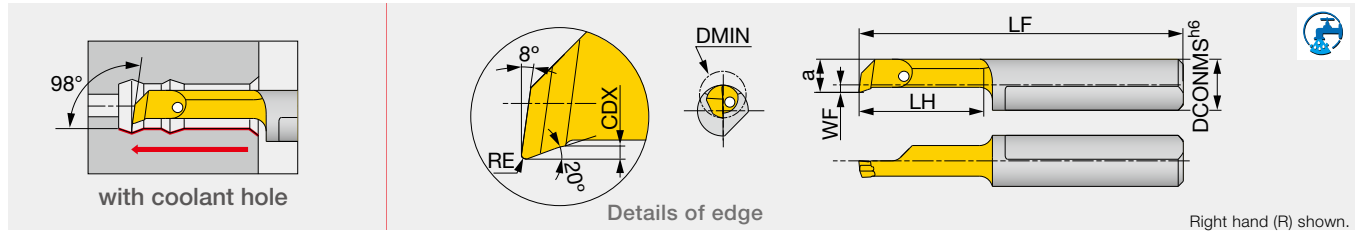


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE <sup>+0.05</sup> <sub>0</sub>
TBTR04045005-D010	●	1	4	-1.1	0.9	21	4.5	0.1	0.05
TBTR04065005-D010	●	1	4	-1.1	0.9	23	6.5	0.1	0.05
TBTR04040005-D020	●	2	4	-0.3	1.7	20.5	4	0.1	0.05
TBTR04090005-D020	●	2	4	-0.3	1.7	25.5	9	0.1	0.05
TBTR04140005-D020	●	2	4	-0.3	1.7	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

# JBTR/L

Solid boring bar for boring, profiling, and chamfering



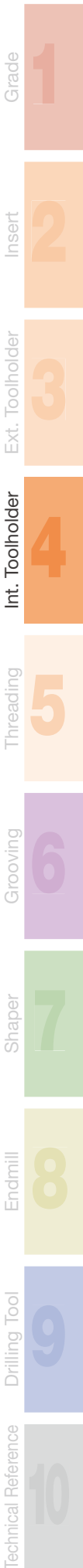
Right hand (R) shown.

Metric	SH725	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE <sup>+0.05</sup> <sub>0</sub>
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

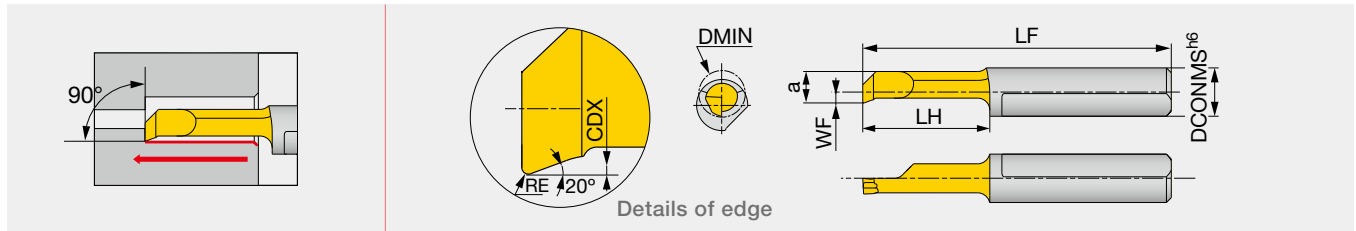
● : Line up

▲ : To be discontinued in April 2025

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



Solid boring bar for boring and chamfering

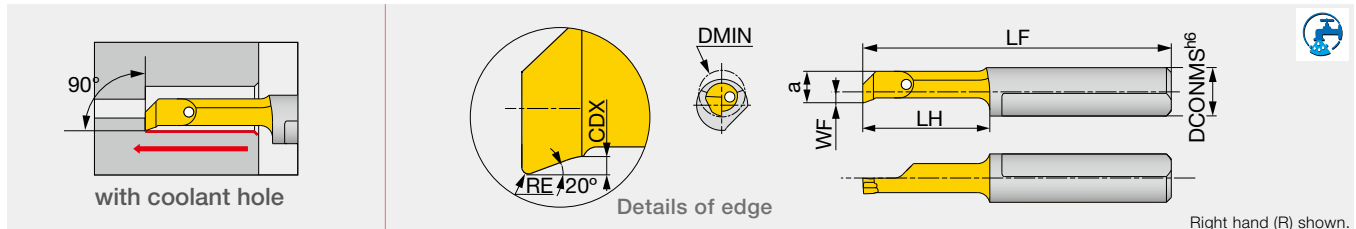


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE <sup>+0.05</sup> <sub>0</sub>
TBPR04090010-D028	●	2.8	4	0.9	2.6	25.5	9	0.2	0.1
TBPR04150010-D040	●	4	4	1.5	3.5	31.5	15	0.3	0.1
TBPR07140015-D050	●	5	7	0.9	4.4	30	14	0.5	0.15
TBPR07190015-D050	●	5	7	0.9	4.4	35	19	0.5	0.15

● : Line up

## JBPR

Solid boring bar for boring and chamfering



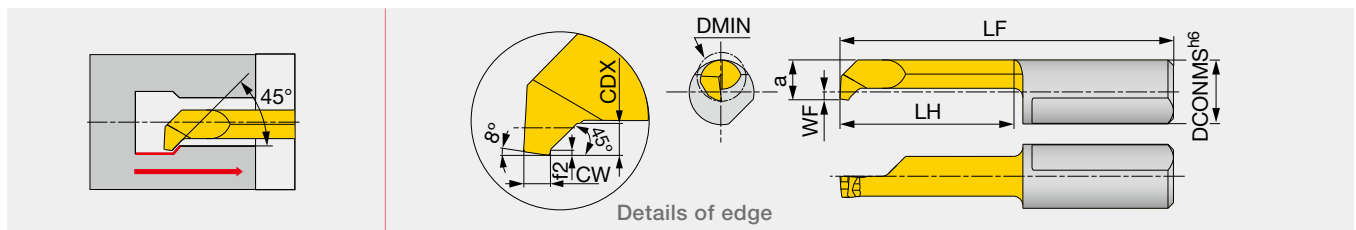
Metric	SH725	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE <sup>+0.05</sup> <sub>0</sub>
JBPR04090010-D028	●	▲	2.8	4	0.9	2.6	25.5	9	0.2	0.1
JBPR04150010-D028	●	▲	2.8	4	0.9	2.6	31.5	15	0.2	0.1
JBPR04090010-D040	●	▲	4	4	1.5	3.5	25.5	9	0.3	0.1
JBPR04150010-D040	●	▲	4	4	1.5	3.5	31.5	15	0.3	0.1
JBPR07140015-D050	●	▲	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

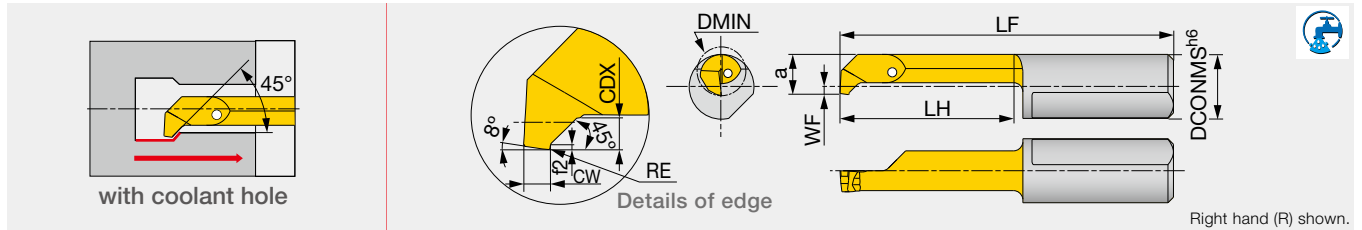


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	f2	CDX	CW <sup>+0.05</sup> <sub>0</sub>
TBUR07140010-D050	●	5	7	0.9	4.4	30	14	0.2	1	1
TBUR07190010-D050	●	5	7	0.9	4.4	35	19	0.2	1	1

● : Line up

## JBUR

Solid boring bar for back boring and chamfering

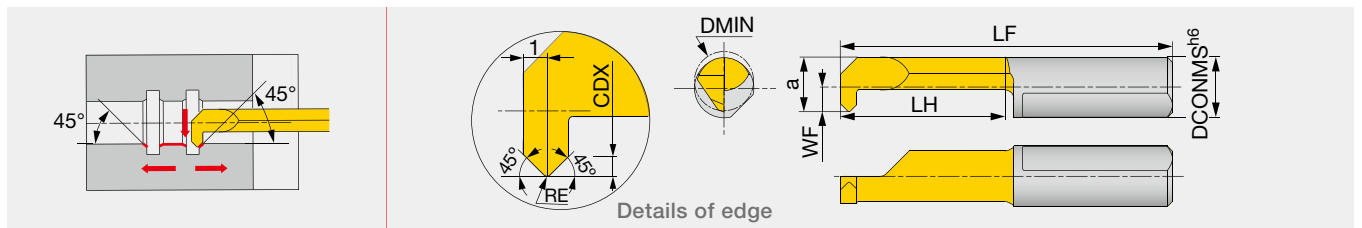


Metric	SH725	SH730	DMIN	DCONMS	WF	a	LF	LH	f2	CDX	CW <sup>+0.05</sup> <sub>0</sub>	RE
JBUR07140010-D050	●	▲	5	7	0.9	4.4	30	14	0.2	1	1	0.1
JBUR07190010-D050	●	▲	5	7	0.9	4.4	35	19	0.2	1	1	0.1

● : Line up  
▲ : To be discontinued in April 2025

## TBCR

Solid boring bar for boring and 45° chamfering

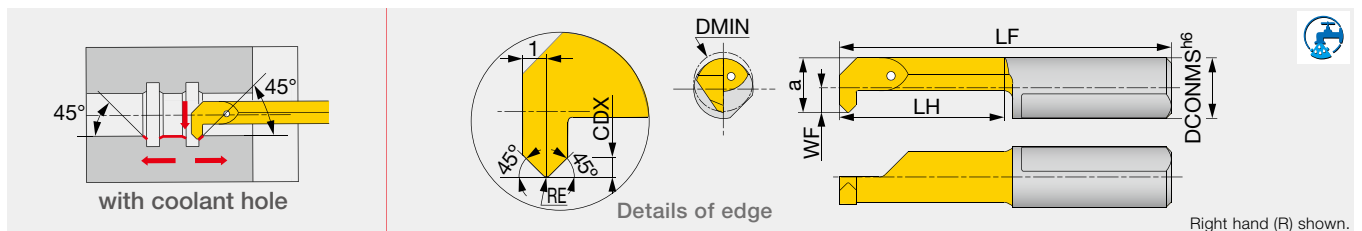


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE <sup>+0.05</sup> <sub>0</sub>
TBCR07140020-D050	●	5	7	0.9	4.4	30	14	0.7	0.2
TBCR07190020-D068	●	6.8	7	2.8	6.3	35	19	0.7	0.2

● : Line up

## JBCR

Solid boring bar for boring and 45° chamfering



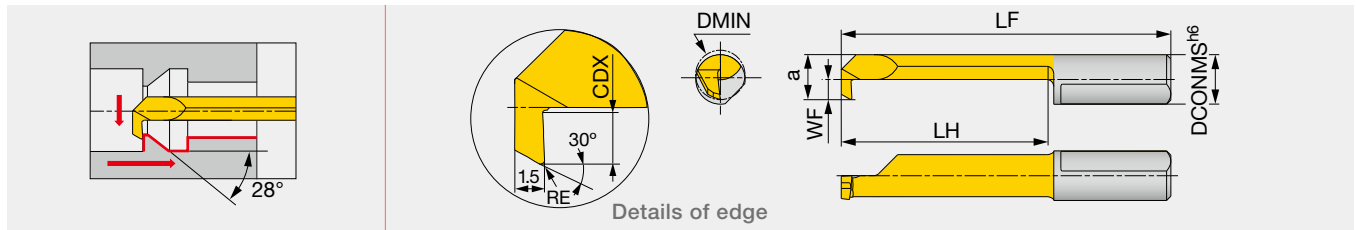
Metric	SH725	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE <sup>±0.05</sup>
JBCR07140020-D050	●	▲	5	7	0.9	4.4	30	14	0.7	0.2
JBCR07190020-D050	●	▲	5	7	0.9	4.4	35	19	0.7	0.2
JBCR07190020-D068	●	▲	6.8	7	2.8	6.3	35	19	0.7	0.2

● : Line up  
▲ : To be discontinued in April 2025

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

### Solid boring bar for back boring

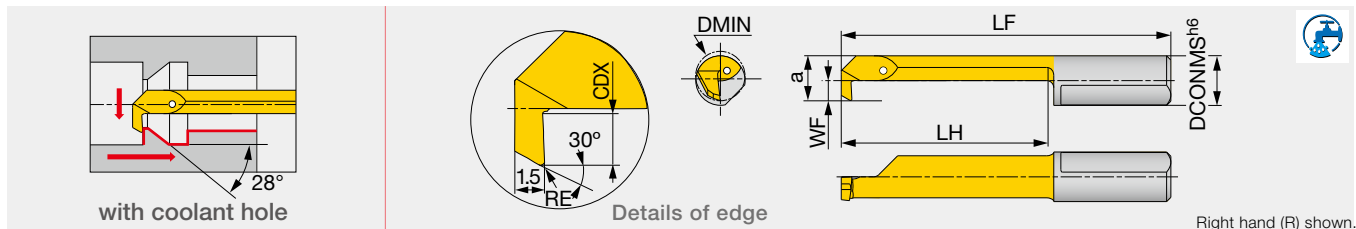


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE <sup>+0.05</sup>
TBBR04140020-D030	●	3	4	0.6	2.6	30	14	0.5	0.2
TBBR04140015-D040	●	4	4	1.5	3.5	30	14	0.8	0.15
TBBR07190020-D050	●	5	7	0.9	4.4	35	19	1	0.2

● : Line up

### JBBR

### Solid boring bar for back boring



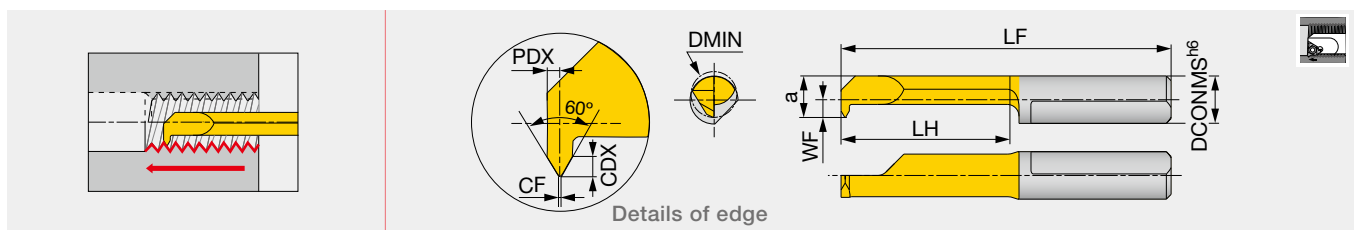
Metric	SH725	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE <sup>+0.05</sup>
JBBR04140020-D030	●	▲	3	4	0.6	2.6	30	14	0.5	0.2
JBBR04190020-D030	●	▲	3	4	0.6	2.6	35	19	0.5	0.2
JBBR04140015-D040	●	▲	4	4	1.5	3.5	30	14	0.8	0.15
JBBR04240015-D040	●	▲	4	4	1.5	3.5	40	24	0.8	0.15
JBBR07190020-D050	●	▲	5	7	0.9	4.4	35	19	1	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)



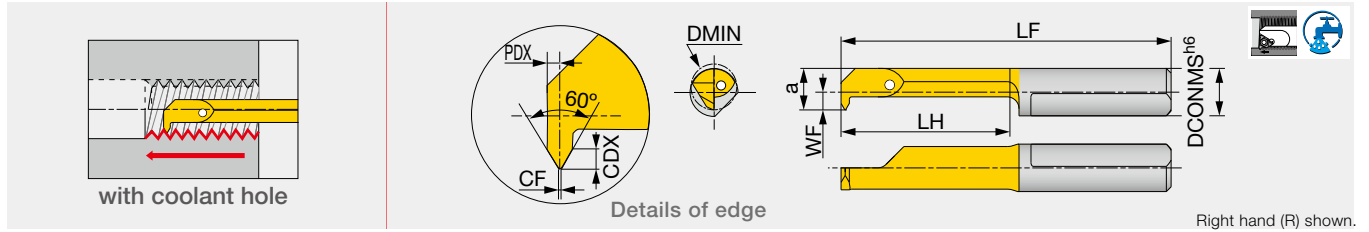
Metric	SH725	Pitch	DMIN	CF <sup>0</sup> <sub>-0.02</sub>	DCONMS	WF	a	LF	LH	CDX	PDX
TBIR04140050-D040	●	0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
TBIR07140050-D050	●	0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
TBIR07140075-D050	●	0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
TBIR07140100-D048	●	1	4.8	0.12	7	0.9	4.4	30	14	0.6	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 bar for threading (metric)



Right hand (R) shown.

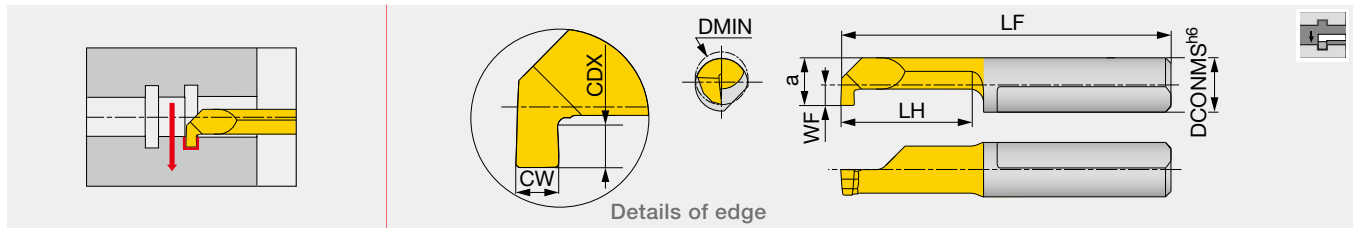
Metric	SH725	SH730	Pitch	DMIN	CF <sub>0.02</sub>	DCONMS	WF	a	LF	LH	CDX	PDX
JBIR04140050-D040	●	▲	0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
JBIR07140050-D050	●	▲	0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
JBIR07140075-D050	●	▲	0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
JBIR07140100-D048	●	▲	1	4.8	0.12	7	0.9	4.4	30	14	0.6	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



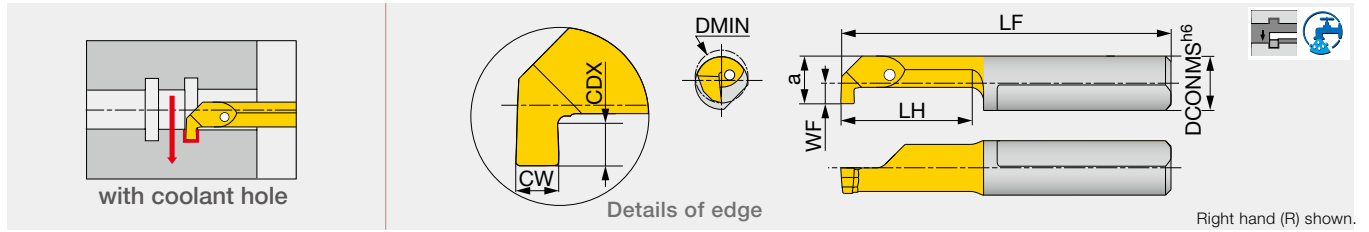
Metric	SH725	CW <sup>+0.05</sup> <sub>0</sub>	DMIN	DCONMS	WF	a	LF	LH	CDX
TBGR04100050-D020	●	0.5	2	4	-0.2	1.8	26	10	0.4
TBGR04090100-D040	●	1	4	4	1.5	3.5	25.5	9	0.8
TBGR04150100-D040	●	1	4	4	1.5	3.5	31.5	15	0.8
TBGR07090200-D050	●	2	5	7	0.9	4.4	25	9	1
TBGR07090100-D060	●	1	6	7	1.8	5.3	25	9	1.8
TBGR07140100-D060	●	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

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

### Solid boring bar for internal grooving



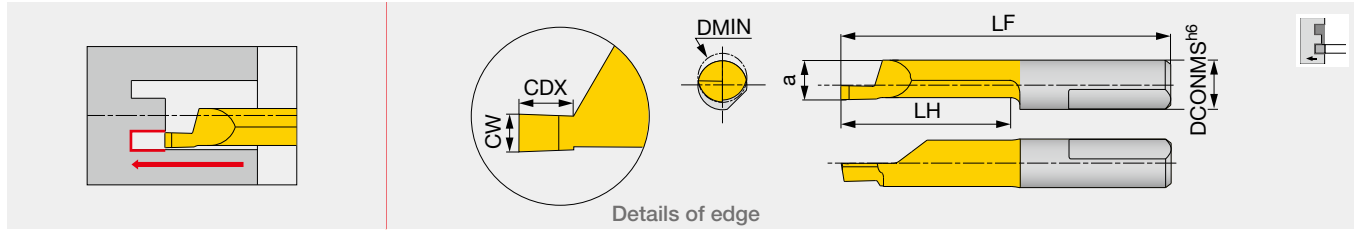
Metric	SH725	SH730	CW <sup>+0.05</sup> <sub>0</sub>	DMIN	DCONMS	WF	a	LF	LH	CDX
JBGR04050050-D020	●	▲	0.5	2	4	-0.2	1.8	21	5	0.4
JBGR04100050-D020	●	▲	0.5	2	4	-0.2	1.8	26	10	0.4
JBGR04050070-D030	●	▲	0.7	3	4	0.7	2.7	21	5	0.6
JBGR04100070-D030	●	▲	0.7	3	4	0.7	2.7	26	10	0.6
JBGR04090100-D040	●	▲	1	4	4	1.5	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

# TBFR

## Solid boring bar for face grooving



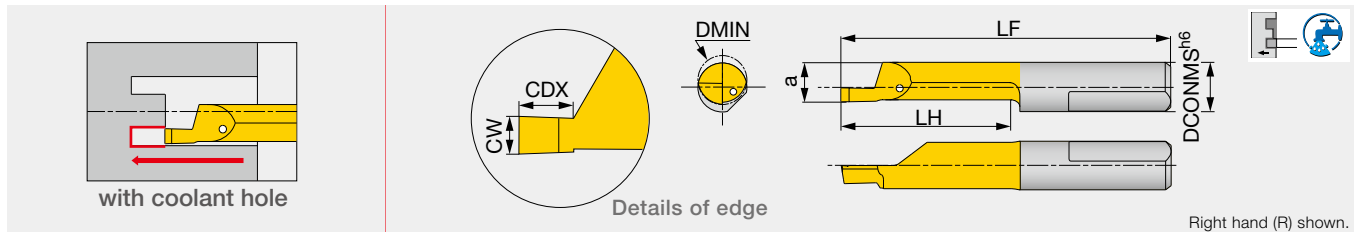
Metric	SH725	CW <sup>+0.05</sup> <sub>0</sub>	DMIN	DCONMS	a	LF	LH	CDX
TBFR07110100-D060	●	1	6	7	5.2	26	10	1.5
TBFR07110200-D060	●	2	6	7	5.2	26	10	3
TBFR07110100-D080	●	1	8	7	5.9	27	11	1.5
TBFR07110250-D080	●	2.5	8	7	5.9	27	11	3.5
TBFR07300300-D080	●	3	8	7	5.9	46	30	3.5
TBFR07200250-D150	●	2.5	15	7	5.9	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



Metric	SH725	SH730	CW <sup>+0.05</sup> <sub>0</sub>	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

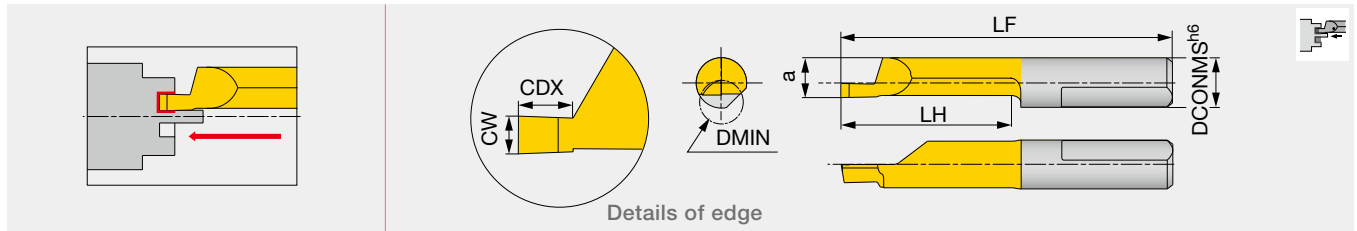
● : Line up

▲ : To be discontinued in April 2025

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



### Solid boring bar for face grooving (for shaft)



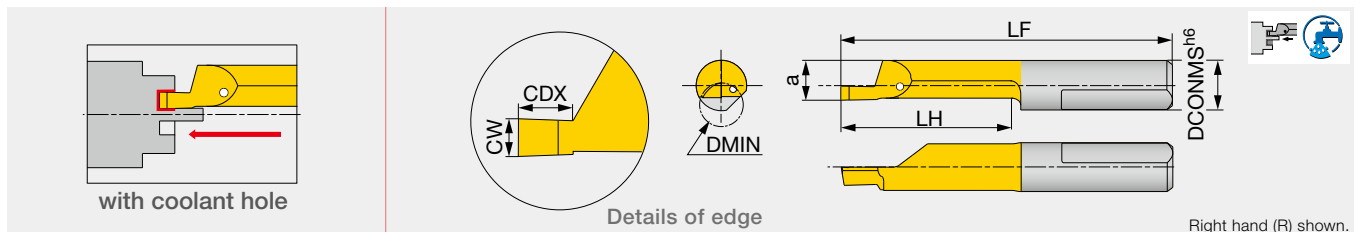
Metric	SH725	$CW^{+0.05}_0$	DMIN	DCONMS	a	LF	LH	CDX
TBSR07200200-D060	●	2	6	7	5.2	36	20	4

Corner radius : less than 0.1 mm.

● : Line up

### JBSR

### Solid boring bar for face grooving (for shaft)



Metric	SH725	SH730	$CW^{+0.05}_0$	DMIN	DCONMS	a	LF	LH	CDX
JBSR07200200-D060	●	▲	2	6	7	5.2	36	20	4

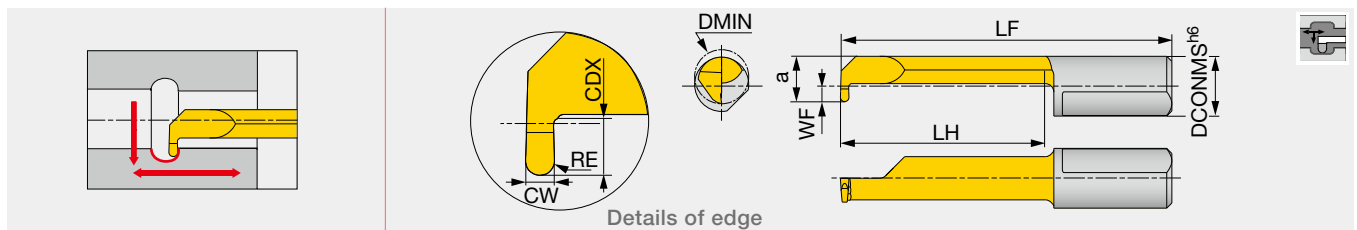
Corner radius: less than 0.1 mm

● : Line up

▲ : To be discontinued in April 2025

### TBRR

### Solid boring bar for boring and profiling

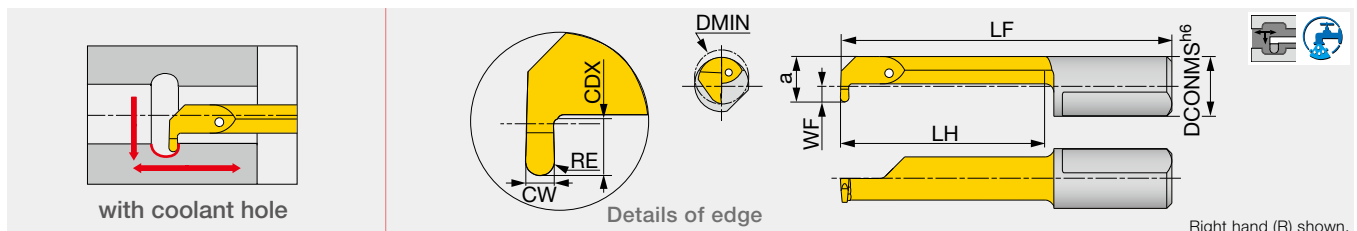


Metric	SH725	$CW^{+0.05}_0$	DMIN	DCONMS	WF	a	LF	LH	CDX	RE
TBRR07190050-D050	●	1	5	7	0.9	4.4	35	19	1	0.5
TBRR07240050-D060	●	1	6	7	1.8	5.3	40	24	1.8	0.5
TBRR07290050-D068	●	1	6.8	7	2.8	6.3	45	29	2.5	0.5

● : Line up

### JBRR

### Solid boring bar for boring and profiling



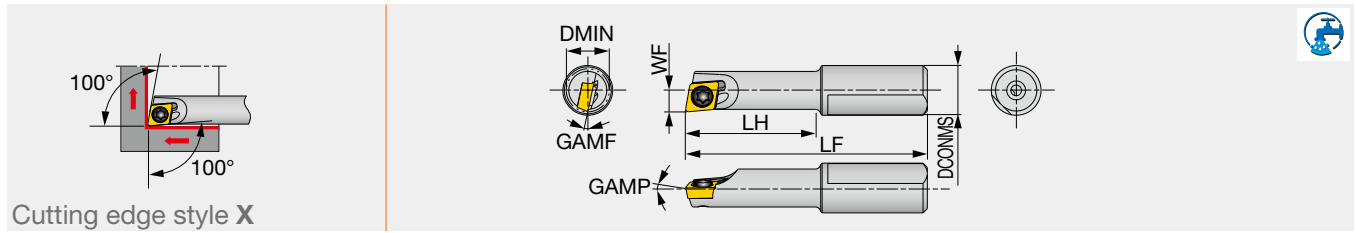
Metric	SH725	SH730	$CW^{+0.05}_0$	DMIN	DCONMS	WF	a	LF	LH	CDX	RE
JBRR07190050-D050	●	▲	1	5	7	0.9	4.4	35	19	1	0.5
JBRR07240050-D060	●	▲	1	6	7	1.8	5.3	40	24	1.8	0.5
JBRR07290050-D068	●	▲	1	6.8	7	2.8	6.3	45	29	2.5	0.5

● : Line up

▲ : To be discontinued in April 2025

## A/E-SEXPR

Screw-on boring bar, for positive 75° rhombic inserts



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

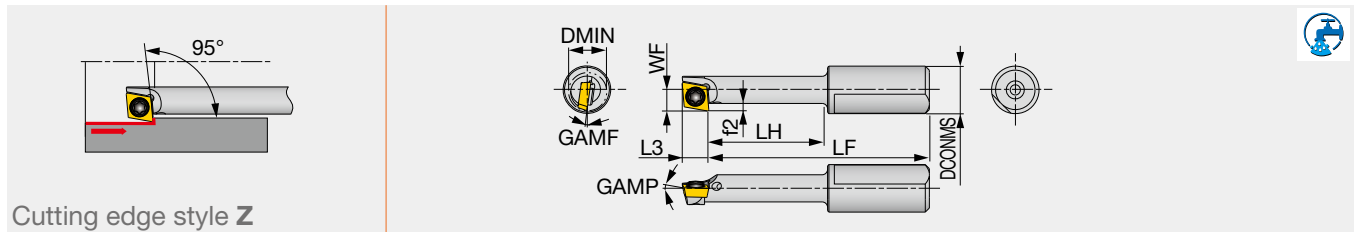
\*Torque: Recommended clamping torque (N-m)

\*\*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



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

# TINYTURN<sup>INI</sup>

## 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)
<b>P</b>	Low carbon steel 1015, 1025, etc.	SH730, SH725	40 - 140	131 - 459	0.01 - 0.08 *	0.0004 - 0.003 *
	Carbon steel, Alloy steel 1055, 4140, etc.	SH730, SH725	40 - 140	131 - 459	0.01 - 0.08 *	0.0004 - 0.003 *
	Prehardened steels NAK80, PX5, etc.	SH730, SH725	40 - 140	131 - 459	0.01 - 0.08 *	0.0004 - 0.003 *
<b>M</b>	Stainless steel 304, 316, etc.	SH730, SH725	40 - 140	131 - 459	0.01 - 0.08 *	0.0004 - 0.003 *
<b>K</b>	Gray cast iron No.250B, No.300B, etc.	SH730, SH725	30 - 100	98 - 328	0.01 - 0.08 *	0.0004 - 0.003 *
	Ductile cast iron 65-45-12, 80-55-06, etc.	SH730, SH725	30 - 100	98 - 328	0.01 - 0.08 *	0.0004 - 0.003 *
<b>N</b>	Aluminum alloys, Copper alloys Si < 12%	SH730, SH725	90 - 200	295 - 656	0.01 - 0.08 *	0.0004 - 0.003 *
<b>S</b>	Titanium alloys Ti-6Al-4V, etc.	SH730, SH725	30 - 100	98 - 328	0.01 - 0.08 *	0.0004 - 0.003 *
	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)

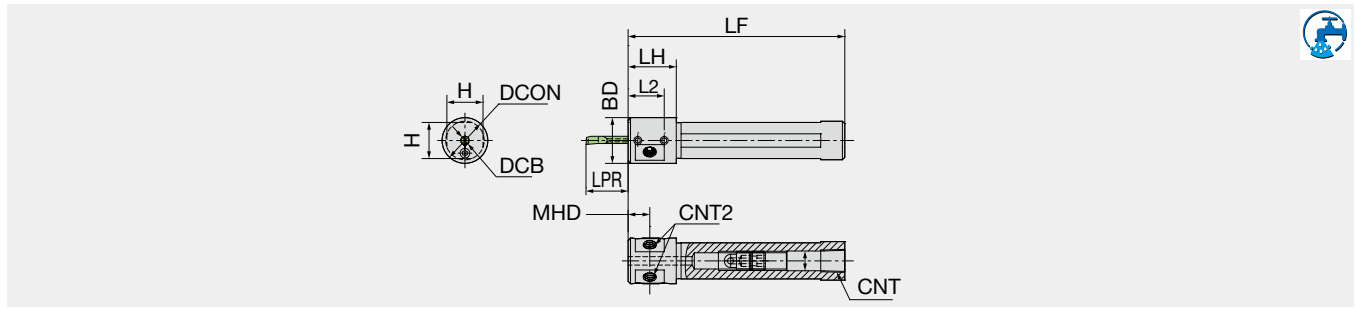
ISO	Workpiece material	Grade	Cutting speed Vc (m/min)	Cutting speed Vc (sfm)	Number of passes Pitch (mm)				
					0.5 (0.020")	0.75 (0.030")	1 (0.039")	1.25 (0.049")	1.5 (0.059")
<b>P</b>	Low carbon steel 1015, 1025, etc.	SH730, SH725	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
	Carbon steel, Alloy steel 1055, 4140, etc.	SH730, SH725	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
	Prehardened steels NAK80, PX5, etc.	SH730, SH725	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
<b>M</b>	Stainless steel 304, 316, etc.	SH730, SH725	40 - 140	131 - 459	8	10	12	15	18
<b>K</b>	Gray cast iron No.250B, No.300B, etc.	SH730, SH725	30 - 100	98 - 328	7	9	12	14	17
	Ductile cast iron 65-45-12, 80-55-06, etc.	SH730, SH725	30 - 100	98 - 328	7	9	12	14	17
<b>N</b>	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		Face grooving	
					Feed: f (mm/rev)	Feed: f (ipr)	Feed: f (mm/rev)	Feed: f (ipr)
<b>P</b>	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
	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
	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
<b>M</b>	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
<b>K</b>	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
	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
<b>N</b>	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
<b>S</b>	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
	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

# HY-NBH-OH

Sleeve for internal coolant supply, with adjustable overhang capability



Metric	DCON	DCB	H	BD	LF	LH	LPR	L2	MHD	CNT	CNT2	Applicable Insert bar
HY-NBH02016G-OH	16	2	15	19	90	19	5 - 18	15	9.5	Rc1/8	M6×P1.0	SB(H)F../SSP..
HY-NBH02516G-OH	16	2.5	15	19	90	19	6.3 - 19.5	15	9.5	Rc1/8	M6×P1.0	SB(H)F../SB*../SSP..
HY-NBH03016G-OH	16	3	15	19	90	19	7.5 - 21	15	9.5	Rc1/8	M6×P1.0	SB(H)F../SB*../SSP..
HY-NBH03516G-OH	16	3.5	15	19	90	19	8.8 - 24.5	15	9.5	Rc1/8	M6×P1.0	SB(H)F../SB*../SSP..
HY-NBH04016G-OH	16	4	15	19	90	24	10 - 28	20	12	Rc1/8	M6×P1.0	SB(H)F../SB*../SSP..
HY-NBH05016G-OH	16	5	15	19	90	24	12.5 - 35	20	12	Rc1/8	M6×P1.0	SB(H)F../SB*../SSP..

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

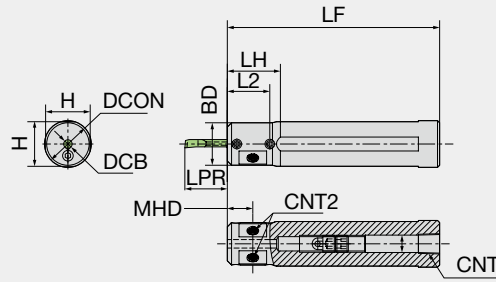
Endmill

Drilling Tool

Technical Reference

# HY-NBH-OH

Sleeve for internal coolant supply, with adjustable overhang capability

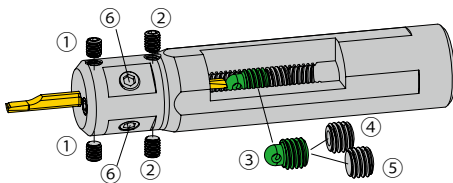


Metric	DCON	DCB	H	BD	LF	LH	LPR	L2	MHD	CNT	CNT2	Applicable Insert bar
HY-NBH02019J-OH	19.05	2	18	19.05	110	-	5 - 18	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SSP.
HY-NBH02519J-OH	19.05	2.5	18	19.05	110	-	6.3 - 19.5	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH03019J-OH	19.05	3	18	19.05	110	-	7.5 - 21	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH03519J-OH	19.05	3.5	18	19.05	110	-	8.8 - 24.5	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH04019J-OH	19.05	4	18	19.05	110	-	10 - 28	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH05019J-OH	19.05	5	18	19.05	110	-	12.5 - 35	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH06019J-OH	19.05	6	18	19.05	110	-	15 - 42	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP./SFG..
HY-NBH02020J-OH	20	2	19	20	110	-	5 - 18	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SSP.
HY-NBH02520J-OH	20	2.5	19	20	110	-	6.3 - 19.5	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH03020J-OH	20	3	19	20	110	-	7.5 - 21	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH03520J-OH	20	3.5	19	20	110	-	8.8 - 24.5	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH04020J-OH	20	4	19	20	110	-	10 - 28	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH05020J-OH	20	5	19	20	110	-	12.5 - 35	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH06020J-OH	20	6	19	20	110	-	15 - 42	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP./SFG..
HY-NBH02022X-OH	22	2	21	20	120	25	5 - 18	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SSP.
HY-NBH02522X-OH	22	2.5	21	20	120	25	6.3 - 19.5	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH03022X-OH	22	3	21	20	120	25	7.5 - 21	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH03522X-OH	22	3.5	21	20	120	25	8.8 - 24.5	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH04022X-OH	22	4	21	20	120	25	10 - 28	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH05022X-OH	22	5	21	20	120	25	12.5 - 35	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH06022X-OH	22	6	21	20	120	25	15 - 42	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP./SFG..
HY-NBH02025.0K-OH	25	2	24	20	125	25	5 - 18	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SSP.
HY-NBH02525.0K-OH	25	2.5	24	20	125	25	6.3 - 19.5	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH03025.0K-OH	25	3	24	20	125	25	7.5 - 21	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH03525.0K-OH	25	3.5	24	20	125	25	8.8 - 24.5	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH04025.0K-OH	25	4	24	20	125	25	10 - 28	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH05025.0K-OH	25	5	24	20	125	25	12.5 - 35	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH06025.0K-OH	25	6	24	20	125	25	15 - 42	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP./SFG..
HY-NBH02025.4K-OH	25.4	2	24	20	125	25	5 - 18	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SSP.
HY-NBH02525.4K-OH	25.4	2.5	24	20	125	25	6.3 - 19.5	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH03025.4K-OH	25.4	3	24	20	125	25	7.5 - 21	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH03525.4K-OH	25.4	3.5	24	20	125	25	8.8 - 24.5	15	9.5	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH04025.4K-OH	25.4	4	24	20	125	25	10 - 28	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH05025.4K-OH	25.4	5	24	20	125	25	12.5 - 35	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP.
HY-NBH06025.4K-OH	25.4	6	24	20	125	25	15 - 42	20	12	Rc1/8	M6xP1.0	SB(H)F./SB*./SSP./SFG..

## SPARE PARTS



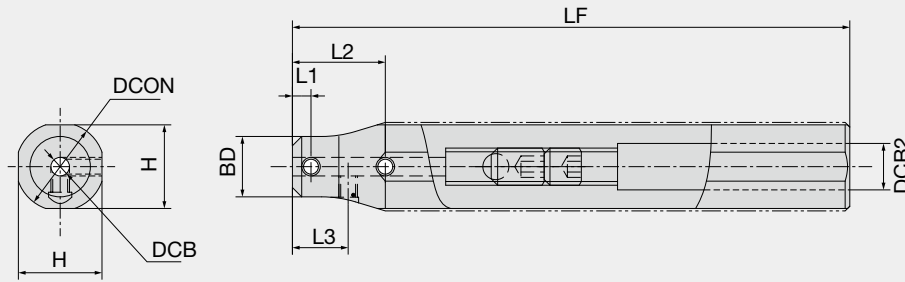
Designation	Clamp screw		Overhang Adjustment			M6 Screw	Wrench		
	①	②	③	④	⑤	⑥	①②	③④⑤	⑥
HY-NBH*-OH	SS04045FS	SS0406F	SS0811R-OH	SS0806F-OH	SS0806F	SS0605SC	LW-2	LW-4*104	LW-3





# HY-NBH

Sleeve for external coolant supply, with adjustable overhang capability

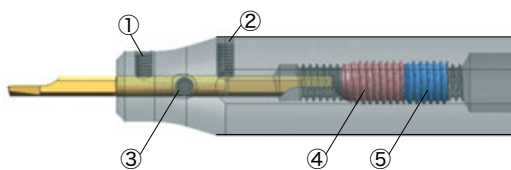


Metric	DCON	DCB	H	BD	LF	DCB2	L1	L2	L3	Applicable Insert bar
HY-NBH02016H	16	2	15	11	100	10	4	15	9.5	SB(H)F./SSP..
HY-NBH02516H	16	2.5	15	11.5	100	10	4	15	9.5	SB(H)F./SB*./SSP..
HY-NBH03016H	16	3	15	12	100	10	4	15	9.5	SB(H)F./SB*./SSP..
HY-NBH03516H	16	3.5	15	12.5	100	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH04016H	16	4	15	13	100	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH05016H	16	5	15	14	100	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH02019K	19.05	2	18	11	125	10	4	15	9.5	SB(H)F./SSP..
HY-NBH02519K	19.05	2.5	18	11.5	125	10	4	15	9.5	SB(H)F./SB*./SSP..
HY-NBH03019K	19.05	3	18	12	125	10	4	15	9.5	SB(H)F./SB*./SSP..
HY-NBH03519K	19.05	3.5	18	12.5	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH04019K	19.05	4	18	13	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH05019K	19.05	5	18	14	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH02020K	20	2	19	11	125	10	4	15	9.5	SB(H)F./SSP..
HY-NBH02520K	20	2.5	19	11.5	125	10	4	15	9.5	SB(H)F./SB*./SSP..
HY-NBH03020K	20	3	19	12	125	10	4	15	9.5	SB(H)F./SB*./SSP..
HY-NBH03520K	20	3.5	19	12.5	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH04020K	20	4	19	13	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH05020K	20	5	19	14	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH02022K	22	2	21	11	125	10	4	15	9.5	SB(H)F./SSP..
HY-NBH02522K	22	2.5	21	11.5	125	10	4	15	9.5	SB(H)F./SB*./SSP..
HY-NBH03022K	22	3	21	12	125	10	4	15	9.5	SB(H)F./SB*./SSP..
HY-NBH03522K	22	3.5	21	12.5	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH04022K	22	4	21	13	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH05022K	22	5	21	14	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH02025K-MET	25	2	24	11	125	10	4	15	9.5	SB(H)F./SSP..
HY-NBH02525K-MET	25	2.5	24	11.5	125	10	4	15	9.5	SB(H)F./SB*./SSP..
HY-NBH03025K-MET	25	3	24	12	125	10	4	15	9.5	SB(H)F./SB*./SSP..
HY-NBH03525K-MET	25	3.5	24	12.5	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH04025K-MET	25	4	24	13	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH05025K-MET	25	5	24	14	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH02025K	25.4	2	24	11	125	10	4	15	9.5	SB(H)F./SSP..
HY-NBH02525K	25.4	2.5	24	11.5	125	10	4	15	9.5	SB(H)F./SB*./SSP..
HY-NBH03025K	25.4	3	24	12	125	10	4	15	9.5	SB(H)F./SB*./SSP..
HY-NBH03525K	25.4	3.5	24	12.5	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH04025K	25.4	4	24	13	125	10	4	20	12	SB(H)F./SB*./SSP..
HY-NBH05025K	25.4	5	24	14	125	10	4	20	12	SB(H)F./SB*./SSP..

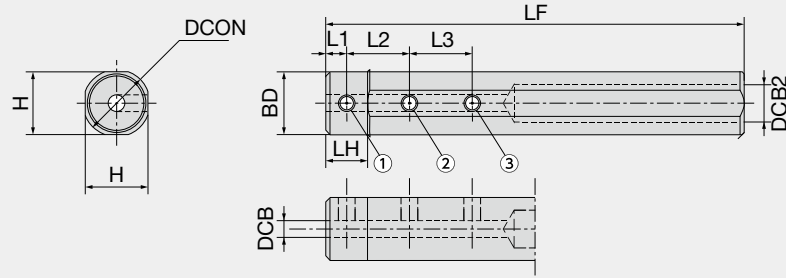
## SPARE PARTS



Designation	Clamp screw			Overhang Adjustment		Wrench	
	①	②	③	④	⑤	①②③	④⑤
HY-NBH**	SS04045FS	SS0406F	SS0404F	SS0812R	SS0808F	LW-2	LW-4*104



Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10



Metric	DCON	DCB	H	BD	LF	LH	DCB2	L1	L2	L3	Insert
NBH02015H	15.875	2	15	15	100	10	9	5	10	-	SB(H)F./SSP..
NBH02515H	15.875	2.5	15	15	100	10	9	5	10	-	SB(H)F./SB*./SSP..
NBH03015H	15.875	3	15	15	100	10	9	5	10	10	SB(H)F./SB*./SSP..
NBH03515H	15.875	3.5	15	15	100	10	9	5	10	10	SB(H)F./SB*./SSP..
NBH04015H	15.875	4	15	15	100	10	9	5	15	15	SB(H)F./SB*./SSP..
NBH04515H	15.875	4.5	15	15	100	10	9	5	15	15	-
NBH05015H	15.875	5	15	15	100	10	9	5	15	15	SB(H)F./SB*./SSP..
NBH06015H	15.875	6	15	15	100	10	9	5	20	20	SB(H)F./SB*./SSP../SFG..
NBH08015H	15.875	8	15	15	100	10	9	5	20	20	SB(H)F./SB*./SSP../SFG..
NBH02016H	16	2	15	15	100	10	9	5	10	-	SB(H)F./SSP..
NBH02516H	16	2.5	15	15	100	10	9	5	10	-	SB(H)F./SB*./SSP..
NBH03016H	16	3	15	15	100	10	9	5	10	10	SB(H)F./SB*./SSP..
NBH03516H	16	3.5	15	15	100	10	9	5	10	10	SB(H)F./SB*./SSP..
NBH04016H	16	4	15	15	100	10	9	5	15	15	SB(H)F./SB*./SSP..
NBH04516H	16	4.5	15	15	100	10	9	5	15	15	-
NBH05016H	16	5	15	15	100	10	9	5	15	15	SB(H)F./SB*./SSP..
NBH06016H	16	6	15	15	100	10	9	5	20	20	SB(H)F./SB*./SSP../SFG..
NBH07016H	16	7	15	15	100	10	9	5	20	20	SB(H)F./SB*..
NBH08016H	16	8	15	15	100	10	9	5	20	20	SB(H)F./SB*./SSP../SFG..
NBH02019K	19.05	2	18	18	125	10	11	5	10	-	SB(H)F./SSP..
NBH02519K	19.05	2.5	18	18	125	10	11	5	10	-	SB(H)F./SB*./SSP..
NBH03019K	19.05	3	18	18	125	10	11	5	10	10	SB(H)F./SB*./SSP..
NBH03519K	19.05	3.5	18	18	125	10	11	5	10	10	SB(H)F./SB*./SSP..
NBH04019K	19.05	4	18	18	125	10	11	5	15	15	SB(H)F./SB*./SSP..
NBH04519K	19.05	4.5	18	18	125	10	11	5	15	15	-
NBH05019K	19.05	5	18	18	125	10	11	5	15	15	SB(H)F./SB*./SSP..
NBH06019K	19.05	6	18	18	125	10	11	5	20	20	SB(H)F./SB*./SSP../SFG..
NBH07019K	19.05	7	18	18	125	10	11	5	20	20	SB(H)F./SB*..
NBH08019K	19.05	8	18	18	125	10	11	5	20	20	SB(H)F./SB*./SSP../SFG..
NBH10019K	19.05	10	18	18	125	10	11	5	20	20	-

**SPARE PARTS**



Designation	①	Clamp screw ②	③	Wrench (for Clamp screw) ①②
NBH02015H	SS0406F	SS0406F	-	LW-2
NBH02515H	SS0406F	SS0406F	-	LW-2
NBH03015H	SS0404F	SS0404F	SS0404F	LW-2
NBH03515H	SS0404F	SS0404F	SS0404F	LW-2
NBH04015H	SS0404F	SS0404F	SS0404F	LW-2
NBH04515H	SS0404F	SS0404F	SS0404F	LW-2
NBH05015H	SS0404F	SS0404F	SS0404F	LW-2
NBH06015H	SS0404F	SS0404F	SS0404F	LW-2
NBH08015H	SS0403F	SS0403F	SS0403F	LW-2
NBH02016H	SS0406F	SS0406F	-	LW-2
NBH02516H	SS0406F	SS0406F	-	LW-2
NBH03016H	SS0404F	SS0404F	SS0404F	LW-2
NBH03516H	SS0404F	SS0404F	SS0404F	LW-2
NBH04016H	SS0404F	SS0404F	SS0404F	LW-2
NBH04516H	SS0404F	SS0404F	SS0404F	LW-2
NBH05016H	SS0404F	SS0404F	SS0404F	LW-2
NBH06016H	SS0404F	SS0404F	SS0404F	LW-2
NBH07016H	SS0403F	SS0404F	SS0404F	LW-2
NBH08016H	SS0403F	SS0403F	SS0403F	LW-2
NBH02019K	SS0408F	SS0408F	-	LW-2
NBH02519K	SS0408F	SS0408F	-	LW-2
NBH03019K	SS0406F	SS0406F	SS0406F	LW-2
NBH03519K	SS0406F	SS0406F	SS0406F	LW-2
NBH04019K	SS0406F	SS0406F	SS0406F	LW-2
NBH04519K	SS0406F	SS0406F	SS0406F	LW-2
NBH05019K	SS0406F	SS0406F	SS0406F	LW-2
NBH06019K	SS0406F	SS0406F	SS0406F	LW-2
NBH07019K	SS0404F	SS0404F	SS0404F	LW-2
NBH08019K	SS0404F	SS0404F	SS0404F	LW-2
NBH10019K	SS0403F	SS0404F	SS0404F	LW-2

Grade



Insert



Ext. Toolholder



Int. Toolholder



Threading



Grooving



Shaper



Endmill

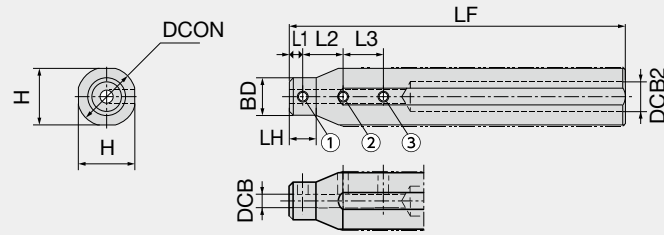


Drilling Tool



Technical Reference





Metric	DCON	DCB	H	BD	LF	LH	DCB2	L1	L2	L3	Insert
NBH02020K	20	2	19	11	125	10	11	5	10	-	SB(H)F../SSP..
NBH02520K	20	2.5	19	11	125	10	11	5	10	-	SB(H)F../SB*../SSP..
NBH03020K	20	3	19	12	125	10	11	5	10	10	SB(H)F../SB*../SSP..
NBH03520K	20	3.5	19	12	125	10	11	5	10	10	SB(H)F../SB*../SSP..
NBH04020K	20	4	19	13	125	10	11	5	15	15	SB(H)F../SB*../SSP..
NBH04520K	20	4.5	19	13	125	10	11	5	15	15	-
NBH05020K	20	5	19	14	125	10	11	5	15	15	SB(H)F../SB*../SSP..
NBH06020K	20	6	19	15	125	10	11	5	20	20	SB(H)F../SB*../SSP../SFG..
NBH07020K	20	7	19	16	125	10	11	5	20	20	SB(H)F../SB*..
NBH08020K	20	8	19	17	125	10	11	5	20	20	SB(H)F../SBG../SSP../SFG..
NBH10020K	20	10	19	19	125	10	11	5	20	20	-
NBH12020K	20	12	19	19	125	10	14	5	25	25	-
NBH02022K	22	2	21	11	125	10	11	5	10	-	SB(H)F../SSP..
NBH02522K	22	2.5	21	11	125	10	11	5	10	-	SB(H)F../SB*../SSP..
NBH03022K	22	3	21	12	125	10	11	5	10	10	SB(H)F../SB*../SSP..
NBH03522K	22	3.5	21	12	125	10	11	5	10	10	SB(H)F../SB*../SSP..
NBH04022K	22	4	21	13	125	10	11	5	15	15	SB(H)F../SB*../SSP..
NBH04522K	22	4.5	21	13	125	10	11	5	15	15	-
NBH05022K	22	5	21	14	125	10	11	5	15	15	SB(H)F../SB*../SSP..
NBH06022K	22	6	21	15	125	10	11	5	20	20	SB(H)F../SB*../SSP../SFG..
NBH07022K	22	7	21	16	125	10	11	5	20	20	SB(H)F../SB*..
NBH08022K	22	8	21	17	125	10	11	5	20	20	SB(H)F../SBG../SSP../SFG..
NBH10022K	22	10	21	19	125	10	11	5	20	20	-
NBH12022K	22	12	21	21	125	10	14	5	25	25	-
NBH02023K	23	2	21	11	125	10	11	5	10	-	SB(H)F../SSP..
NBH02523K	23	2.5	21	11	125	10	11	5	10	-	SB(H)F../SB*../SSP..
NBH03023K	23	3	21	12	125	10	11	5	10	10	SB(H)F../SB*../SSP..
NBH03523K	23	3.5	21	12	125	10	11	5	10	10	SB(H)F../SB*../SSP..
NBH04023K	23	4	21	13	125	10	11	5	15	15	SB(H)F../SB*../SSP..
NBH04523K	23	4.5	21	13	125	10	11	5	15	15	-
NBH05023K	23	5	21	14	125	10	11	5	15	15	SB(H)F../SB*../SSP..
NBH06023K	23	6	21	15	125	10	11	5	20	20	SB(H)F../SB*../SSP../SFG..
NBH08023K	23	8	21	17	125	10	11	5	20	20	SB(H)F../SBG../SSP../SFG..
NBH10023K	23	10	21	19	125	10	11	5	20	20	-
NBH12023K	23	12	21	21	125	10	14	5	25	25	-
NBH02025K-MET	25	2	24	11	125	10	11	5	10	-	SB(H)F../SSP..
NBH02525K-MET	25	2.5	24	11	125	10	11	5	10	-	SB(H)F../SB*../SSP..
NBH03025K-MET	25	3	24	12	125	10	11	5	10	10	SB(H)F../SB*../SSP..
NBH03525K-MET	25	3.5	24	12	125	10	11	5	10	10	SB(H)F../SB*../SSP..
NBH04025K-MET	25	4	24	13	125	10	11	5	15	15	SB(H)F../SB*../SSP..
NBH04525K-MET	25	4.5	24	13	125	10	11	5	15	15	-
NBH05025K-MET	25	5	24	14	125	10	11	5	15	15	SB(H)F../SB*../SSP..
NBH06025K-MET	25	6	24	15	125	10	11	5	20	20	SB(H)F../SB*../SSP../SFG..
NBH07025K-MET	25	7	24	16	125	10	11	5	20	20	SB(H)F../SB*..
NBH08025K-MET	25	8	24	17	125	10	11	5	20	20	SB(H)F../SBG../SSP../SFG..
NBH10025K-MET	25	10	24	19	125	10	11	5	20	20	-
NBH12025K-MET	25	12	24	21	125	10	14	5	25	25	-
NBH02025K	25.4	2	24	11	125	10	11	5	10	-	SB(H)F../SSP..
NBH02525K	25.4	2.5	24	11	125	10	11	5	10	-	SB(H)F../SB*../SSP..
NBH03025K	25.4	3	24	12	125	10	11	5	10	10	SB(H)F../SB*../SSP..
NBH03525K	25.4	3.5	24	12	125	10	11	5	10	10	SB(H)F../SB*../SSP..
NBH04025K	25.4	4	24	13	125	10	11	5	15	15	SB(H)F../SB*../SSP..
NBH04525K	25.4	4.5	24	13	125	10	11	5	15	15	-
NBH05025K	25.4	5	24	14	125	10	11	5	15	15	SB(H)F../SB*../SSP..
NBH06025K	25.4	6	24	15	125	10	11	5	20	20	SB(H)F../SB*../SSP../SFG..
NBH07025K	25.4	7	24	16	125	10	11	5	20	20	SB(H)F../SB*..
NBH08025K	25.4	8	24	17	125	10	11	5	20	20	SB(H)F../SBG../SSP../SFG..
NBH10025K	25.4	10	24	19	125	10	11	5	20	20	-
NBH12025K	25.4	12	24	21	125	10	14	5	25	25	-

Metric	H	BD	LF	LH	DCB	DCB2	DCON	L1	L2	L3	Insert
NBH04532K	30	13	125	10	4.5	11	32	5	15	15	-
NBH05032K	30	14	125	10	5	11	32	5	15	15	SB(H)F../SB*../SSP..
NBH06032K	30	15	125	10	6	11	32	5	20	20	SB(H)F../SB*../SSP../SFG..
NBH07032K	30	16	125	10	7	11	32	5	20	20	SB(H)F..
NBH08032K	30	17	125	10	8	11	32	5	20	20	SB(H)F../SBG../SSP../SFG..
NBH10032K	30	19	125	10	10	11	32	5	20	20	-
NBH12032K	30	21	125	10	12	14	32	5	25	25	-
NBH14032K	30	23	125	10	14	16	32	5	25	25	-
NBH16032K	30	25	125	10	16	18	32	5	25	25	-

### SPARE PARTS



Designation	Clamp screw			Wrench (for Clamp screw)
	①	②	③	①②
NBH02020K	SS0404F	SS0404F	-	LW-2
NBH02520K	SS0404F	SS0404F	-	LW-2
NBH03020K	SS0404F	SS0404F	SS0406F	LW-2
NBH03520K	SS0404F	SS0404F	SS0406F	LW-2
NBH04020K	SS0404F	SS0406F	SS0406F	LW-2
NBH04520K	SS0404F	SS0406F	SS0406F	LW-2
NBH05020K	SS0404F	SS0406F	SS0406F	LW-2
NBH06020K	SS0404F	SS0406F	SS0406F	LW-2
NBH07020K	SS0404F	SS0406F	SS0406F	LW-2
NBH08020K	SS0404F	SS0404F	SS0404F	LW-2
NBH10020K	SS0404F	SS0404F	SS0404F	LW-2
NBH12020K	SS0403F	SS0403F	SS0403F	LW-2
NBH02022K	SS0404F	SS0406F	-	LW-2
NBH02522K	SS0404F	SS0406F	-	LW-2
NBH03022K	SS0404F	SS0406F	SS0408F	LW-2
NBH03522K	SS0404F	SS0406F	SS0406F	LW-2
NBH04022K	SS0404F	SS0406F	SS0406F	LW-2
NBH04522K	SS0404F	SS0406F	SS0406F	LW-2
NBH05022K	SS0404F	SS0406F	SS0406F	LW-2
NBH06022K	SS0404F	SS0406F	SS0406F	LW-2
NBH07022K	SS0404F	SS0406F	SS0406F	LW-2
NBH08022K	SS0404F	SS0406F	SS0406F	LW-2
NBH10022K	SS0404F	SS0404F	SS0404F	LW-2
NBH12022K	SS0404F	SS0404F	SS0404F	LW-2
NBH02023K	SS0404F	SS0406F	-	LW-2
NBH02523K	SS0404F	SS0406F	-	LW-2
NBH03023K	SS0404F	SS0406F	SS0408F	LW-2
NBH03523K	SS0404F	SS0406F	SS0406F	LW-2
NBH04023K	SS0404F	SS0406F	SS0406F	LW-2
NBH04523K	SS0404F	SS0406F	SS0406F	LW-2
NBH05023K	SS0404F	SS0406F	SS0406F	LW-2
NBH06023K	SS0404F	SS0406F	SS0406F	LW-2
NBH08023K	SS0404F	SS0406F	SS0406F	LW-2
NBH10023K	SS0404F	SS0404F	SS0404F	LW-2
NBH12023K	SS0404F	SS0404F	SS0404F	LW-2
NBH02025K**	SS0404F	SS0406F	-	LW-2
NBH02525K**	SS0404F	SS0406F	-	LW-2
NBH03025K**	SS0404F	SS0406F	SS0408F	LW-2
NBH03525K**	SS0404F	SS0406F	SS0408F	LW-2
NBH04025K**	SS0404F	SS0408F	SS0408F	LW-2
NBH04525K**	SS0404F	SS0408F	SS0408F	LW-2
NBH05025K**	SS0404F	SS0408F	SS0408F	LW-2
NBH06025K**	SS0404F	SS0408F	SS0408F	LW-2
NBH07025K**	SS0404F	SS0408F	SS0408F	LW-2
NBH08025K**	SS0404F	SS0406F	SS0406F	LW-2
NBH10025K**	SS0404F	SS0406F	SS0406F	LW-2
NBH12025K**	SS0404F	SS0404F	SS0404F	LW-2
NBH04532K	SS0404F	SS0408F	SS0408F	LW-2
NBH05032K	SS0404F	SS0408F	SS0408F	LW-2
NBH06032K	SS0404F	SS0408F	SS0408F	LW-2
NBH07032K	SS0404F	SS0408F	SS0408F	LW-2
NBH08032K	SS0404F	SS0408F	SS0408F	LW-2
NBH10032K	SS0404F	SS0408F	SS0408F	LW-2
NBH12032K	SS0404F	SS0406F	SS0406F	LW-2
NBH14032K	SS0504	SS0506	SS0506	LW-2
NBH16032K	SS0504	SS0506	SS0506	LW-2

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

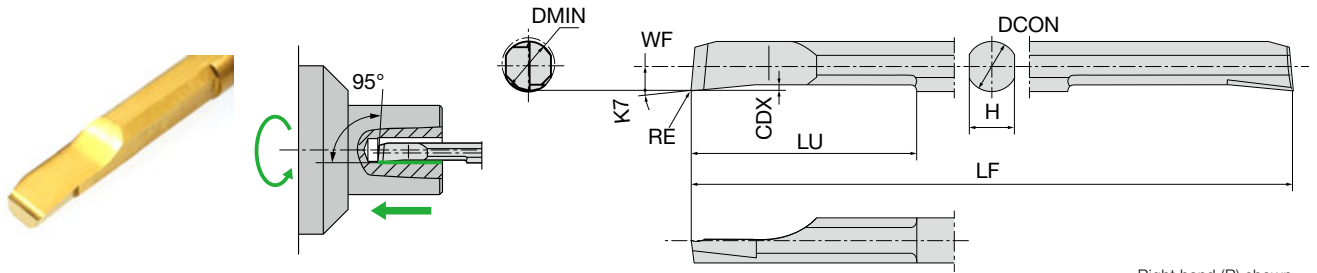


# STICK DUO

## INSERT BAR

### SBFS-S with chipbreaker

Sharp cutting edge



Right hand (R) shown.

P	Steel	☆	★
M	Stainless	★	☆
N	Non-ferrous	☆	★
S	Superalloys	★	☆
H	Hard materials	☆	★

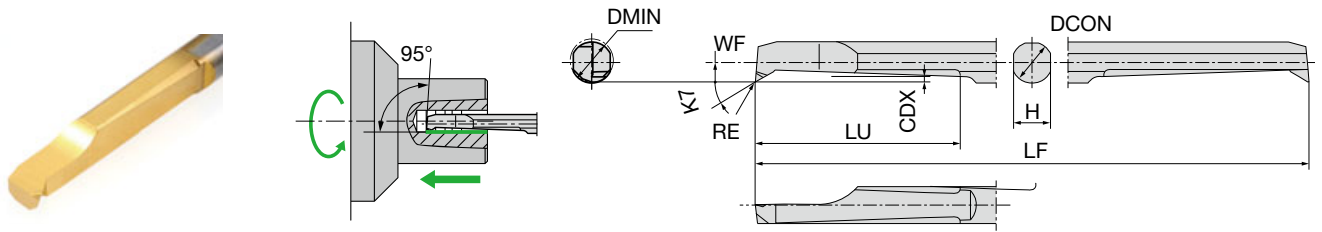
★ : First choice  
☆ : Second choice

Designation	HAND	RE	Coated		DMIN	DCON	H	LF	CDX	LU	WF	K7
			DT4	ZM3								
SBFS020R005S	R	0.002	●	●	0.087	0.079	0.071	1.969	0.010	0.394	0.035	5°
SBFS025R005S	R	0.002	●	●	0.106	0.098	0.091	1.969	0.012	0.492	0.045	5°
SBFS025R015S	R	0.006	●	●	0.106	0.098	0.091	1.969	0.012	0.492	0.045	5°
SBFS030R005S	R	0.002	●	●	0.126	0.118	0.106	1.969	0.016	0.591	0.055	5°
SBFS030R015S	R	0.006	●	●	0.126	0.118	0.106	1.969	0.016	0.591	0.055	5°
SBFS035R005S	R	0.002	●	●	0.146	0.138	0.126	2.362	0.016	0.689	0.065	5°
SBFS035R015S	R	0.006	●	●	0.146	0.138	0.126	2.362	0.016	0.689	0.065	5°
SBFS040R005S	R	0.002	●	●	0.165	0.157	0.142	2.362	0.018	0.787	0.075	5°
SBFS040R015S	R	0.006	●	●	0.165	0.157	0.142	2.362	0.018	0.787	0.075	5°
SBFS050R005S	R	0.002	●	●	0.205	0.197	0.177	2.756	0.020	0.984	0.094	5°
SBFS050R015S	R	0.006	●	●	0.205	0.197	0.177	2.756	0.020	0.984	0.094	5°
SBFS060R005S	R	0.002	●	●	0.244	0.236	0.213	3.150	0.024	1.181	0.114	5°
SBFS060R015S	R	0.006	●	●	0.244	0.236	0.213	3.150	0.024	1.181	0.114	5°

● : Line up

# SBFB-F with chipbreaker

Evacuates chips BACKWARD



Right hand (R) shown.

<b>P</b>	Steel	☆	★
<b>M</b>	Stainless	★	☆
<b>N</b>	Non-ferrous	☆	★
<b>S</b>	Superalloys	★	☆
<b>H</b>	Hard materials	☆	★

★ : First choice  
☆ : Second choice

Designation	HAND	RE	Coated		DMIN	DCON	H	LF	CDX	LU	WF	K7
			DT4	ZM3								
SBFB020R005F	R	0.002	●	●	0.087	0.079	0.071	1.969	0.010	0.315	0.037	30°
SBFB025R005F	R	0.002	●	●	0.106	0.098	0.091	1.969	0.012	0.492	0.047	30°
SBFB025R015F	R	0.006	●	●	0.106	0.098	0.091	1.969	0.012	0.492	0.047	30°
SBFB030R005F	R	0.002	●	●	0.126	0.118	0.106	1.969	0.018	0.591	0.055	30°
SBFB030R015F	R	0.006	●	●	0.126	0.118	0.106	1.969	0.018	0.591	0.055	30°
SBFB035R005F	R	0.002	●	●	0.146	0.138	0.126	2.362	0.020	0.689	0.065	30°
SBFB035R015F	R	0.006	●	●	0.146	0.138	0.126	2.362	0.020	0.689	0.065	30°
SBFB040R005F	R	0.002	●	●	0.165	0.157	0.142	2.362	0.020	0.787	0.075	30°
SBFB040R015F	R	0.006	●	●	0.165	0.157	0.142	2.362	0.020	0.787	0.075	30°
SBFB050R005F	R	0.002	●	●	0.205	0.197	0.177	2.756	0.028	0.984	0.094	30°
SBFB050R015F	R	0.006	●	●	0.205	0.197	0.177	2.756	0.028	0.984	0.094	30°
SBFB060R005F	R	0.002	●	●	0.244	0.236	0.213	3.150	0.035	1.181	0.114	30°
SBFB060R015F	R	0.006	●	●	0.244	0.236	0.213	3.150	0.035	1.181	0.114	30°

● : Line up

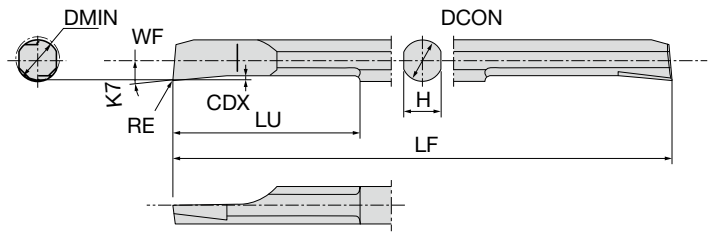
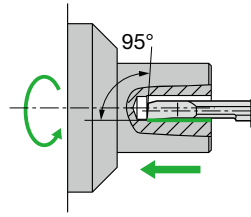
Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# STICK DUO

## INSERT BAR

### SBFS-H without chipbreaker

Mirror finish edge



Right hand (R) shown.

P	Steel	☆
M	Stainless	★
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice  
☆ : Second choice

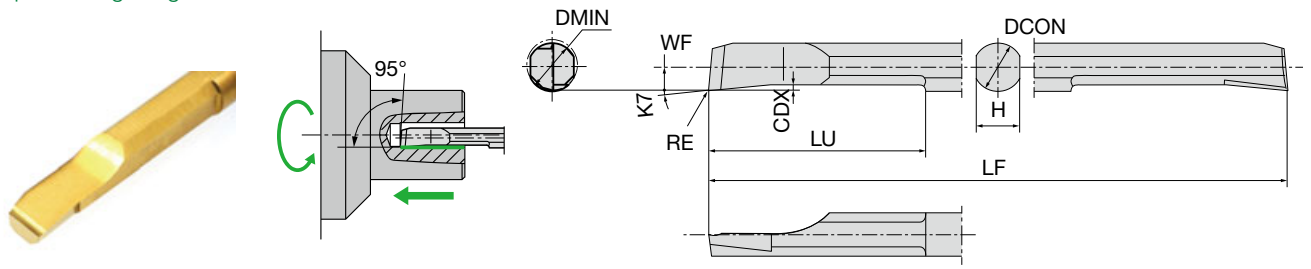
Designation	HAND	RE	Coated	Mirror finish	DMIN	DCON	H	LF	CDX	LU	WF	K7
			ZM3									
SBFS020R005H	R	0.002	●	M	0.087	0.079	0.071	1.969	0.010	0.394	0.035	5°
SBFS025R005H	R	0.002	●	M	0.106	0.098	0.091	1.969	0.012	0.492	0.045	5°
SBFS025R015H	R	0.006	●	M	0.106	0.098	0.091	1.969	0.012	0.492	0.045	5°
SBFS030R005H	R	0.002	●	M	0.126	0.118	0.106	1.969	0.016	0.591	0.055	5°
SBFS030R015H	R	0.006	●	M	0.126	0.118	0.106	1.969	0.016	0.591	0.055	5°
SBFS035R005H	R	0.002	●	M	0.146	0.138	0.126	2.362	0.016	0.689	0.065	5°
SBFS035R015H	R	0.006	●	M	0.146	0.138	0.126	2.362	0.016	0.689	0.065	5°
SBFS040R005H	R	0.002	●	M	0.165	0.157	0.142	2.362	0.018	0.787	0.075	5°
SBFS040R015H	R	0.006	●	M	0.165	0.157	0.142	2.362	0.018	0.787	0.075	5°
SBFS050R005H	R	0.002	●	M	0.205	0.197	0.177	2.756	0.020	0.984	0.094	5°
SBFS050R015H	R	0.006	●	M	0.205	0.197	0.177	2.756	0.020	0.984	0.094	5°
SBFS060R005H	R	0.002	●	M	0.244	0.236	0.213	3.150	0.024	1.181	0.114	5°
SBFS060R015H	R	0.006	●	M	0.244	0.236	0.213	3.150	0.024	1.181	0.114	5°
SBFS080R005H	R	0.002	●	M	0.323	0.315	0.287	3.150	0.031	1.181	0.154	5°
SBFS080R015H	R	0.006	●	M	0.323	0.315	0.287	3.150	0.031	1.181	0.154	5°

● : Line up



# SHFS-S with chipbreaker

Sharp cutting edge



Right hand (R) shown.

<b>P</b>	Steel	★
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	★
<b>S</b>	Superalloys	☆
<b>H</b>	Hard materials	☆

★ : First choice  
☆ : Second choice

Designation	HAND	RE	Coated		DMIN	DCON	H	LF	CDX	LU	WF	K7
			TM4									
SHFS020R005S	R	0.002	●		0.087	0.079	0.071	1.969	0.010	0.394	0.035	5°
SHFS025R005S	R	0.002	●		0.106	0.098	0.091	1.969	0.012	0.492	0.045	5°
SHFS025R015S	R	0.006	●		0.106	0.098	0.091	1.969	0.012	0.492	0.045	5°
SHFS030R005S	R	0.002	●		0.126	0.118	0.106	1.969	0.016	0.591	0.055	5°
SHFS030R015S	R	0.006	●		0.126	0.118	0.106	1.969	0.016	0.591	0.055	5°
SHFS035R005S	R	0.002	●		0.146	0.138	0.126	2.362	0.016	0.689	0.065	5°
SHFS035R015S	R	0.006	●		0.146	0.138	0.126	2.362	0.016	0.689	0.065	5°
SHFS040R005S	R	0.002	●		0.165	0.157	0.142	2.362	0.018	0.787	0.075	5°
SHFS040R015S	R	0.006	●		0.165	0.157	0.142	2.362	0.018	0.787	0.075	5°
SHFS050R005S	R	0.002	●		0.205	0.197	0.177	2.756	0.020	0.984	0.094	5°
SHFS050R015S	R	0.006	●		0.205	0.197	0.177	2.756	0.020	0.984	0.094	5°

● : Line up

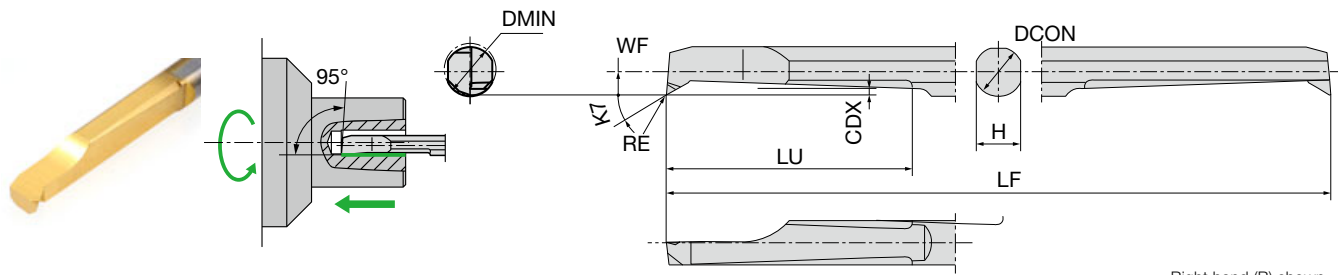
Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# STICK DUO

## INSERT BAR

### SHFB-F with chipbreaker

Evacuates chips BACKWARD



<b>P</b>	Steel	★
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	★
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

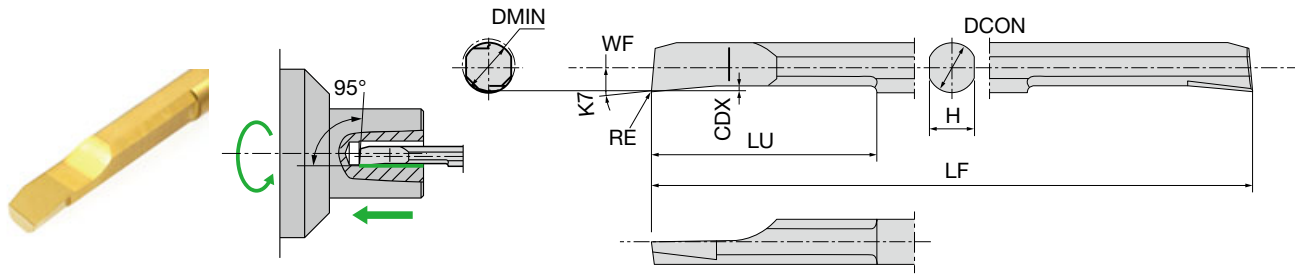
★ : First choice  
☆ : Second choice

Designation	HAND	RE	Coated	DMIN	DCON	H	LF	CDX	LU	WF	K7
			TM4								
SHFB020R005F	R	0.002	●	0.087	0.079	0.071	1.969	0.010	0.315	0.037	30°
SHFB025R005F	R	0.002	●	0.106	0.098	0.091	1.969	0.012	0.492	0.047	30°
SHFB025R015F	R	0.006	●	0.106	0.098	0.091	1.969	0.012	0.492	0.047	30°
SHFB030R005F	R	0.002	●	0.126	0.118	0.106	1.969	0.018	0.591	0.055	30°
SHFB030R015F	R	0.006	●	0.126	0.118	0.106	1.969	0.018	0.591	0.055	30°
SHFB035R005F	R	0.002	●	0.146	0.138	0.126	2.362	0.020	0.689	0.065	30°
SHFB035R015F	R	0.006	●	0.146	0.138	0.126	2.362	0.020	0.689	0.065	30°
SHFB040R005F	R	0.002	●	0.165	0.157	0.142	2.362	0.020	0.787	0.075	30°
SHFB040R015F	R	0.006	●	0.165	0.157	0.142	2.362	0.020	0.787	0.075	30°
SHFB050R005F	R	0.002	●	0.205	0.197	0.177	2.756	0.028	0.984	0.094	30°
SHFB050R015F	R	0.006	●	0.205	0.197	0.177	2.756	0.028	0.984	0.094	30°

● : Line up

# SHFS-H without chipbreaker

Mirror finish edge



P	Steel	★
M	Stainless	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice  
☆ : Second choice

Designation	HAND	RE	Coated	Mirror finish	DMIN	DCON	H	LF	CDX	LU	WF	K7
			TM4									
SHFS020R005H	R	0.002	●	Ⓜ	0.087	0.079	0.071	1.969	0.010	0.394	0.035	5°
SHFS025R005H	R	0.002	●	Ⓜ	0.106	0.098	0.091	1.969	0.012	0.492	0.045	5°
SHFS025R015H	R	0.006	●	Ⓜ	0.106	0.098	0.091	1.969	0.012	0.492	0.045	5°
SHFS030R005H	R	0.002	●	Ⓜ	0.126	0.118	0.106	1.969	0.016	0.591	0.055	5°
SHFS030R015H	R	0.006	●	Ⓜ	0.126	0.118	0.106	1.969	0.016	0.591	0.055	5°
SHFS035R005H	R	0.002	●	Ⓜ	0.146	0.138	0.126	2.362	0.016	0.689	0.065	5°
SHFS035R015H	R	0.006	●	Ⓜ	0.146	0.138	0.126	2.362	0.016	0.689	0.065	5°
SHFS040R005H	R	0.002	●	Ⓜ	0.165	0.157	0.142	2.362	0.018	0.787	0.075	5°
SHFS040R015H	R	0.006	●	Ⓜ	0.165	0.157	0.142	2.362	0.018	0.787	0.075	5°
SHFS050R005H	R	0.002	●	Ⓜ	0.205	0.197	0.177	2.756	0.020	0.984	0.094	5°
SHFS050R015H	R	0.006	●	Ⓜ	0.205	0.197	0.177	2.756	0.020	0.984	0.094	5°

● : Line up

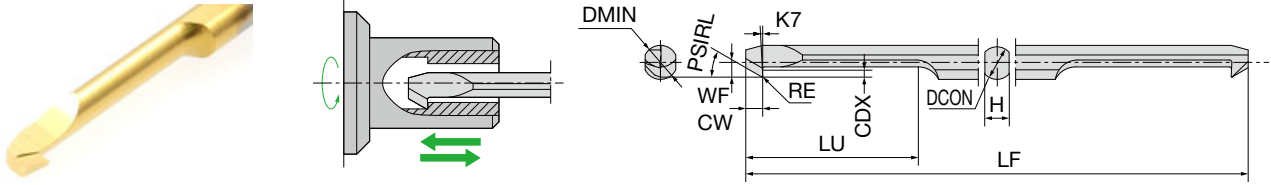
Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# STICK DUO

## INSERT BAR for ID Back Turning

### SBB-S with chipbreaker

Short type / Two-sided



Right hand (R) shown.

<b>P</b>	Steel	☆
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	★
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

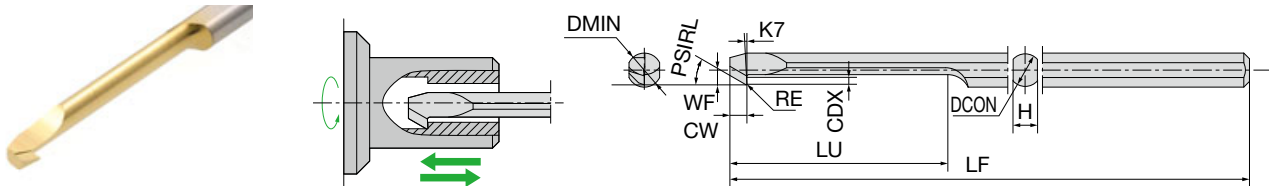
★ : First choice  
☆ : Second choice

Designation	HAND	RE	Coated	DMIN	DCON	H	LF	CDX	LU	WF	K7	CW	PSIRL
			ZM3										
SBB030RB005-S	R	0.002	●	0.118	0.118	0.106	1.969	0.020	0.591	0.051	3°	0.059	30°
SBB030RB010-S	R	0.004	●	0.118	0.118	0.106	1.969	0.020	0.591	0.051	3°	0.059	30°
SBB040RB005-S	R	0.002	●	0.157	0.157	0.142	2.362	0.031	0.709	0.071	3°	0.059	30°
SBB040RB015-S	R	0.006	●	0.157	0.157	0.142	2.362	0.031	0.709	0.071	3°	0.059	30°

● : Line up

### SBB with chipbreaker

Long type / Single-sided



Right hand (R) shown.

<b>P</b>	Steel	☆
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	★
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice

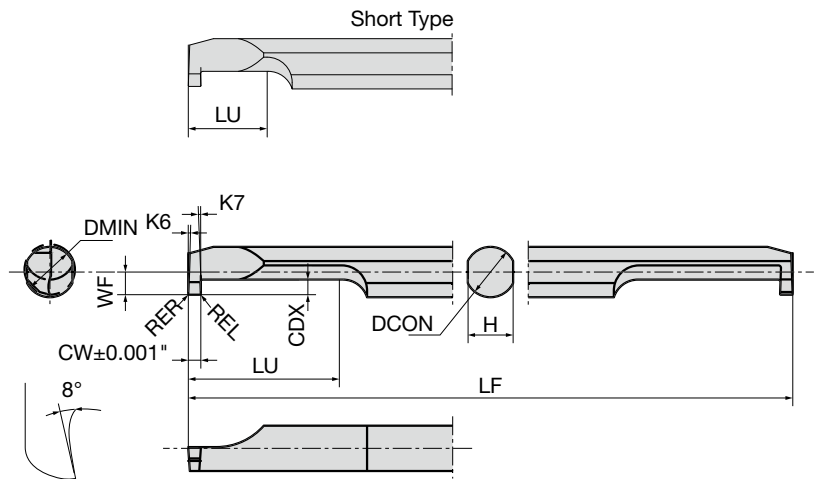
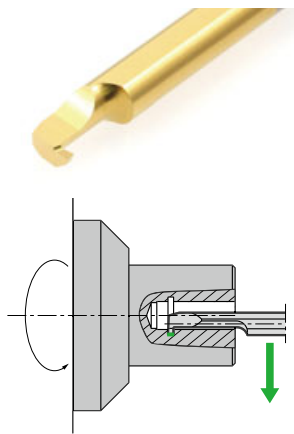
Designation	HAND	RE	Coated	DMIN	DCON	H	LF	CDX	LU	WF	K7	CW	PSIRL
			ZM3										
SBB030RB005	R	0.002	●	0.118	0.118	0.106	1.969	0.020	0.748	0.051	3°	0.059	30°
SBB030RB010	R	0.004	●	0.118	0.118	0.106	1.969	0.020	0.748	0.051	3°	0.059	30°
SBB040RB005	R	0.002	●	0.157	0.157	0.142	2.362	0.031	0.945	0.071	3°	0.059	30°
SBB040RB015	R	0.006	●	0.157	0.157	0.142	2.362	0.031	0.945	0.071	3°	0.059	30°

● : Line up

# INSERT BAR for ID Grooving

## SBG-S with chipbreaker

Short type / Two-sided



Right hand (R) shown.

<b>P</b>	Steel	☆
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	★
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice

Designation	HAND	RE	Coated	DMIN	APMX	DCON	H	LF	CDX	LU	WF	K7	K6	CW
			ZM3											
SBG030050RB-S	R	0.002	●	0.118	0.031	0.118	0.106	1.969	0.039	0.177	0.051	2°	2°	0.020
SBG030075RB-S	R	0.002	●	0.118	0.031	0.118	0.106	1.969	0.039	0.177	0.051	2°	2°	0.030
SBG030100RB-S	R	0.002	●	0.118	0.031	0.118	0.106	1.969	0.039	0.177	0.051	2°	2°	0.039
SBG030150RB-S	R	0.002	●	0.118	0.031	0.118	0.106	1.969	0.039	0.177	0.051	2°	2°	0.059
SBG040050RB-S	R	0.002	●	0.157	0.039	0.157	0.142	2.362	0.047	0.236	0.071	2°	2°	0.020
SBG040075RB-S	R	0.002	●	0.157	0.039	0.157	0.142	2.362	0.047	0.236	0.071	2°	2°	0.030
SBG040100RB-S	R	0.002	●	0.157	0.039	0.157	0.142	2.362	0.047	0.236	0.071	2°	2°	0.039
SBG040150RB-S	R	0.002	●	0.157	0.039	0.157	0.142	2.362	0.047	0.236	0.071	2°	2°	0.059
SBG050050RB-S	R	0.002	●	0.197	0.047	0.197	0.177	2.756	0.055	0.295	0.091	2°	2°	0.020
SBG050100RB-S	R	0.002	●	0.197	0.047	0.197	0.177	2.756	0.055	0.295	0.091	2°	2°	0.039
SBG050150RB-S	R	0.002	●	0.197	0.047	0.197	0.177	2.756	0.055	0.295	0.091	2°	2°	0.059
SBG050200RB-S	R	0.002	●	0.197	0.047	0.197	0.177	2.756	0.055	0.295	0.091	2°	2°	0.079
SBG060100RB-S	R	0.002	●	0.236	0.071	0.236	0.213	3.150	0.079	0.295	0.110	2°	2°	0.039
SBG060150RB-S	R	0.002	●	0.236	0.071	0.236	0.213	3.150	0.079	0.295	0.110	2°	2°	0.059
SBG060200RB-S	R	0.002	●	0.236	0.071	0.236	0.213	3.150	0.079	0.295	0.110	2°	2°	0.079
SBG080100RB-S	R	0.002	●	0.315	0.087	0.315	0.287	3.150	0.094	0.335	0.150	2°	2°	0.039
SBG080150RB-S	R	0.002	●	0.315	0.087	0.315	0.287	3.150	0.094	0.335	0.150	2°	2°	0.059
SBG080200RB-S	R	0.002	●	0.315	0.087	0.315	0.287	3.150	0.094	0.335	0.150	2°	2°	0.079

● : Line up

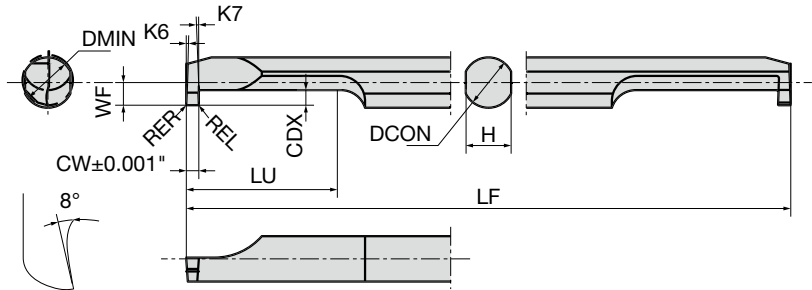
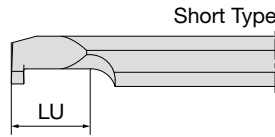
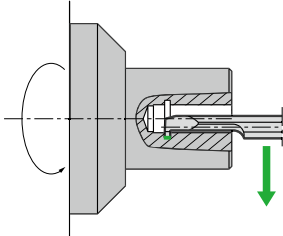
Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# STICK DUO

## INSERT BAR for ID Grooving

### SBG with chipbreaker

Long type / Two-sided



Right hand (R) shown.

<b>P</b>	Steel	☆
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	★
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

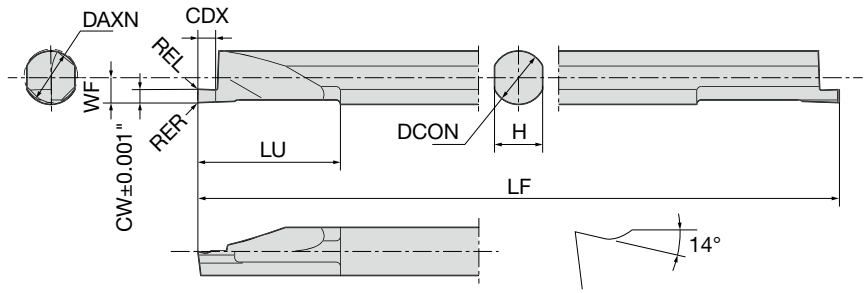
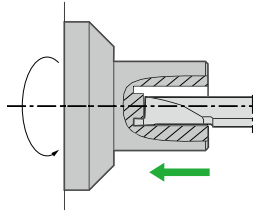
★ : First choice  
☆ : Second choice

Designation	HAND	RE	Coated	DMIN	APMX	DCON	H	LF	CDX	LU	WF	K7	K6	CW
			ZM3											
SBG030050RB	R	0.002	●	0.118	0.031	0.118	0.106	1.969	0.039	0.354	0.051	2°	2°	0.020
SBG030075RB	R	0.002	●	0.118	0.031	0.118	0.106	1.969	0.039	0.354	0.051	2°	2°	0.030
SBG030100RB	R	0.002	●	0.118	0.031	0.118	0.106	1.969	0.039	0.354	0.051	2°	2°	0.039
SBG040050RB	R	0.002	●	0.157	0.039	0.157	0.142	2.362	0.047	0.472	0.071	2°	2°	0.020
SBG040075RB	R	0.002	●	0.157	0.039	0.157	0.142	2.362	0.047	0.472	0.071	2°	2°	0.030
SBG040100RB	R	0.002	●	0.157	0.039	0.157	0.142	2.362	0.047	0.472	0.071	2°	2°	0.039
SBG050050RB	R	0.002	●	0.197	0.047	0.197	0.177	2.756	0.055	0.787	0.091	2°	2°	0.020
SBG050100RB	R	0.002	●	0.197	0.047	0.197	0.177	2.756	0.055	0.787	0.091	2°	2°	0.039
SBG050150RB	R	0.002	●	0.197	0.047	0.197	0.213	2.756	0.055	0.787	0.091	2°	2°	0.059
SBG060100RB	R	0.002	●	0.236	0.071	0.236	0.213	3.150	0.079	0.787	0.110	2°	2°	0.039
SBG060150RB	R	0.002	●	0.236	0.071	0.236	0.213	3.150	0.079	0.787	0.110	2°	2°	0.059
SBG060200RB	R	0.002	●	0.236	0.071	0.236	0.287	3.150	0.079	0.787	0.110	2°	2°	0.079
SBG080100RB	R	0.002	●	0.315	0.087	0.315	0.287	3.150	0.094	0.787	0.150	2°	2°	0.039
SBG080150RB	R	0.002	●	0.315	0.087	0.315	0.177	3.150	0.094	0.787	0.150	2°	2°	0.059
SBG080200RB	R	0.002	●	0.315	0.087	0.315	0.287	3.150	0.094	0.787	0.150	2°	2°	0.079

● : Line up

# INSERT BAR for ID Face Grooving

## SFG with chipbreaker



Right hand (R) shown.

<b>P</b>	Steel	★
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	★
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice

Designation	HAND	RE	Coated	DMIN	APMX	DCON	H	LF	CDX	LU	WF	CW
			TM4									
SFG060R100B	R	0.002	●	0.236	0.059	0.236	0.213	3.150	0.067	0.630	0.110	0.039
SFG060R150B	R	0.002	●	0.236	0.079	0.236	0.213	3.150	0.087	0.630	0.110	0.059
SFG060R200B	R	0.002	●	0.236	0.118	0.236	0.213	3.150	0.126	0.630	0.110	0.079
SFG080R100B	R	0.002	●	0.315	0.059	0.315	0.287	3.150	0.067	0.630	0.150	0.039
SFG080R150B	R	0.002	●	0.315	0.079	0.315	0.287	3.150	0.087	0.630	0.150	0.059
SFG080R200B	R	0.002	●	0.315	0.118	0.315	0.287	3.150	0.126	0.630	0.150	0.079
SFG080R300B	R	0.002	●	0.315	0.118	0.315	0.287	3.150	0.126	0.630	0.150	0.118

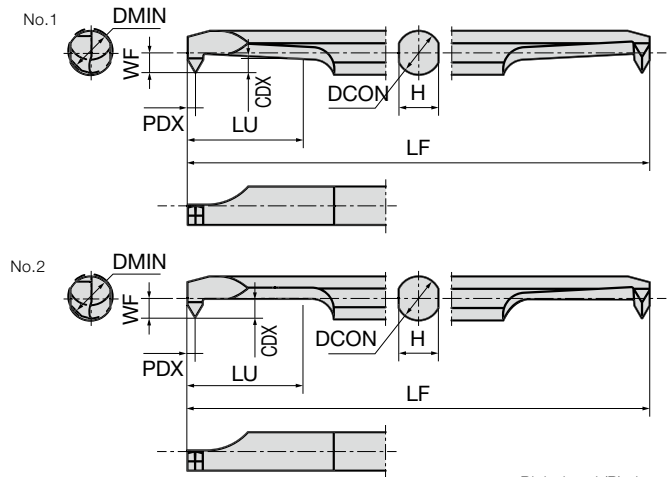
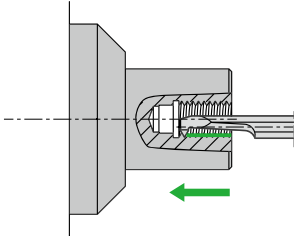
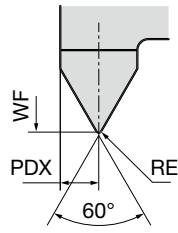
● : Line up

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# STICK DUO

## INSERT BAR for Internal Thread

SBT



Right hand (R) shown.

<b>P</b>	Steel	☆
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	★
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice

Designation	HAND	RE	Coated	chip-breaker	DMIN	DCON	H	LF	WF	Pitch	CDX	LU	PDX	Figure
			ZM3											
SBT025M3R	R	0.002MAX Flat	●	No	0.098	0.098	0.091	1.969	0.043	0.020	0.024	0.213	0.016	1
SBT030M4R	R	0.002MAX Flat	●	No	0.118	0.118	0.106	1.969	0.051	0.020 - 0.031	0.031	0.295	0.020	1
SBT030M4RB	R	0.002MAX Flat	●	Yes	0.118	0.118	0.106	1.969	0.051	0.020 - 0.031	0.031	0.295	0.020	1
SBT035M5RB	R	0.002MAX Flat	●	Yes	0.138	0.138	0.126	2.362	0.061	0.020 - 0.039	0.039	0.335	0.022	1
SBT040M6RB	R	0.002	●	Yes	0.157	0.157	0.142	2.362	0.071	0.030 - 0.049	0.047	0.413	0.028	1
SBT050M8RB	R	0.002	●	Yes	0.197	0.197	0.177	2.756	0.091	0.030 - 0.059	0.059	0.622	0.031	2
SBT060M10RB	R	0.002	●	Yes	0.236	0.236	0.213	3.150	0.110	0.030 - 0.069	0.071	0.724	0.037	2

No.1: Eccentric tapered shape

● : Line up





# 5. Threading

---



# Main products

Thread form

60° 5-12

55° 5-15

M (Metric) 5-16

UN (Unified) 5-20

W (Whitworth) 5-22

BSPT (R, PT) 5-23

NPT 5-24

NPTF 5-25

UNJ 5-26



## 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.

5-12 -



## TETRAMCUT

Standard tool with 4 corners for threading on Swiss lathes. In small diameter threading using the center of the tool post on general NC lathes, interference with the center is less likely occur.

5-13 -



## DUOJUST

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.

5-14 -



## MINIVLOCK GROOVE

High precision grooving and threading tool series for CNC automatic lathes.

5-29



## SOLIDTHREAD

Solid threading tool series for machining small diameters, such as M1x0.25 and 0-80UNF.

5-46 -



## TUNGMEISTER

Endmills with exchangeable heads for reduced tool change time  
ø6 mm - ø20 mm

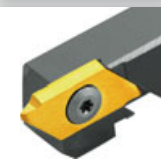
5-56 -



## CSV Series

Best for machining with ultra small diameter of ø5 or less  
Possible to use on cam-type automatic lathes

5-27 -



## TTP Series



Cover wide range with single point cutting  
Achieve burr-free thread surface by high precision sharp edge

5-35 -



## STICK DUO -SBT-



For internal threading minimum diameter ø2.5  
Economical 2 corners solid bar with wide range of choice

5-37 -



## Thread whirling

High productivity for precision screw manufacturing, like dental implant screws and bone screws

5-11, 5-46 -

# 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					Aerospace threads
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	National pipe taper thread	National pipe taper fuel thread	Unified inch screw threads
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	NPT	NPTF	UNJ, UNJC, UNJF, UNUEF, UNJS
Thread form											
Tool type	Full profile										
	With out										
 5-27	●	0.2 ~ 0.5 mm 127 ~ 51TPI 5-27	—	—	—	—	—	—	—	—	—
 5-35	●	0.2 ~ 2 mm 127 ~ 13TPI 5-35	0.5 ~ 1.5 mm 48 ~ 16TPI 5-35	—	—	—	—	—	—	—	—
 5-14	●	0.2 ~ 1.5 mm 127 ~ 16TPI 5-14	—	—	—	—	—	—	—	—	—
 5-29	●	0.4 ~ 2 mm 64 ~ 12TPI 5-29	0.6 ~ 1.5 mm 40 ~ 16TPI 5-29	—	—	—	—	—	—	—	—
 5-13	●	—	—	0.5 - 1.5 mm 5-19	VN 32 - 16 TPI	W 28 - 11 TPI	55 28 - 11 TPI	—	—	—	UNJ 32 - 28 TPI
	●	0.4 ~ 3 mm 64 ~ 8TPI 5-13	0.9 ~ 3 mm 28 ~ 8TPI	—	—	—	—	—	—	—	—
 5-12	●	—	—	0.35 - 3 mm 5-16	32 - 8 TPI 5-20	32 - 8 TPI 5-22	28 - 8 TPI 5-22	28 - 11 TPI 5-23	27 - 8 TPI 5-24	27 - 8 TPI 5-25	32 - 8 TPI 5-26
	●	0.5 ~ 3 mm 48 ~ 8TPI 5-12	0.5 ~ 3 mm 48 ~ 8TPI 5-15	—	—	—	—	—	—	—	—

# 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	National pipe taper thread	National pipe taper fuel thread
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	NPT	NPTF
Thread form										
Tool type	Full profile									
	With out									
 <b>4-72</b>	●	0.5 ~ 1.75 mm 51 ~ 15TPI <b>4-72</b>	—	—	—	—	—	—	—	—
	●	—	—	—	—	—	—	—	—	—
 <b>4-44</b>	●	0.5 ~ 1.5 mm 48 ~ 16TPI <b>4-44</b>	60°	—	—	—	—	—	—	—
	●	—	—	—	—	—	—	—	—	—
 <b>5-45</b>	●	0.5 ~ 1.25 mm 48 ~ 20TPI <b>5-45</b>	60°	—	—	—	—	—	—	—
	●	—	—	—	—	—	—	—	—	—
 <b>5-12</b>	●	—	—	0.5 - 3 mm <b>5-16</b>	32 - 8 TPI <b>5-20</b>	32 - 8 TPI <b>5-22</b>	28 - 8 TPI <b>5-22</b>	19 - 11 TPI <b>5-23</b>	27 - 8 TPI <b>5-24</b>	14 - 8 TPI <b>5-25</b>
	●	0.5 ~ 3 mm 48 ~ 8TPI <b>5-12</b>	0.5 ~ 3 mm 48 ~ 8TPI <b>5-15</b>	—	—	—	—	—	—	—


Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference





# Miniature Threading - Quick Guide

## External Threading Inch



### CSV

Application	Designation	Insert	Square shank (height x width)							Corner R (in)	Pitch (mm)					Page	
			0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000		0	1	2	3	4		5
	<b>CSVR/L</b>	CSV			●	●				0.0012 max	0.2	0.5					<b>5-27</b>




### TTP series

Application	Designation	Insert	Square shank (height x width)							Corner R (in)	Holder		Pitch (mm)					Page		
			0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000		Through-coolant	Direct connection	0	1	2	3	4		5	
	<b>TTPR/L-OH2/OH3</b>	TTP				●	●				●	●	0.2			2.0				<b>5-34</b>
	<b>TTPR/L</b>	TTP			●	●	●						0.2			2.0				<b>5-35</b>




### TetraMini-Cut



Application	Designation	Insert	Square shank (height x width)							Cylindrical shank (shank dia.)				Corner R (in)			
			0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	ø0.500	ø0.625	ø0.750	ø1.000				
	<b>STCR/L-18</b> Modular head	TCT18R/L...				●	●	●	●	●							0.002 - 0.008
	<b>JS-STCL18</b> Modular head	TCT18R...										●	●	●			0.002 - 0.008










### DuoJust-Cut






Application	Designation	Insert	Square shank (height x width)							Cylindrical shank (shank dia.)				Corner R (in)			
			0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	ø0.500	ø0.625	ø0.750	ø1.000				
	<b>JSXXR/L-F/H/X-CHP</b>	JXTG12**					●	●									0.002Max. - 0.004
	<b>JSXXR/L-F/X-S-CHP</b>	JXTG12**					●	●									0.002Max. - 0.004
	<b>JS-SXXL09</b>	JXTG12R...											●	●			0.002Max. - 0.004

### TungThread

Application	Designation	Insert	Square shank (height x width)							Cylindrical shank (shank dia.)				Corner R (in)			
			0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	1.250 x 1.250	ø0.500	ø0.625	ø0.750	ø1.000				
	<b>JSE2R16-CHP</b>	16ER...			●	●											0.002 - 0.0086
	<b>CER/L</b>	16ER/L...						●	●	●							0.002 - 0.0086
	<b>JS-SEL16</b>	16ER...											●	●			0.002 - 0.0086


		Pitch (mm)						
		0	1	2	3	4	5	Page
0.4					3			5-32
0.4					3			5-32


Holder		Pitch (mm)						
		0	1	2	3	4	5	Page
		0.2			1.5			5-39
		0.2			1.5			5-39
		0.2			1.5			5-40

Holder		Pitch (mm)						
		0	1	2	3	4	5	Page
		0.5			3			5-41
		0.5			3			5-42
		0.5			3			5-42


# Miniature Threading - Quick Guide

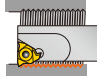
## External Threading Inch

 **MiniVLockGroove**


Application	Designation	Insert	Square shank (height x width)						Corner R (in)	Pitch (mm)						Page		
			0.250 x 0.250	0.3125 x 0.3125	0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750		1.000 x 1.000	0	1	2	3	4		5	
	<b>SVER/L</b> Modular head	VGT10F...			●	●			0.002 - 0.004	0.4								<b>5-29</b>


## Internal Threading Inch


 **TungThread**






Application	Designation	Insert	Cylindrical shank (shank dia.)						Min. bore diameter DMIN (in)	Corner R (in)	Pitch (mm)						Page	
			ø0.500	ø0.625	ø0.750	ø1.000	ø1.250	ø1.500			0	1	2	3	4	5		6
	<b>SIR</b>	11/16/22/27IR...	●	●	●	●	●	●	ø0.470 - ø1.800	0.002 - 0.017	0.5							<b>5-43</b>

## External Threading Metric

 **CSV**

Application	Designation	Insert	Square shank (height x width)					Corner R (mm)	Pitch (mm)					Page			
			7 x 7	8 x 8	9.5 x 9.5	10 x 10	12 x 12		0	1	2	3	4		5		
	<b>CSVR/L</b>	CSV	●	●	●	●	●	0.03 Max	0.2								<b>5-27</b>

 **TetraMini-Cut**

Application	Designation	Insert	Square shank (height x width)						Cylindrical shank (shank dia.)								
			10 x 10	12 x 12	12 x 16	16 x 16	16 x 20	20 x 20	ø14	ø15.875	ø16	ø19.05	ø20	ø22			
	<b>QC-STCR/L-Y-CHP</b> Modular head	TCT18R/L...		●	●	●	●										
	<b>QC-STCR/L-CHP</b> Modular head	TCT18R/L...		●	●	●	●										
	<b>STCR/L-18</b>	TCT18R/L...	●	●		●											
	<b>JS-STCL18</b>	TCT18R...							●	●	●	●	●	●	●		
	<b>QR-STCL18-CHP</b>	TCT18R...									●	●	●				








			Corner R (mm)	Holder				Pitch (mm)						Page
	ø25	ø25.4		Modular head	Y-axis feed	Through-coolant	Direct connection	0	1	2	3	4	5	
			0.05 - 0.2	●	●	●	●	0.4	3					5-31
			0.05 - 0.2	●		●	●	0.4	3					5-31
			0.05 - 0.2					0.4	3					5-32
	●	●	0.05 - 0.2					0.4	3					5-32
			0.05 - 0.2	●		●		0.4	3					5-33





# Miniature Threading - Quick Guide

## External Threading Metric





### TTP series

Application	Designation	Insert	Square shank (height x width)						Cylindrical shank (shank dia.)						
			8 x 10	10 x 10	10 x 12	12 x 12	16 x 16	20 x 20	25 x 25	ø16	ø19.05	ø20	ø22	ø25	ø25.4
	<b>TTPR/L-OH2/OH3</b>	TTP			●	●	●								
	<b>TTPR/L</b>	TTP	●	●		●	●	●							
	<b>TTPL-F</b>	TTP				●	●								
	<b>CH-TTPL</b>	TTP					●	●							
	<b>DS-TTPL</b>	TTP								●	●	●	●	●	●

### DuoJust-Cut

Application	Designation	Insert	Square shank (height x width)					Cylindrical shank (shank dia.)							
			10 x 10	10 x 12	12 x 12	16 x 16	20 x 20	ø16	ø19.05	ø20	ø22	ø25	ø25.4		
	<b>JSXXR/L*09-CHP</b>	JXTG12...		●	●	●									
	<b>JSXXR/L*09-S-CHP</b>	JXTG12...			●	●									
	<b>JS-SXXL09</b>	JXTG12R...							●	●	●	●	●		
	<b>QR-SXXL09-CHP</b>	JXTG12R...						●	●	●					

### TungThread

Application	Designation	Insert	Square shank (height x width)									Cylindrical shank (shank dia.)				
			8 x 8	10 x 10	12 x 12	16 x 16	20 x 10	20 x 20	24 x 12	24 x 16	32 x 16	ø16	ø19.05	ø20	ø25	ø25.4
	<b>SER*11</b>	11ER...	●	●												
	<b>JSE2R16-CHP</b>	16ER...			●	●										
	<b>CER/L</b>	16ER/L...			●	●		●								
	<b>JS-SEL16</b>	16ER...										●	●	●	●	

Corner R (mm)	Holder		Pitch (mm)					Page	
	Through-coolant	Direct connection	0	1	2	3	4		5
	●	●	0.2	2.0					5-34
			0.2	2.0					5-35
			0.2	2.0					5-36
			0.2	2.0					5-36
			0.2	2.0					5-37

Corner R (mm)	Holder		Pitch (mm)					Page	
	TUNGJET (Through-coolant)	Direct connection	0	1	2	3	4		5
0.05Max. - 0.1	●	●	0.2	1.5					5-39
0.05Max. - 0.1	●	●	0.2	1.5					5-39
0.05Max. - 0.1			0.2	1.5					5-40
0.05Max. - 0.1			0.2	1.5					5-40

Corner R (mm)	Holder			Pitch (mm)					Page
	MODUMTURN (Modular head)	TUNGJET (Through-coolant)	Direct connection	1	2	3	4	5	
0.04 - 0.19				0.35	1.5				5-41
0.05 - 0.22	●	●	●	0.5	3				5-41
0.05 - 0.22				0.5	3				5-42
0.05 - 0.22				0.5	3				5-42

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool


9


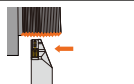
Technical Reference

10


# Miniature Threading - Quick Guide



## External Threading Metric

 **MiniVLockGroove**


Application	Designation	Insert	Square shank (height x width)				Corner R (mm)	Holder			Pitch (mm)						Page
			10 x 10	10 x 12	12 x 12	12 x 16		MODU MILURN (Modular head)	TUNG TJET (Through-coolant)	Direct connection	0	1	2	3	4	5	
	<b>QC12-SVER/ L-CHP</b> Modular head	VGT10F...		●	●	●	0.05 - 0.1	●	●	●	0.4	2				<b>5-29</b>	
	<b>SVER/L</b>	VGT10F...	●		●		0.05 - 0.1		●	●	0.4	2				<b>5-29</b>	

## Internal Threading Metric

 **TungThread**

Application	Designation	Insert	Min. bore diameter DMIN (mm)	Corner R (mm)	Pitch (mm)						Page
					0	1	2	3	4	5	
	<b>SIR</b>	6/8IR...	ø6.4 - ø8	0.04 - 0.17	0.5	2				<b>5-43</b>	
	<b>SNR</b>	6IR...	ø8 - ø10	0.04 - 0.1	0.5	1.75				<b>5-44</b>	

 **TinyInternalCut**

Application	Designation	Insert	Min. bore diameter DMIN (mm)	Corner R (mm)	material	Pitch (mm)						Page
						0	1	2	3	4	5	
	<b>A/E-SMR</b>	M*R...	ø5 - ø7	0.03 - 0.07	steel	0.5	1.25				<b>5-45</b>	

# Thread Whirling

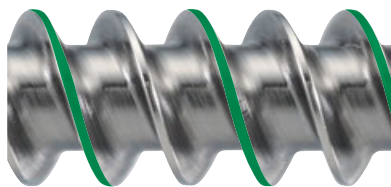
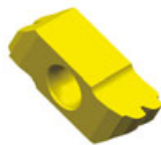
For high-efficiency thread cutting | Swiss CNC Lathes

High productivity for precision screw manufacturing, like dental implant screws and bone screws

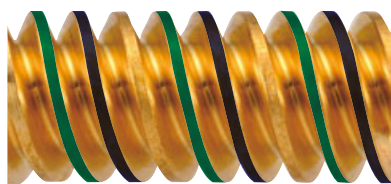
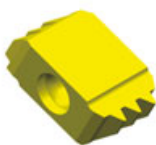
**Ideal for medical screw thread forms that are becoming more complex**  
**Single pass thread forming reduces cycle time**



Double lead thread



Triple lead thread



Reference pages: Inserts → [5-60](#)

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9

Technical Reference

10

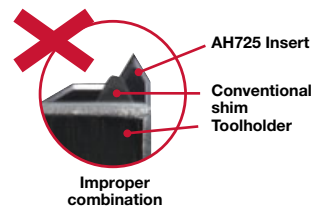


### Partial-profile insert with chipbreaker

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	AH725	Cermet						Coated	AH725	Cermet									
AH8015	AH725	NS9530	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

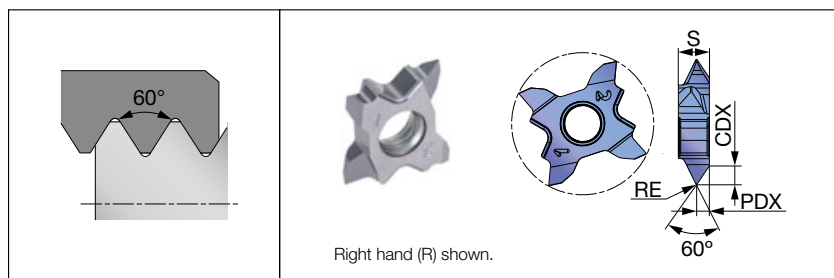
●\* : The cutting edge position needs adjusting for these inserts have different PDY and PDX dimensions (Note: for size 16 inserts only).  
 - requires the use of dedicated shim.  
 When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim.

● : Line up / 5 pieces per package



## TETRAMCUT INSERT

### 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

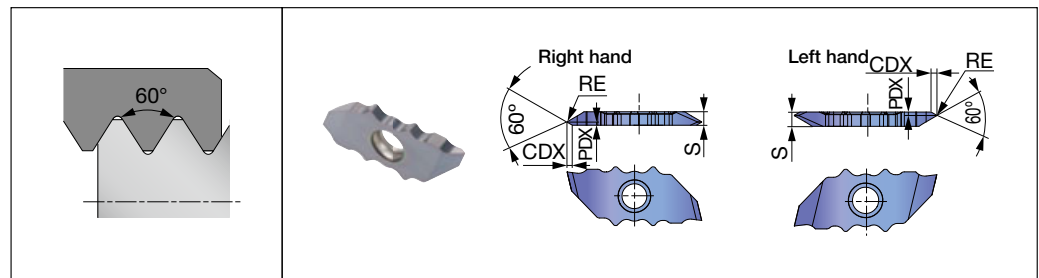
### Partial-profile insert

Pitch (mm)	TPI	Hand of cut	External insert (in)							
			Designation	Grade		PDX	CDX	RE	S	
				Coated	AH725					
			SH725	AH725						
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

Reference pages: Toolholders → 5-31 - 5-33

### 60° thread angle (General purpose)



#### Applicable toolholder

External
JSXXR/L**09
JSXXR/L**09-CHP
JS**-SXXL09

Thread form

60°

55°

M (Metric)

UN (Unified)

W (Whitworth)

BSPT (R, PT)

NPT

NPTF

UNJ

#### Partial-profile insert

Insert size	Pitch (mm)	TPI	Hand of cut	External insert (in)						
				Designation	Grade		PDX	CDX	RE	S
					Coated					
					R	L				
12	0.2 - 0.4	64 - 127	R/L	<b>JXTG12FR/L-60A-000</b>	●	●	0.010	0.016	0.0020 max flat	0.098
12	0.2 - 0.4	64 - 127	R/L	<b>JXTG12FR/L-60B-000</b>	●	●	0.089	0.016	0.0020 max flat	0.098
12	0.4 - 1	25 - 64	R/L	<b>JXTG12FR/L-60A-005</b>	●	●	0.024	0.039	0.0020	0.098
12	0.4 - 1	25 - 64	R/L	<b>JXTG12FR/L-60B-005</b>	●	●	0.075	0.039	0.0020	0.098
12	1 - 1.5	16 - 25	R/L	<b>JXTG12FR/L-60N-010</b>	●	●	0.049	0.081	0.004	0.098

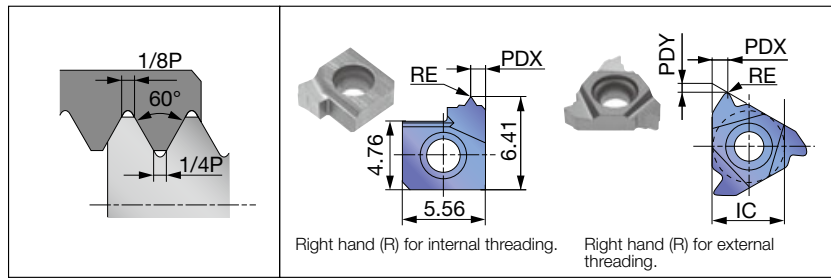
● : Line up / 5 pieces per package

	Type A	Type B	Type N
Right hand			
Left hand			





### 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 → [5-41](#) - [5-42](#)  
Internal toolholders → [5-43](#) - [5-44](#)

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

Reference pages: External toolholders → 5-41 - 5-42  
Internal toolholders → 5-43 - 5-44

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

### Full-profile insert with chipbreaker

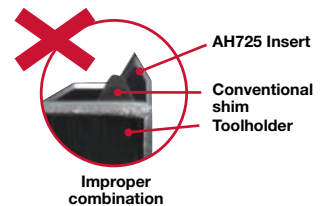
Insert size	Pitch (Reference) (mm)	Hand of cut	External insert (in)							Internal insert (in)								
			Designation	Grade			IC	PDX	PDY	RE	Designation	Grade			IC	PDX	PDY	RE
				Coated		Cermet						Coated		Cermet				
				AH8015	AH725	NS9530						AH8015	AH725	NS9530				
11	0.5	R							11IR05ISO-B	●			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.

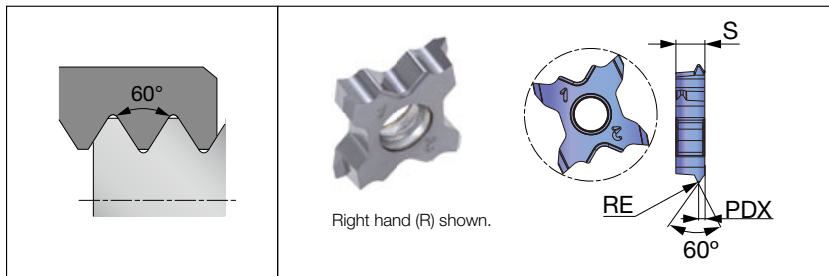
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim.

● : Line up / 5 pieces per package



Reference pages: External toolholders → [5-41](#) - [5-42](#)  
Internal toolholders → [5-43](#) - [5-44](#)

### 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	Designation	External insert (in)				
			Grade		PDX	RE	S
			Coated				
			SH725	AH725			
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

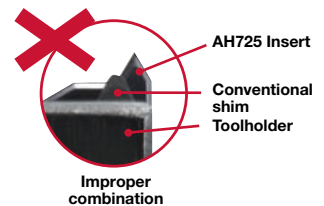


### Full-profile insert with chipbreaker

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	(0.042)	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.



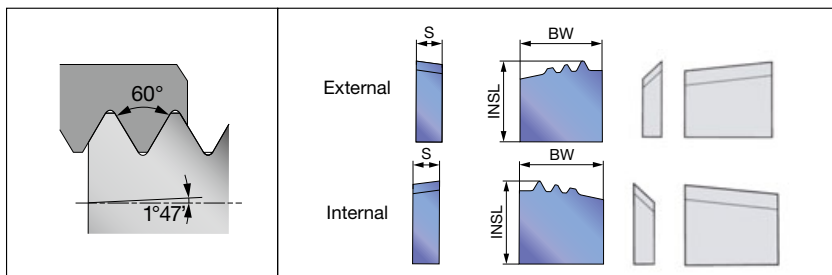








## NPT (for Pipe)



### Applicable toolholder

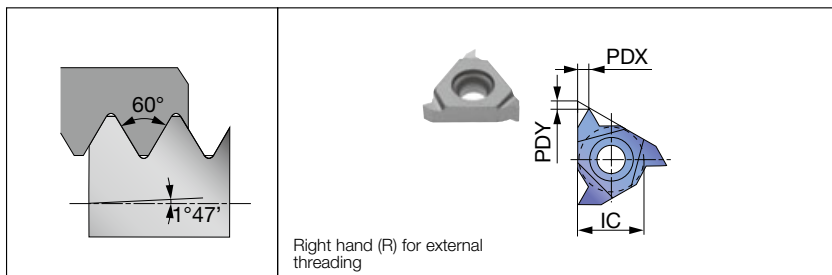
External	Internal
CLVOR-**M...	SI-CLHOR...

### Full-profile insert (chaser)

Pitch (Reference) (mm)	TPI	Taper		External insert (in)						Internal insert (in)					
		mm/ mm	TPF	Designation	Grade	BW	INSL	S	Chip breaking attachment	Designation	Grade	BW	INSL	S	Chip breaking attachment
					Coated						Coated				
(2.209)	11.5	1/16	0.75	<b>CR-11.5NPT-4E</b>	●	0.630	0.618	0.205	CR-8R / 10R-3E / 4E-CB	<b>CR-11.5NPT-4I</b>	●	0.630	0.618	0.205	CR-8R / 10R-3I / 4I-CB
(3.175)	8	1/16	0.75	<b>CR-8NPT-4E</b>	●	0.630	0.618	0.205	CR-8R / 10R-3E / 4E-CB	<b>CR-8NPT-4I</b>	●	0.630	0.618	0.205	CR-8R / 10R-3I / 4I-CB

● : Line up / 5 pieces per package

## NPTF (for Pipe)



Right hand (R) for external  
threading

### Applicable toolholder

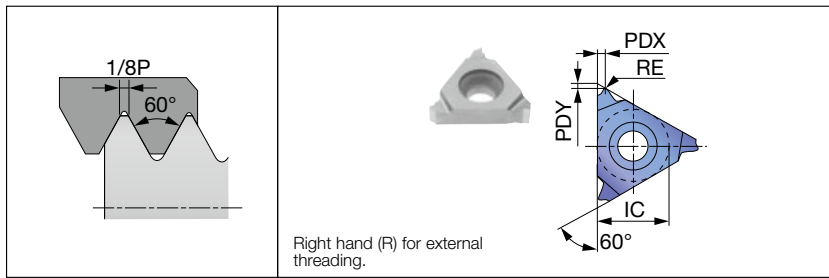
Insert size	External	Internal
16	CER/L**16... (C*CER/L...) JSER**16... JS**SEL16 SER**16-CHP B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

### 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				
16	(0.037)	27	R	<b>16ER27NPTF</b>	●	0.375	0.020	0.047	-						
16	(0.056)	18	R	<b>16ER18NPTF</b>	●	0.375	0.035	0.028	-						
16	(0.071)	14	R	<b>16ER14NPTF</b>	●	0.375	0.063	0.047	-	<b>16IR14NPTF</b>	●	0.375	0.063	0.047	-
16	(0.087)	11.5	R	<b>16ER115NPTF</b>	●	0.375	0.063	0.047	-	<b>16IR115NPTF</b>	●	0.375	0.063	0.047	-
16	(0.125)	8	R	<b>16ER8NPTF</b>	●	0.375	0.063	0.047	-	<b>16IR8NPTF</b>	●	0.375	0.063	0.047	-

● : Line up / 5 pieces per package

### UNJ (for Aerospace industry)



#### 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

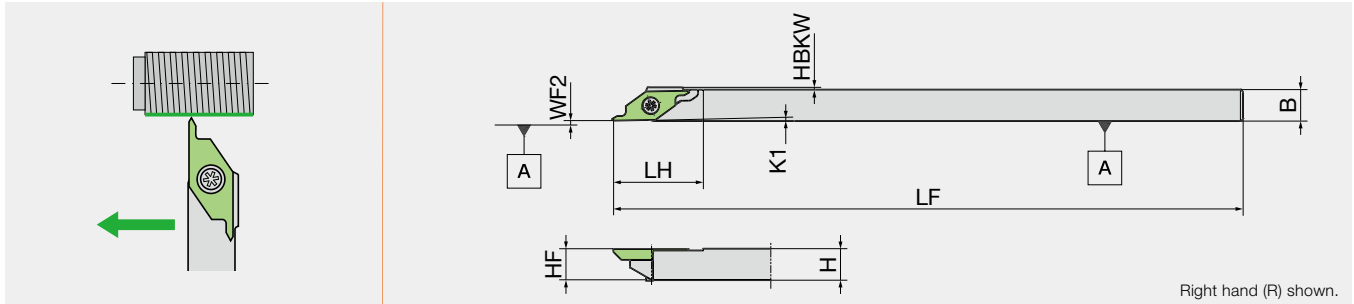
#### Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)						
				Designation	Grade		IC	PDX	PDY	RE
					Coated					
					AH8015	AH725				
16	(0.031)	32	R	<b>16ER32UNJ</b>	●	●	0.375	0.020	0.047	0.005
16	(0.036)	28	R	<b>16ER28UNJ</b>	●	●	0.375	0.020	0.047	0.006
16	(0.042)	24	R	<b>16ER24UNJ</b>	●	●	0.375	0.035	0.028	0.007
16	(0.050)	20	R	<b>16ER20UNJ</b>	●	●	0.375	0.035	0.028	0.008
16	(0.056)	18	R	<b>16ER18UNJ</b>	●	●	0.375	0.035	0.028	0.009
16	(0.063)	16	R	<b>16ER16UNJ</b>	●	●	0.375	0.035	0.028	0.010
16	(0.071)	14	R	<b>16ER14UNJ</b>	●	●	0.375	0.063	0.047	0.012
16	(0.083)	12	R	<b>16ER12UNJ</b>	●	●	0.375	0.063	0.047	0.014
16	(0.100)	10	R	<b>16ER10UNJ</b>	●	●	0.375	0.063	0.047	0.017
16	(0.125)	8	R	<b>16ER8UNJ</b>	●	●	0.375	0.063	0.047	0.021

● : Line up / 5 pieces per package

# CSVRL

For Cam-style machine



Inch	H	B	LF	LH	HBKW	HF	K1	WF2
CSVL06-IN-NC	0.375	0.375	4.724	0.787	0	0.375	1°	0.004
CSVL08-IN-NC	0.500	0.500	4.724	0.787	0	0.500	1°	0.004
CSVR06-IN-NC	0.375	0.375	4.724	0.787	0	0.375	1°	0.004
CSVR08-IN-NC	0.500	0.500	4.724	0.787	0	0.500	1°	0.004

Metric	H	B	LF	LH	HBKW	HF	K1	WF2
CSVR07	7	7	140	20	0.5	7	1°	0.1
CSVR07GX	7	7	85	20	0.5	7	1°	0.1
CSVR08	8	8	140	20	0	8	1°	0.1
CSVR08GX	8	8	85	20	0	8	1°	0.1
CSVR095	9.5	9.5	140	20	0	9.5	1°	0.1
CSVR10	10	10	140	20	0	10	1°	0.1
CSVR12	12	12	140	20	0	12	1°	0.1
CSVR12GX	12	12	85	20	0	12	1°	0.1
CSVL07	7	7	140	20	0.5	7	1°	0.1
CSVL08	8	8	140	20	0	8	1°	0.1
CSVL10	10	10	140	20	0	10	1°	0.1
CSVL08NC	8	8	120	20	0	8	1°	0.1
CSVL10NC	10	10	120	20	0	10	1°	0.1
CSVL12NC	12	12	120	20	0	12	1°	0.1
CSVR08NC	8	8	120	20	0	8	1°	0.1
CSVR08NC-F	8	8	120	20	0	8	1°	0.1
CSVR10GXNC	10	10	85	20	0	10	1°	0.1
CSVR10NC	10	10	120	20	0	10	1°	0.1
CSVR12NC	12	12	120	20	0	12	1°	0.1

**Insert**  
 CSV series  
 CSVF..  
 CSVB..  
 CSVC..  
 CSVG..  
 CSVT..

**Insert**  
 CSV series  
 CSVF..  
 CSVB..  
 CSVC..  
 CSVG..  
 CSVT..

## SPARE PARTS



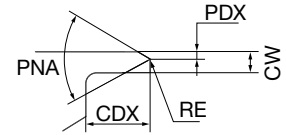
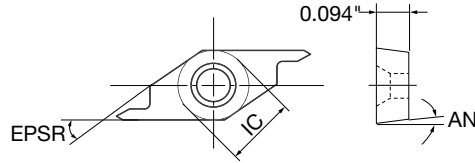
Designation	Clamp screw	Wrench (for Clamp screw)
CSVRL*	LRIS-2.5*7	CLR-15S

Reference pages: Inserts → 5-28

Grade 1  
 Insert 2  
 Ext. Toolholder 3  
 Int. Toolholder 4  
 Threading 5  
 Grooving 6  
 Shaper 7  
 Endmill 8  
 Drilling Tool 9  
 Technical Reference 10

# INSERT

## CSVT-A without chipbreaker



Right hand (R) shown.

<b>P</b>	Steel	★
<b>M</b>	Stainless	☆
<b>N</b>	Non-ferrous	
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

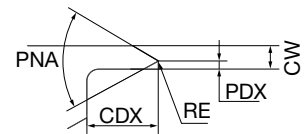
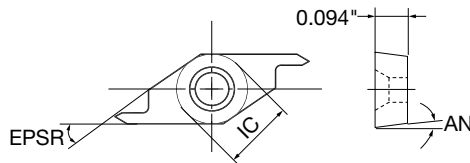
★ : First choice  
☆ : Second choice

Designation	HAND	Coated		Mirror finish	Pitch (mm)	PNA	CW (in)	PDX (in)	CDX (in)	IC (in)	AN	EPSR	RE (in)
		VM1											
CSVT11FRP60-035A	R	●	Ⓜ	0.2 - 0.5	60°	0.039	0.014	0.118	0.250	7°	35°	0.001MAX	
CSVT11FLP60-035A	L	●	Ⓜ	0.2 - 0.5	60°	0.039	0.014	0.118	0.250	7°	35°	0.001MAX	

All angles shown are obtained when insert is set in the holder.

● : Line up

## CSVT-B without chipbreaker



Right hand (R) shown.

<b>P</b>	Steel	★
<b>M</b>	Stainless	☆
<b>N</b>	Non-ferrous	
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

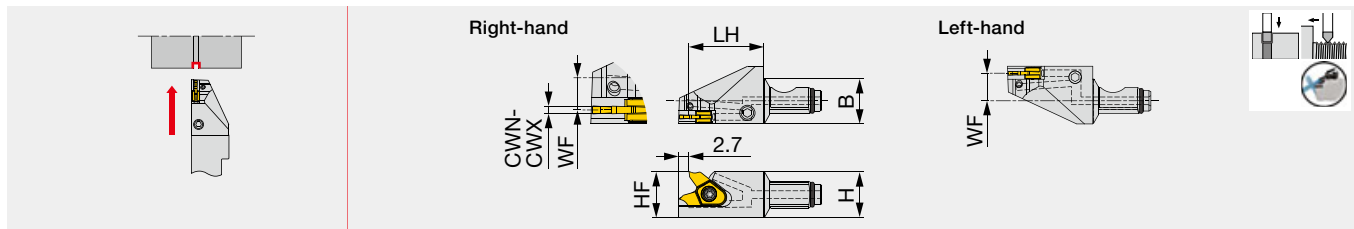
★ : First choice  
☆ : Second choice

Designation	HAND	Coated		Mirror finish	Pitch (mm)	PNA	CW (in)	PDX (in)	CDX (in)	IC (in)	AN	EPSR	RE (in)
		VM1											
CSVT11FRP60-035B	R	●	Ⓜ	0.2 - 0.5	60°	0.039	0.014	0.118	0.250	7°	35°	0.001MAX	
CSVT11FLP60-035B	L	●	Ⓜ	0.2 - 0.5	60°	0.039	0.014	0.118	0.250	7°	35°	0.001MAX	

All angles shown are obtained when insert is set in the holder.

● : Line up

Modular head for external grooving and threading, with high pressure coolant capability



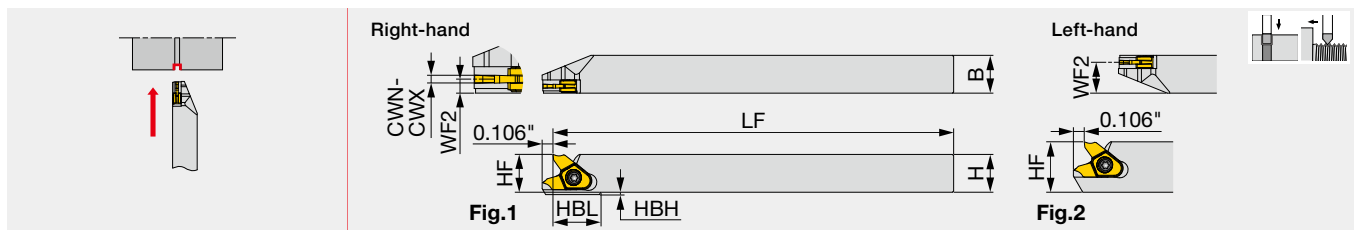
Metric	Pitch	TPI	H	B	LH	HF	WF (1)	Insert	Torque
QC12-SVER/L10-CHP	0.4 - 1.5	64 - 12	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	4.19/7.19 (0.165"/0.283")	VG*10...	1.3 (0.96)

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	TPI	H	B	LF	HF	WF2 (1)	HBL	HBH	Insert	Torque	Fig.
SVER/L06-10	0.4 - 1.5	64 - 12	0.375	0.375	4.750	0.375	0.070/0.304	0.472	0.024	VG*10...	0.96	1
SVER/L08-10	0.4 - 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	WF2 (1)	HBL	HBH	Insert	Torque*	Fig.
SVER/L0808H08	0.4 - 1.5	64 - 12	8	8	100	8	1.23/6.78	-	-	VGP08...	1.1	2
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)

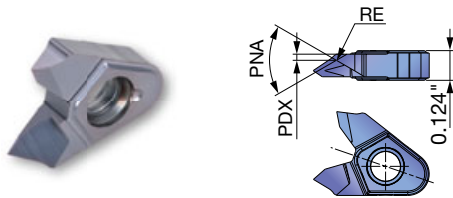
(1) "WF" indicates the distance from the reference position to the center of the cutting edge width. The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.

### 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	-

## INSERT

### VGT10 (For threading / sharp edge)



<b>P</b>	Steel	★				
<b>M</b>	Stainless	★				
<b>K</b>	Cast iron					
<b>N</b>	Non-ferrous	★				
<b>S</b>	Superalloys	★				
<b>H</b>	Hard materials					

★ : First choice

Designation	RE (in)	Coated					Pitch (mm)	TPI	PDX (in)	PNA
		SH725								
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

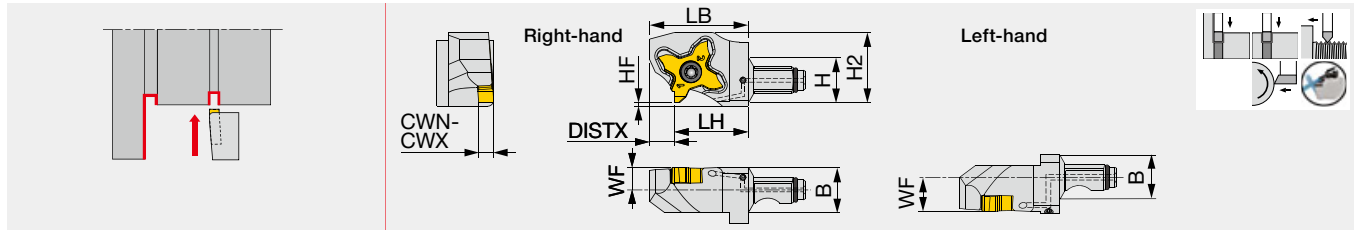
## STANDARD CUTTING CONDITIONS

### Threading

ISO	Workpiece materials	Grade	Cutting speed Vc (sfm)	Pitch (mm)	TPI
<b>P</b>	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
<b>M</b>	Stainless steels 304, etc.	SH725	164 - 328	0.4 - 2	64 - 12
<b>N</b>	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
<b>S</b>	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



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 (0.750")	12 (0.750")	19.5 (0.768")	0	6 / 9 (0.236" / 0.354")	26 (1.024")	18.6 (0.732")	6.5 (0.256")	TC*18...	1.2 (0.89)
QC16-STCR/L18-Y-CHP	0.4 - 3	16 (1.000")	16 (1.000")	21 (0.827")	0	8 / 13 (0.315" / 0.512")	27.5 (1.083")	18.6 (0.732")	6.5 (0.256")	TC*18...	1.2 (0.89)

Torque\* : Recommended clamping torque: lbs-ft (N-m)

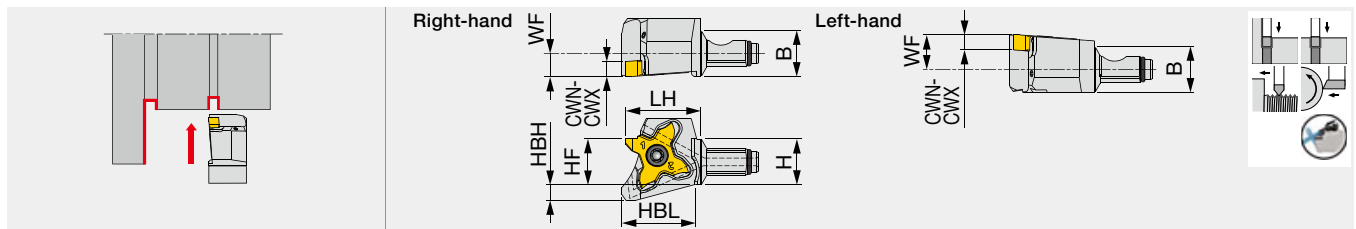
WF\*\* : The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.

Through-coolant head

Note: Use the right-hand insert (TC\*18R...) for a right-hand holder (QC\*\*-STCR...); the left-hand insert (TC\*18L...) for a left-hand holder (QC\*\*-STCL...).

### 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-STCR/L18-CHP	0.4 - 3	12 (0.750")	12 (0.750")	19.5 / 21 (0.768" / 0.827")	12 (0.472")	4.2 (0.165")	19.3 (0.760")	6 / 9 (0.236" / 0.354")	TC*18...	1.2 (0.89)
QC16-STCR/L18-CHP	0.4 - 3	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	-	-	13 (0.512")	TC*18...	1.2 (0.89)

Torque\* : Recommended clamping torque: lbs-ft (N-m)

LH\*, 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 (QC\*\*-STCR...); the left-hand insert (TC\*18L...) for a left-hand holder (QC\*\*-STCL...).

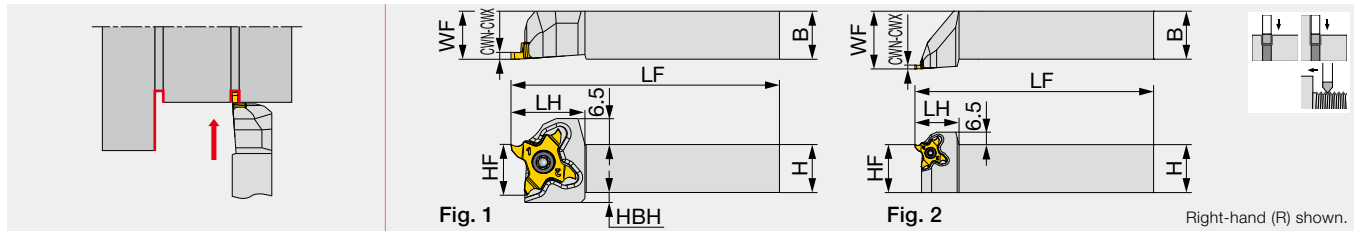
### SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QC12-STCR18...	CSTC-4L100DL	T-1008/5	ORSS-0454.5X1.0NBR70
QC12-STCL18...	CSTC-4L100DR	T-1008/5	ORSS-0454.5X1.0NBR70
QC16-STCR18...	CSTC-4L100DL	T-1008/5	ORSS-0757.5X1.0NBR70
QC16-STCL18...	CSTC-4L100DR	T-1008/5	ORSS-0757.5X1.0NBR70

Reference pages: Inserts → 5-13, 5-19

Standard cutting conditions → 5-33

### External grooving and threading toolholder



Inch	Pitch	H	B	LF	LH	HF	WF	HBH	Insert	Torque	Fig.
STCR/L06-18	0.4 - 3	0.375	0.375	4.750	0.730	0.375	0.375	0.177	TC*18...	0.89	1
STCR/L08-18	0.4 - 3	0.500	0.500	4.750	0.730	0.500	0.500	0.098	TC*18...	0.89	1
STCR/L10-18	0.4 - 3	0.625	0.625	4.750	0.730	0.625	0.625	-	TC*18...	0.89	1
STCR/L12-18	0.4 - 3	0.750	0.750	4.750	0.900	0.750	1.000	-	TC*18...	0.89	2
STCR/L16-18	0.4 - 3	1.000	1.000	5.500	0.900	1.000	1.250	-	TC*18...	0.89	2

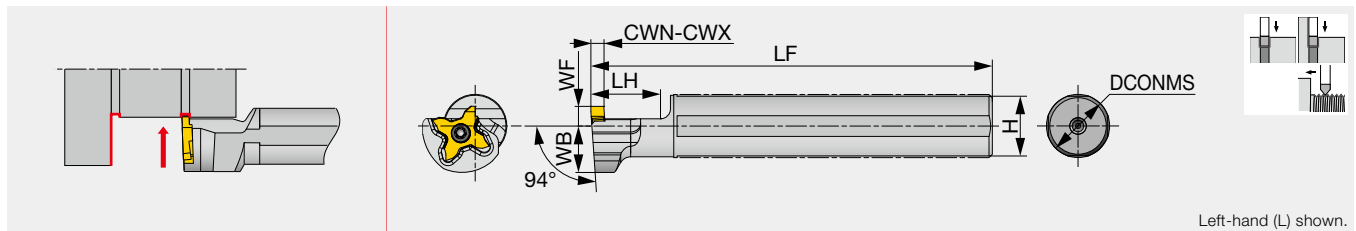
Metric	Pitch	H	B	LF	LH	HF	WF	HBH	Insert	Torque*	Fig.
STCR/L1010X18	0.4 - 3	10	10	120	18.5	10	10	4.5	TC*18...	1.2	1
STCR/L1212F18	0.4 - 3	12	12	85	18.5	12	12	2.5	TC*18...	1.2	1
STCR/L1212X18	0.4 - 3	12	12	120	18.5	12	12	2.5	TC*18...	1.2	1
STCR/L1616X18	0.4 - 3	16	16	120	18.5	16	16	-	TC*18...	1.2	1
STCR/L2020H18	0.4 - 3	20	20	100	18.5	20	20	-	TC*18...	1.2	1
STCR/L2020X18	0.4 - 3	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...).

### JS-STCL18

### External grooving and threading toolholder with round shank, for Swiss lathes



Metric	Pitch	DCONMS	LF	LH	H	WB	WF	Insert	Torque*
JS14H-STCL18	0.4 - 3	14	100	20	13	14	6	TC*18R...	1.2
JS159F-STCL18	0.4 - 3	15.875	85	20	15	14	6	TC*18R...	1.2
JS16F-STCL18	0.4 - 3	16	85	20	15	14	6	TC*18R...	1.2
JS19G-STCL18	0.4 - 3	19.05	90	20	18	14	6	TC*18R...	1.2
JS19X-STCL18	0.4 - 3	19.05	120	20	18	14	6	TC*18R...	1.2
JS20G-STCL18	0.4 - 3	20	90	20	19	14	6	TC*18R...	1.2
JS20X-STCL18	0.4 - 3	20	120	20	19	14	6	TC*18R...	1.2
JS22X-STCL18	0.4 - 3	22	120	20	21	12.25	10	TC*18R...	1.2
JS25H-STCL18	0.4 - 3	25	100	20	24	12.25	10	TC*18R...	1.2
JS254X-STCL18	0.4 - 3	25.4	120	20	24	12.25	10	TC*18R...	1.2

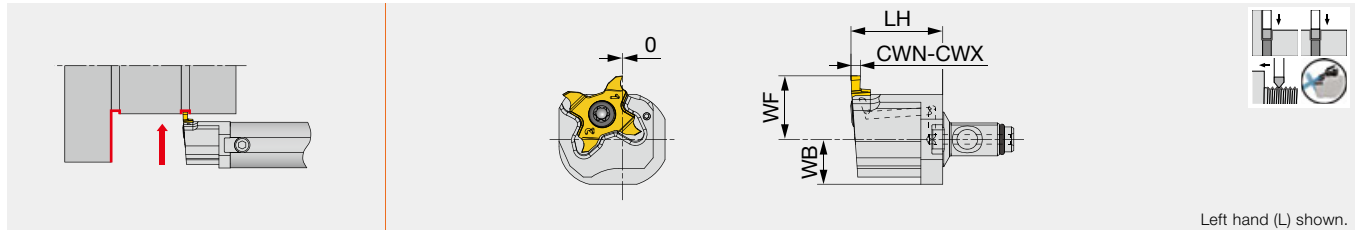
The left hand toolholder (STCL...) is used with the right hand inserts (TC\*18R...)

\*Torque: Recommended clamping torque: N-m

### SPARE PARTS

Designation	Clamping screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
STCR**18, JS...STCL18	CSTC-4L100DL	T-1008/5	-	-	-	-
STCL**18	CSTC-4L100DR	T-1008/5	-	-	-	-

Threading pitch range: 0.8 - 3 mm



Metric	CWN	CWX	LH	WF	WB	Insert	Torque*	Shank
QR12E-STCL18-CHP	0.33 (0.013")	3.18 (0.125")	19.5 (0.768")	11.5 (0.453")	7 (0.276")	TC*18R...	1.2 (0.89")	A16*-QR12
QR12G-STCL18-CHP	0.33 (0.013")	3.18 (0.125")	19.5 (0.768")	13.5 (0.531")	8 (0.315")	TC*18R...	1.2 (0.89")	A19/20*-QR12

Use left-hand toolholders (L) with right-hand inserts (R).  
 Torque\*: Recommended clamping torque: N-m (lbf-ft)  
 Assembled dimensions with shank are shown on page 9.

### SPARE PARTS

Designation	Clamping screw	Wrench	O-ring
QR12*-STCL18-CHP	CSTC-4L100DL	T-1008/5	ORSS-0454.5X1.0NBR70

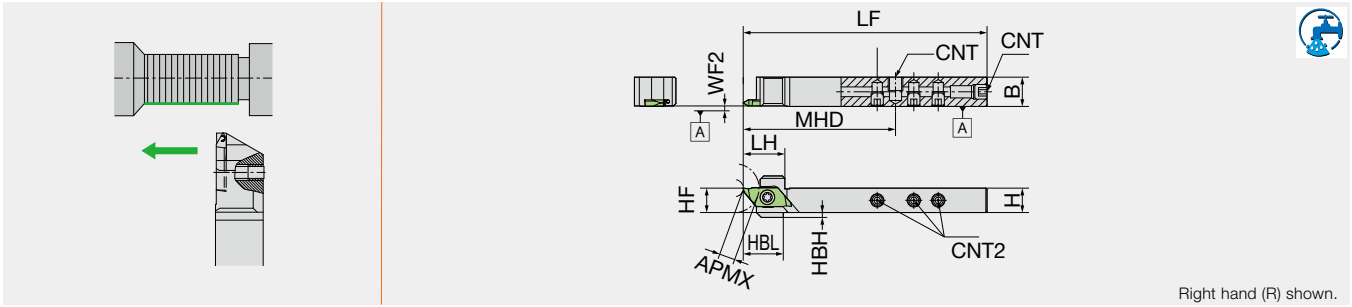
### STANDARD CUTTING CONDITIONS

TCT18FR/R-ISO (Full profile threading insert) / TCT18FR (Threading insert)

ISO	Workpiece materials	Priority	Grades	Cutting speed Vc (sfm)	Pitch (mm)	TPI
<b>P</b>	Low carbon steel 1015, 1020, etc.	First choice	SH725	197 - 492	0.4 - 2	64 - 18
		Toughness	AH725	197 - 492	0.8 - 3	32 - 8
	Carbon steels, Alloy steel 1045, 1055 etc.	First choice	SH725	197 - 492	0.4 - 2	64 - 18
		Toughness	AH725	197 - 492	0.8 - 3	32 - 8
<b>M</b>	Prehardened steel NAK80, PX5, etc.	First choice	SH725	197 - 492	0.4 - 2	64 - 18
		Toughness	AH725	197 - 492	0.8 - 3	32 - 8
<b>K</b>	Stainless steel 304SS, etc.	First choice	SH725	164 - 262	0.4 - 2	64 - 18
		Toughness	AH725	164 - 262	0.8 - 3	32 - 8
	Gray cast iron Class 25, etc.	First choice	AH725	164 - 328	0.8 - 3	32 - 8
		Sharpness	SH725	164 - 328	0.4 - 2	64 - 18
<b>S</b>	Ductile cast iron 60-40-18, 80-55-06, etc.	First choice	AH725	164 - 328	0.8 - 3	32 - 8
		Sharpness	SH725	164 - 328	0.4 - 2	64 - 18
	Titanium alloys Ti-6Al-4V, etc.	First choice	SH725	98 - 328	0.4 - 2	64 - 18
		Toughness	AH725	98 - 328	0.8 - 3	32 - 8
Superalloys Inconel718, etc.	First choice	SH725	98 - 328	0.4 - 2	64 - 18	
	Toughness	AH725	98 - 328	0.8 - 3	32 - 8	

## TTP-OH3

Direct connect coolant port 3-hole type



Right hand (R) shown.

Metric	Pitch	H	B	LF	LH	APMX	HBH	HBL	HF	MHD	WF2	CNT	CNT2	Insert
TTPR1012H-OH3	0.2 - 1.5	10	12	100	17.15	6.5	2	16.5	10	62.5	0	M6*1	M5	TTP..
TTPL1012H-OH3	0.2 - 1.5	10	12	100	17.15	6.5	2	16.5	10	62.5	0	M6*1	M5	TTP..

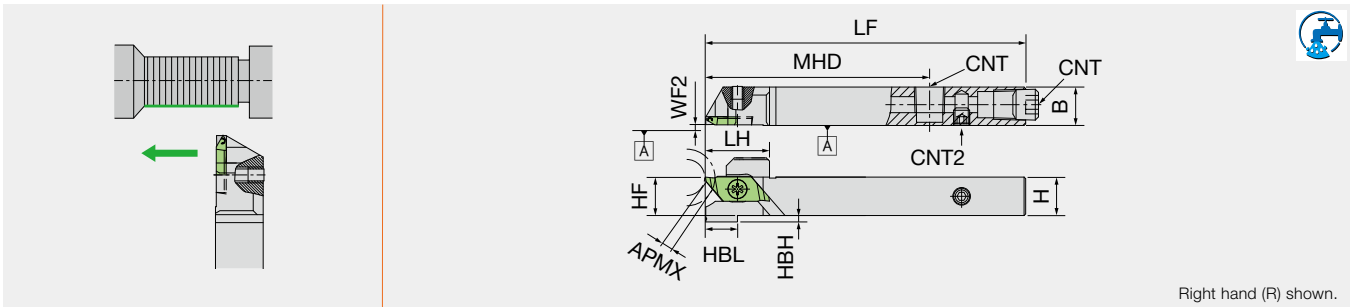
NOTE: Reference Chart of OH3 Hole Position → A011

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
TTPR/L1012H-OH3	LRIS-4*12PW	SS0605SC	SS0505SC	CLR-15S	LW-2.5

## TTPR/L-OH2

Direct connect coolant port 1-hole type



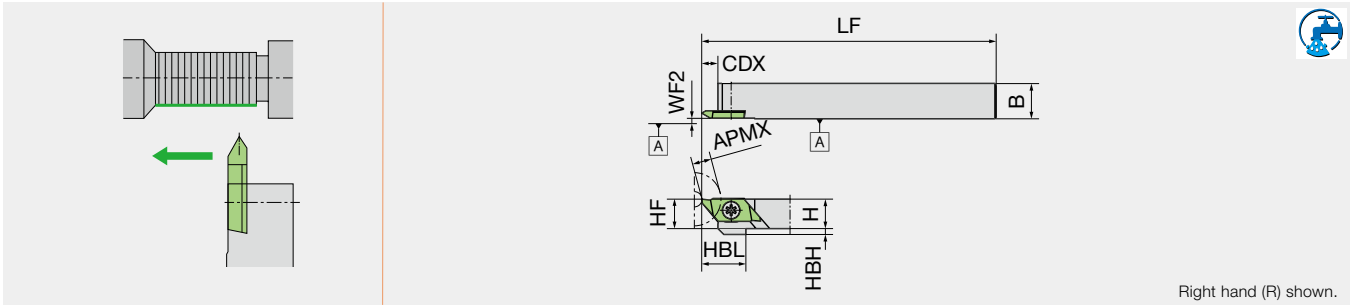
Right hand (R) shown.

Inch	Pitch	H	B	LF	LH	APMX	HBH	HBL	HF	MHD	WF2	CNT	CNT2	Insert
TTPR08H-IN-OH2	0.2 - 1.5	0.500	0.500	3.937	0.787	0.217	-	-	0.500	2.756	0.008	NPT1/8	M5	TTP..
TTPR10X-IN-OH2	0.2 - 1.5	0.625	0.625	4.724	0.768	0.217	-	-	0.625	2.756	0.008	NPT1/8	M5	TTP..
TTPL08H-IN-OH2	0.2 - 1.5	0.500	0.500	3.937	0.787	0.217	-	-	0.500	2.756	0.008	NPT1/8	M5	TTP..
TTPL10X-IN-OH2	0.2 - 1.5	0.625	0.625	4.724	0.768	0.217	-	-	0.625	2.756	0.008	NPT1/8	M5	TTP..
Metric	Pitch	H	B	LF	LH	APMX	HBH	HBL	HF	MHD	WF2	CNT	CNT2	Insert
TTPR12H-OH2	0.2 - 1.5	12	12	100	20	5.5	2	10	12	70	0.2	Rc1/8	M5	TTP..
TTPR16X-OH2	0.2 - 1.5	16	16	120	19.5	5.5	-	-	16	70	0.2	Rc1/8	M5	TTP..
TTPL12H-OH2	0.2 - 1.5	12	12	100	20	5.5	2	10	12	70	0.2	Rc1/8	M5	TTP..
TTPL16X-OH2	0.2 - 1.5	16	16	120	19.5	5.5	-	-	16	70	0.2	Rc1/8	M5	TTP..

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
TTPR/L*-IN-OH2	LRIS-4*12PW	SPNPT1/8	SS0505SC	CLR-15S	LW-2.5
TTPR/L*-OH2	LRIS-4*12PW	SPR1/8	SS0505SC	CLR-15S	LW-2.5

Reference pages : Inserts → 5-37



Right hand (R) shown.

Inch	Pitch	H	B	LF	APMX	CDX	HBH	HBL	HF	WF2	Insert
TTPR06-IN	0.2 - 1.5	0.375	0.375	4.724	0.256	0.276	0.079	0.591	0.375	0.008	TTP..
TTPR08-IN	0.2 - 1.5	0.500	0.500	4.724	0.256	0.276	-	-	0.500	0.008	TTP..
TTPR10-IN	0.2 - 1.5	0.625	0.625	4.724	0.256	0.276	-	-	0.625	0.008	TTP..
TTPL06-IN	0.2 - 1.5	0.375	0.375	4.724	0.256	0.276	0.079	0.591	0.375	0.008	TTP..
TTPL08-IN	0.2 - 1.5	0.500	0.500	4.724	0.256	0.276	-	-	0.500	0.008	TTP..
TTPL10-IN	0.2 - 1.5	0.625	0.625	4.724	0.256	0.276	-	-	0.625	0.008	TTP..
Metric	Pitch	H	B	LF	APMX	CDX	HBH	HBL	HF	WF2	Insert
TTPR08	0.2 - 1.5	8	10	120	6.5	7	4	15	8	0.2	TTP..
TTPR10	0.2 - 1.5	10	10	120	6.5	7	2	15	10	0.2	TTP..
TTPR12	0.2 - 1.5	12	12	120	6.5	7	-	-	12	0.2	TTP..
TTPR12GX	0.2 - 1.5	12	12	85	6.5	7	-	-	12	0.2	TTP..
TTPR16	0.2 - 1.5	16	16	120	6.5	7	-	-	16	0.2	TTP..
TTPR16H	0.2 - 1.5	16	16	100	6.5	7	-	-	16	0.2	TTP..
TTPR20F	0.2 - 1.5	20	20	80	6.5	7	-	-	20	0.2	TTP..
TTPL08	0.2 - 1.5	8	10	120	6.5	7	4	15	8	0.2	TTP..
TTPL10	0.2 - 1.5	10	10	120	6.5	7	2	15	10	0.2	TTP..
TTPL12	0.2 - 1.5	12	12	120	6.5	7	-	-	12	0.2	TTP..
TTPL12GX	0.2 - 1.5	12	12	85	6.5	7	-	-	12	0.2	TTP..
TTPL16	0.2 - 1.5	16	16	120	6.5	7	-	-	16	0.2	TTP..
TTPL16H	0.2 - 1.5	16	16	100	6.5	7	-	-	16	0.2	TTP..
TTPL20F	0.2 - 1.5	20	20	80	6.5	7	-	-	20	0.2	TTP..

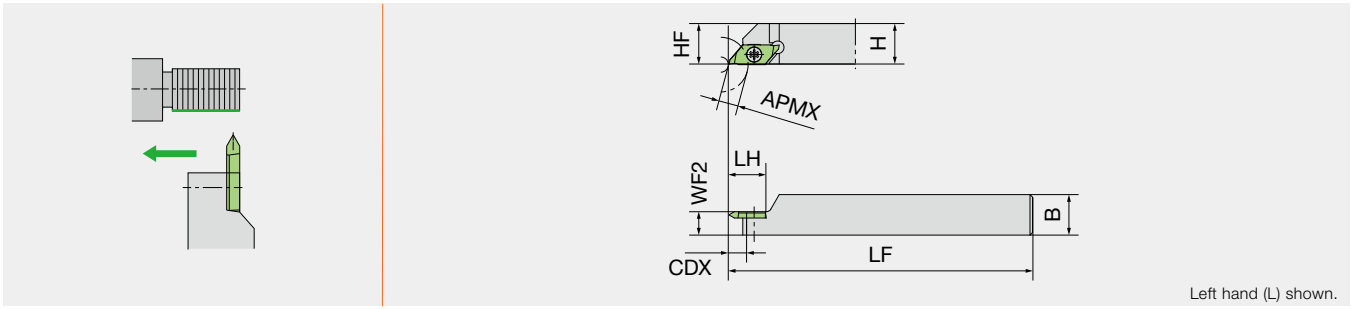
SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
TTPR/L06-IN	LRIS-4 × 10PW	CLR-15S
TTPR/L08-IN	LRIS-4 × 10PW	CLR-15S
TTPR/L10-IN	LRIS-4 × 12PW	CLR-15S
TTPR/L08	LRIS-4*10PW	CLR-15S
TTPR/L10	LRIS-4*10PW	CLR-15S
TTPR/L12**	LRIS-4*12PW	CLR-15S
TTPR/L16**	LRIS-4*12PW	CLR-15S
TTPR/L20**	LRIS-4*10	LLR-25S-20*65

## TTPR/L-F

Shifted



Left hand (L) shown.

Metric	Pitch	H	B	LF	LH	APMX	CDX	HF	WF	WF2	Insert
TTPL12-F06	0.2 - 1.5	12	12	120	16	6.5	5.5	12	7.25	-	TTP..
TTPL16-F08	0.2 - 1.5	16	16	120	16	6.5	5.5	16	9.25	-	TTP..

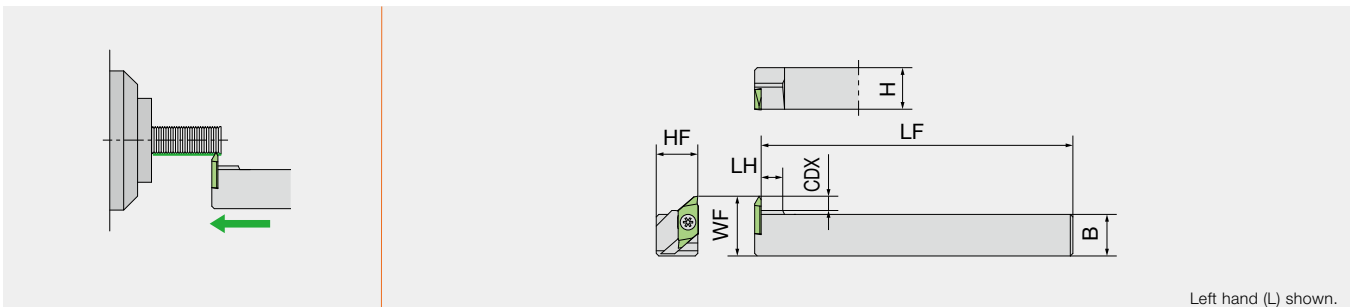
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
TTPL**	LRIS-4*6	LLR-25S

## CH-TTPL

For horizontal gang style tool post



Left hand (L) shown.

Metric	Pitch	H	B	LF	LH	CDX	HF	WF	Insert
CH-TTPL16	0.2 - 1.5	16	16	120	9	5.5	16	23	TTP..
CH-TTPL20	0.2 - 1.5	20	20	120	9	5.5	20	27	TTP..

NOTE: Use a right-handed (R) insert.

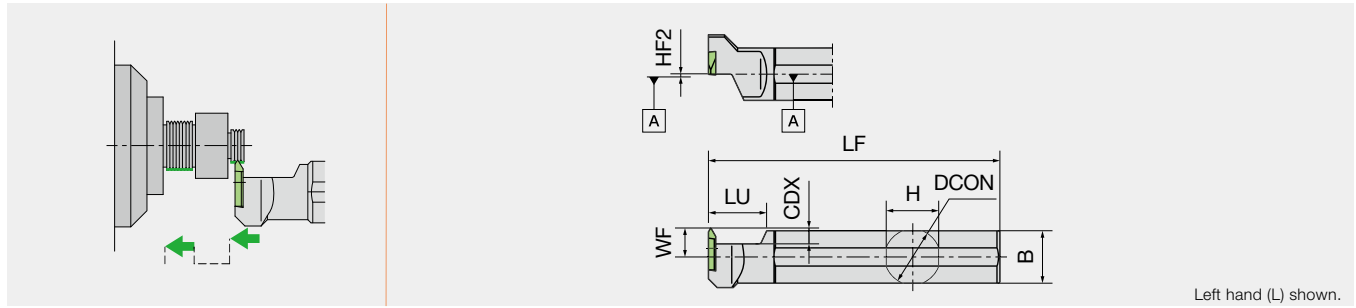
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CH-TTPL**	LRIS-4*10	LLR-25S

# DS-TTPL

DS Toolholders / For sleeve tool post



Metric	Pitch	H	B	LF	CDX	DCON	HF2	LU	WF	Insert
DS-TTPL16F	0.2 - 1.5	15	15	80	5.5	16	0	20	10	TTP..
DS-TTPL19	0.2 - 1.5	18	18	120	5.5	19.05	0	20	10	TTP..
DS-TTPL20	0.2 - 1.5	19	19	120	5.5	20	0	20	10	TTP..
DS-TTPL22	0.2 - 1.5	21	21	120	5.5	22	0	20	10	TTP..
DS-TTPL25	0.2 - 1.5	24	24	150	5.5	25.4	0	20	10	TTP..
DS-TTPL25-MET	0.2 - 1.5	24	24	150	5.5	25	0	20	10	TTP..

Left hand (L) shown.

NOTE: Use a right-handed (R) insert.

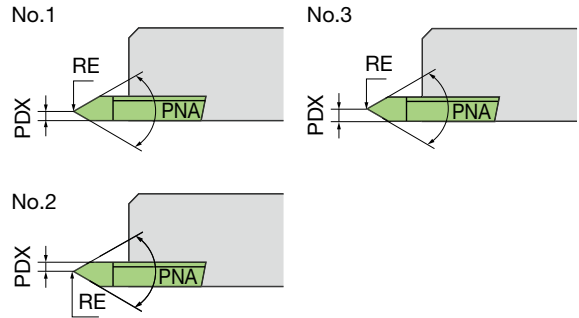
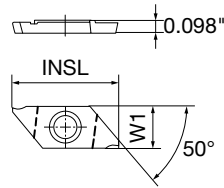
## SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
DS-TTPL**	LRIS-4*10	LLR-25S-20*65

## INSERT

### TTP-R



	P	M	N	S	H
Steel	★	☆			
Stainless	☆	★			
Non-ferrous		☆	★		
Superalloys	☆			★	
Hard materials	★				

★ : First choice  
☆ : Second choice

Designation	HAND	Coated			Mirror finish	Pitch (mm)	TPI (mm)	PNA	PDX (in)	INSL (in)	W1 (in)	RE (in)	Figure
		QM3	ZM3	KM1									
TTP60FR2A	R		●			0.2 - 0.35	127 - 72	60°	0.008	0.783	0.315	0.002MAX Flat	1
TTP60FR4A	R	●	●			0.2 - 0.75	127 - 34	60°	0.016	0.783	0.315	0.002MAX Flat	1
TTP60FR4AS	R			●	Ⓜ	0.2 - 0.75	127 - 34	60°	0.016	0.783	0.315	0.002MAX Flat	1
TTP60FR8A	R	●	●			0.4 - 1.25	63 - 21	60°	0.031	0.783	0.315	0.002	1
TTP60FR8AS	R			●	Ⓜ	0.4 - 1.25	63 - 21	60°	0.031	0.783	0.315	0.002	1
TTP55FR8A	R		●			-	48 - 16	55°	0.031	0.783	0.315	0.002	1
TTP60FR2B	R		●			0.2 - 0.35	127 - 72	60°	0.008	0.783	0.315	0.002MAX Flat	2
TTP60FR4B	R	●	●			0.2 - 0.75	127 - 34	60°	0.016	0.783	0.315	0.002MAX Flat	2
TTP60FR4BS	R			●	Ⓜ	0.2 - 0.75	127 - 34	60°	0.016	0.783	0.315	0.002MAX Flat	2
TTP60FR8B	R	●	●			0.4 - 1.25	63 - 21	60°	0.031	0.783	0.315	0.002	2
TTP60FR8BS	R			●	Ⓜ	0.4 - 1.25	63 - 21	60°	0.031	0.783	0.315	0.002	2
TTP55FR8B	R		●			-	48 - 16	55°	0.031	0.783	0.315	0.002	2
TTP60FR-N	R	●	●			1 - 1.5	25 - 17	60°	0.049	0.783	0.315	0.004	3
TTP60FR-NS	R			●	Ⓜ	1 - 1.5	25 - 17	60°	0.049	0.783	0.315	0.004	3
TTP60FR-N02	R	●	●			1.5 - 2	16 - 13	60°	0.049	0.783	0.315	0.008	3

● : Line up

Grade 1

Insert 2

Ext. Toolholder 3

Int. Toolholder 4

Threading 5

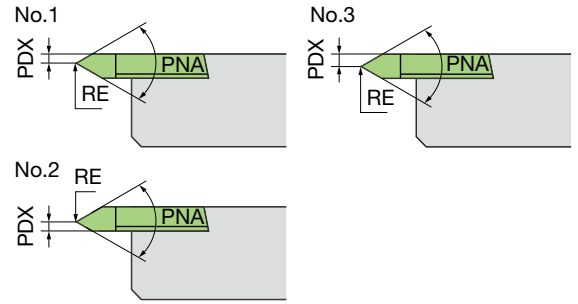
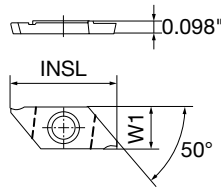
Grooving 6

Shaper 7

Endmill 8

Drilling Tool 9

Technical Reference 10



P	Steel	★	☆		
M	Stainless	☆	★		
N	Non-ferrous		☆	★	
S	Superalloys	☆			
H	Hard materials	★			

★ : First choice  
☆ : Second choice

Designation	HAND	Coated			Uncoated			Mirror finish	Pitch (mm)	TPI (mm)	PNA	PDX (in)	INSL (in)	W1 (in)	RE (in)	Figure
		QM3	ZM3	KM1	QM3	ZM3	KM1									
TTP60FL2A	L		●					0.2 - 0.35	127 - 72	60°	0.008	0.783	0.315	0.002MAX Flat	1	
TTP60FL4A	L	●	●					0.2 - 0.75	127 - 34	60°	0.016	0.783	0.315	0.002MAX Flat	1	
TTP60FL4AS	L			●			Ⓜ	0.2 - 0.75	127 - 34	60°	0.016	0.783	0.315	0.002MAX Flat	1	
TTP60FL8A	L	●	●					0.4 - 1.25	63 - 21	60°	0.031	0.783	0.315	0.002	1	
TTP60FL8AS	L			●			Ⓜ	0.4 - 1.25	63 - 21	60°	0.031	0.783	0.315	0.002	1	
TTP55FL8A	L		●					-	48 - 16	55°	0.031	0.783	0.315	0.002	1	
TTP60FL2B	L		●					0.2 - 0.35	127 - 72	60°	0.008	0.783	0.315	0.002MAX Flat	2	
TTP60FL4B	L	●	●					0.2 - 0.75	127 - 34	60°	0.016	0.783	0.315	0.002MAX Flat	2	
TTP60FL4BS	L			●			Ⓜ	0.2 - 0.75	127 - 34	60°	0.016	0.783	0.315	0.002MAX Flat	2	
TTP60FL8B	L	●	●					0.4 - 1.25	63 - 21	60°	0.031	0.783	0.315	0.002	2	
TTP60FL8BS	L			●			Ⓜ	0.4 - 1.25	63 - 21	60°	0.031	0.783	0.315	0.002	2	
TTP55FL8B	L		●					-	48 - 16	55°	0.031	0.783	0.315	0.002	2	
TTP60FL-N	L	●	●					1 - 1.5	25 - 17	60°	0.049	0.783	0.315	0.004	3	
TTP60FL-NS	L			●			Ⓜ	1 - 1.5	25 - 17	60°	0.049	0.783	0.315	0.004	3	
TTP60FL-N02	L	●	●					1.5 - 2	16 - 13	60°	0.049	0.783	0.315	0.008	3	

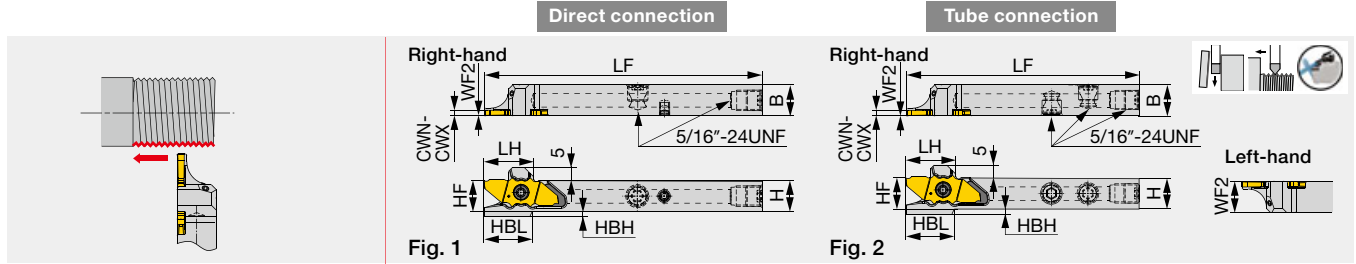
● : Line up

## General Information

Right Hand Toolholders				Left Hand Toolholders			
Guide bushing side		Sub spindle side / Part shoulder		Guide bushing side		Sub spindle side / Part shoulder	
<p>Edge Shape : A type</p>		<p>Edge Shape : B type</p>		<p>Edge Shape : B type</p>		<p>Edge Shape : A type</p>	
Toolholder	TTPR	Toolholder	TTPR	Toolholder	TTPL	Toolholder	TTPL
Insert	TTP..FR..A	Insert	TTP..FR..B	Insert	TTP..FL..B	Insert	TTP..FL..A



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

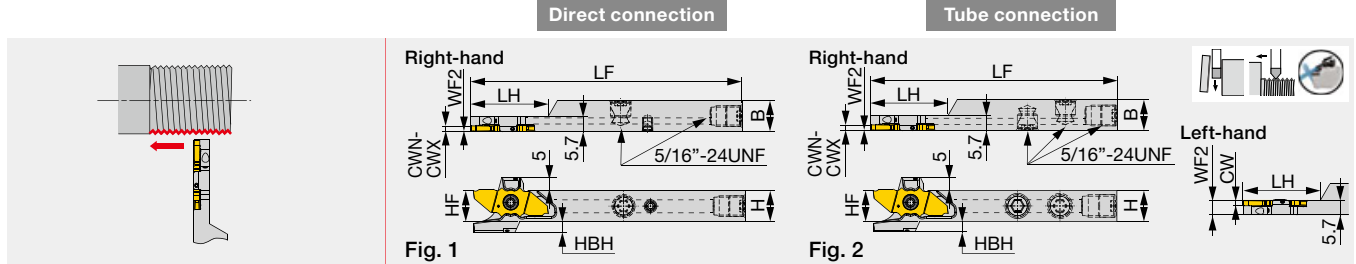
  

Metric	CWN	CWX	H	B	LF <sup>(1)</sup>	LH <sup>(1)</sup>	HF	WF2 <sup>(2)</sup>	HBL <sup>(1)</sup>	HBH	Insert	Torque*	Fig.
JSXXR/L1012H09-CHP <sup>(3)</sup>	0.6	2.5	10	12	102	19.2	10	0.2/11.8	18.7	3	JX**06...,12...,16...,20...	1.2	1
JSXXR/L1212F09-CHP	0.6	2.5	12	12	85	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16...,20...	1.2	2
JSXXR/L1212X09-CHP <sup>(3)</sup>	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 <sup>(3)</sup>	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 <sup>(1)</sup>	LH <sup>(1)</sup>	HF	WF2 <sup>(2)</sup>	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

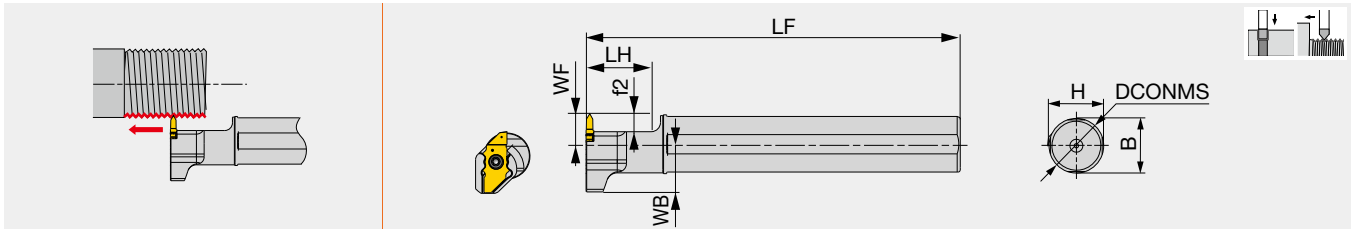
Metric	CWN	CWX	H	B	LF <sup>(1)</sup>	LH <sup>(1)</sup>	HF	WF2 <sup>(2)</sup>	HBH	Insert	Torque*	Fig.
JSXXR1212F09-S-CHP <sup>(4)</sup>	0.6	2.5	12	12	85	26	12	0.2	4	JX**06...,12...,16...,20...	1.2	2
JSXXR/L1212F09B-S-CHP	0.6	2.5	12	12	85	30	12	0.2/5.5	2	JX**06...,12...,16...,20...	1.2	2
JSXXR/L1212X09-S-CHP <sup>(3),(4)</sup>	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 <sup>(3)</sup>	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 <sup>(3),(4)</sup>	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 <sup>(3)</sup>	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

Round shanks, for threading



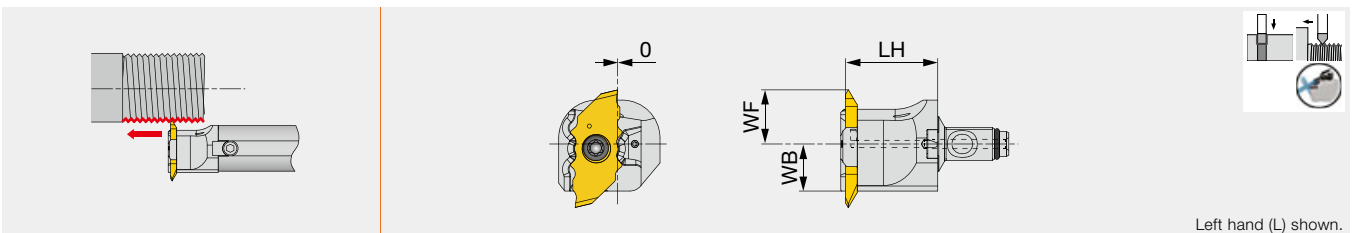
Metric	DCONMS	H	B	LF	LH	WB	WF <sup>(1)</sup>	f2 <sup>(1)</sup>	Insert	Torque*
JS19G-SXXL09	19.05	18	18	90	21	15.43	10	6	JX**06,12*R	1.2
JS19X-SXXL09	19.05	18	18	120	21	15.43	10	6	JX**06,12*R	1.2
JS20G-SXXL09	20	19	19	90	21	15.4	10	6	JX**06,12*R	1.2
JS20X-SXXL09	20	19	19	120	21	15.4	10	6	JX**06,12*R	1.2
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.

**QR12-SXXL-CHP**

Modular head for external grooving and threading, with high pressure coolant capability



Left hand (L) shown.

Metric	LH	WF <sup>(1)</sup>	WB	Insert	Torque*	Shank
QR12E-SXXL09-CHP	19.5 (0.768")	11.5 (0.453")	8 (0.315")	JX*G**R...	1.2 (0.89")	A16*-QR12
QR12G-SXXL09-CHP	19.5 (0.768")	13.5 (0.531")	10 (0.394")	JX*G**R...	1.2 (0.89")	A19/20*-QR12

Use left-hand toolholders (L) with right-hand inserts (R).

Torque\*: Recommended clamping torque: N·m (lbf·ft)

(1) WF (Functional Width) values shown above are true with JX\*\*16... insert. WF will be 2 mm shorter than the above value with JX\*\*12... insert; 4 mm shorter with JX\*\*06... insert; 2 mm longer with JX\*\*20... insert.

Assembled dimensions with shank are shown on page 9.

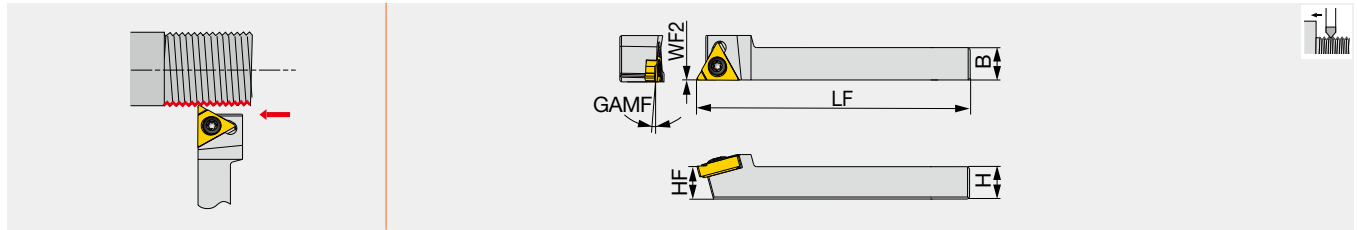
**SPARE PARTS**

Designation	Clamping screw	Wrench	O-ring
JS***-SXXL09	CSTC-4L100DL	T-1008/5	-
QR12*-SXXL09-CHP	CSTC-4L100DL	T-1008/5	ORSS-0454.5X1.0NBR70

**STANDARD CUTTING CONDITIONS**

ISO	Workpiece materials	Grades	Cutting speed Vc (sfm)
<b>P</b>	Low carbon steels S15C, SS400, etc. C15E4, E275A, etc.	SH725	164 - 656
	Carbon steels, Alloy steels S55C, SCM440, etc. C55, 42CrMo4, etc.	SH725	164 - 656
	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 656
<b>M</b>	Stainless steels SUS304, X5CrNi18-9, etc.	SH725	164 - 656
<b>N</b>	Aluminium alloys A5056, A6061, etc.	SH725	492 - 656
	Copper alloy C2600, C280C, etc.	SH725	328 - 656
<b>S</b>	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262
	Superalloys Inconel718, etc.	SH725	98 - 262

### Screw-on external threading toolholders



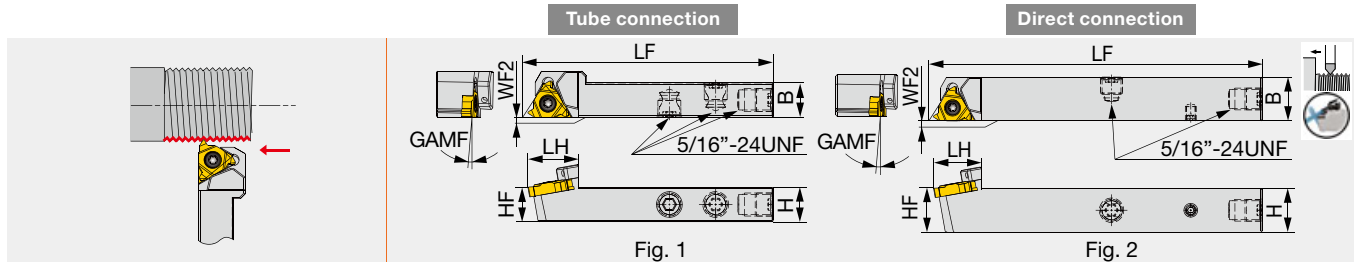
Metric	H	B	LF	HF	WF2	GAMF	Insert
SER0808H11	8	8	100	8	0	1.5°	11ER...
SER1010H11	10	10	100	10	0	1.5°	11ER...

#### SPARE PARTS

Designation	Clamping screw	Wrench 1
SER**H11	SR M2.6-L6.7-S11	T-8/5

### JSE2R16-CHP

#### Screw-on external threading toolholders-High-pressure coolant capability with tube and direct connection



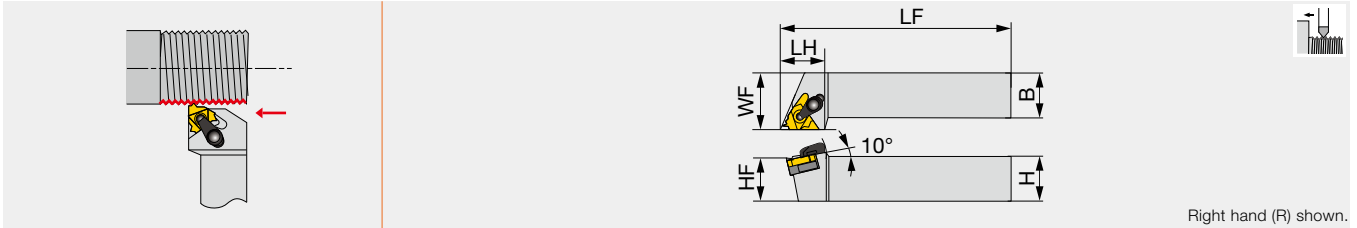
Inch	H	B	LF	LH	HF	WF	GAMF	Type	Insert
JSE2R08F16-CHP	0.500	0.500	3.344	0.748	0.500	0	1°	1	16ER...
JSE2R08X16-CHP	0.500	0.500	4.750	0.748	0.500	0	1°	2	16ER...
JSE2R10X16-CHP	0.625	0.625	4.750	0.748	0.625	0	1°	2	16ER...

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...

#### 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

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...

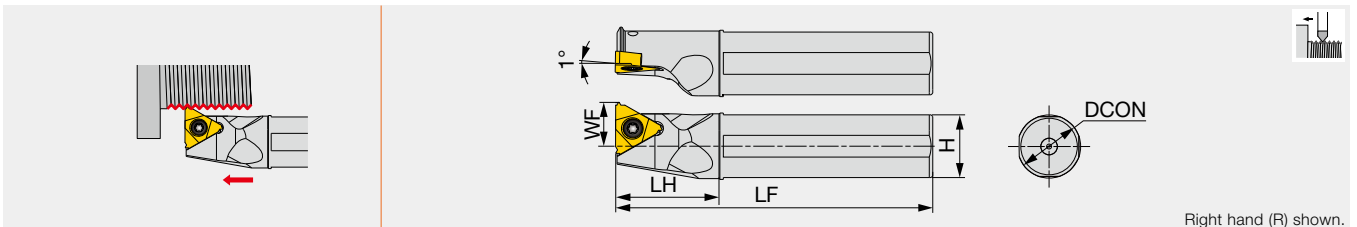
Note: A clamp set consists of a clamp and a clamping screw. A shim set consists of a shim and a shim screw to secure the shim to the shank. Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand. When using DT type, please remove either the clamp set or the insert clamping screw.

### SPARE PARTS

Designation	Clamp set	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
CER/L**16DT	CSP16	CSTB-3.5ST	DTS5-3.5	A16-1DT	P-3.5	T-15F

## 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).

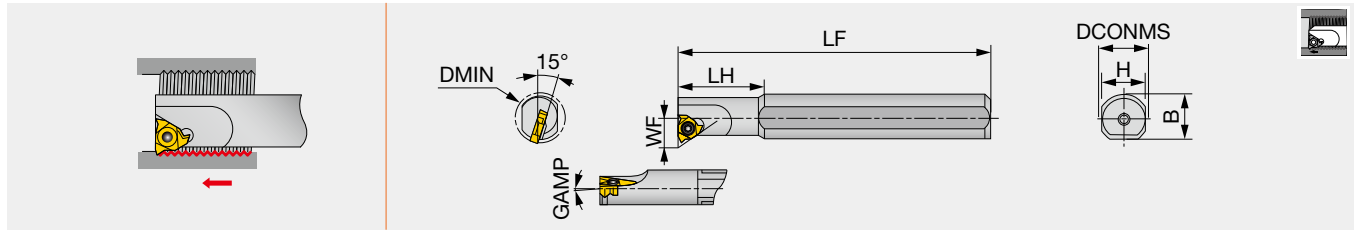
### SPARE PARTS

Designation	Clamping screw	Wrench
JS***-SEL16, B-SER**16	CSTB-3.5	T-15F

Reference pages: Inserts → [5-12](#) -, Standard cutting conditions → [5-44](#)

# SIR

## 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 → 5-12, 5-15, 5-16  
SNR-2/3 : Inserts → 5-12, 5-15, 5-16, 5-24

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

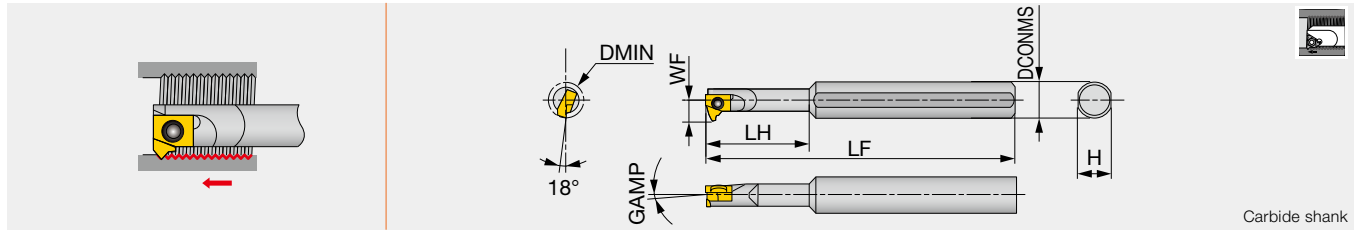
Grooving

Shaper

Endmill

Drilling Tool

Technical Reference



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...).

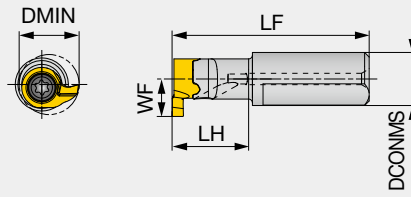
#### SPARE PARTS



Designation	Clamping screw	Wrench
SNR0006H06...	CSTB-2L040	T-6F
SNR0008H06...	CSTB-2L	T-6F
SNR0006K06SC...	CSTB-2L040	T-6F
SNR0008K06SC...	CSTB-2L	T-6F

## STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed: Vc (sfm)						
			AH8015	T05HP	AH725	T313V	NS9530	TH10	BX330
<b>P</b>	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	-	-
<b>M</b>	Stainless steel 304SS, etc.	-	164 - 427	230 - 427	164 - 427	230 - 427	-	-	-
<b>K</b>	Cast iron Class 25, Class 30, etc.	-	197 - 492	230 - 492	164 - 328	230 - 492	-	230 - 295	-
<b>N</b>	Non-ferrous metal	-	-	-	-	-	328 - 1640	-	-
<b>S</b>	Superalloys Ti-6Al-4V, Inconel718, etc.	-	66 - 262	-	-	-	-	33 - 131	-
<b>H</b>	Hardened steel	50 - 60HRC	-	-	-	-	-	33 - 98	164 - 656



Metric	Material	DCONMS	LH	LF	Insert	Torque*
A07080-SMR4	Steel	7	8	24	M*R4...	0.5
E07120-SMR4	Carbide	7	12	29	M*R4...	0.5
A07100-SMR5	Steel	7	10	26	M*R5...	1.3
E07180-SMR5	Carbide	7	18	34	M*R5...	1.3

### SPARE PARTS

Designation	Clamping screw	Wrench
A/E07**-SMR4	CSPB-1.8L3.6	IP-6F
A/E07**-SMR5	CSTB-2.5L054DR	T-7F

Torque: Recommended clamping torque: lbs-ft (\*N·m)

For A/E-SMR4, the above LF and LH dimensions are true with MGR4100F000-D05 insert assembled.

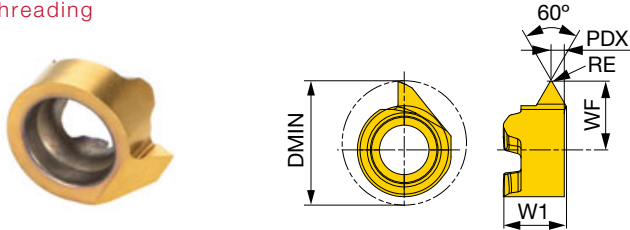
For A/E-SMR5, the above LF and LH dimensions are true with MGR5150F003-D07 insert assembled.

The DMIN and WF sizes vary depending on the insert sizes used.

## INSERT

### MTR

#### Threading

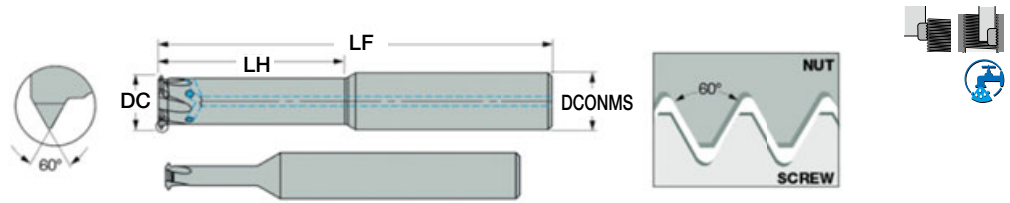


<b>P</b> Steel	★								
<b>M</b> Stainless	★								
<b>K</b> Cast iron	★								
<b>N</b> Non-ferrous									
<b>S</b> Superalloys	★								
<b>H</b> Hard materials									

★ : First choice

Designation	RE (in)	Coated						Pitch min (mm)	Pitch max (mm)	DMIN (in)	PDX (in)	WF (in)	W1 (in)
		SH7025											
MTR460F003-D05	0.0012	●						0.5	0.75	0.197	0.026	0.114	0.083
MTR560F007-D07	0.0027	●						1	1.25	0.276	0.035	0.154	0.142

● : Line up

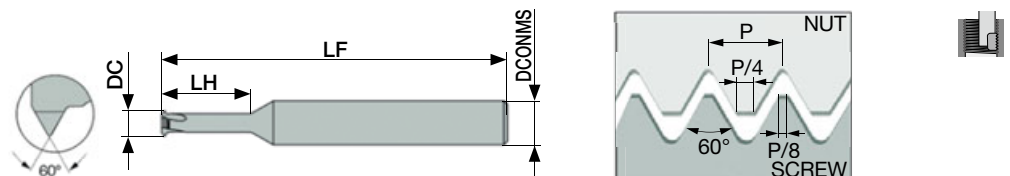


Designation	ISO Metric						Unified						DCONMS (mm)	DC (mm)	NOF	LH (mm)	LF (mm)	Coolant hole	Grade
	Pitch (mm)		Application range	External		Internal		External		Internal									
	min.	max.		min.	max.	TPI	Application range	TPI	min.	max.									
MTECI03019C5A60	0.35	0.6	≥M2.5x0.35 ≥M2.5x0.4 ≥M2.5x0.45 ≥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		

## ISO metric (M)

### MTECI-ISO

Solid carbide internal threading endmill, for ISO metric profile



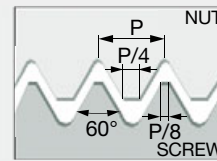
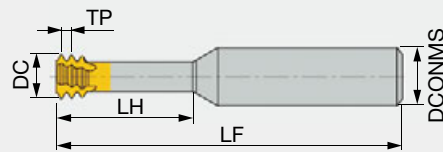
Metric	Pitch	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECI03007C30.25ISO	0.25	≥M1	6	0.72	3	3.6	39	Without	AH710
MTECI03009C40.25ISO	0.25	≥M1.2	6	0.9	3	4.3	39	Without	AH710
MTECI03011C50.3ISO	0.3	≥M1.4	6	1.05	3	5.0	39	Without	AH710
MTECI03012C60.35ISO	0.35	≥M1.6	6	1.2	3	5.7	39	Without	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

Reference pages: Standard cutting conditions → [5-52](#) - [5-53](#)



# MTECS-ISO

Small diameter solid carbide internal threading endmill, short edge type, for ISO metric profile

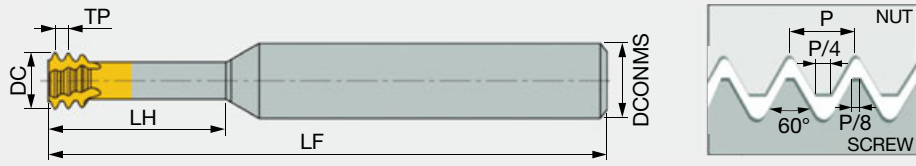


Metric	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS03007C20.25ISO	0.25	≥M1	3	0.72	3	2.5	39	Without	AH725
MTECS03009C30.25ISO	0.25	≥M1.2	3	0.9	3	3	39	Without	AH725
MTECS03011C40.3ISO	0.3	≥M1.4	3	1.05	3	4	39	Without	AH725
MTECS03012C50.35ISO	0.35	≥M1.6	3	1.2	3	4.8	39	Without	AH725
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

Reference pages: Standard cutting conditions → 5-52 - 5-53

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

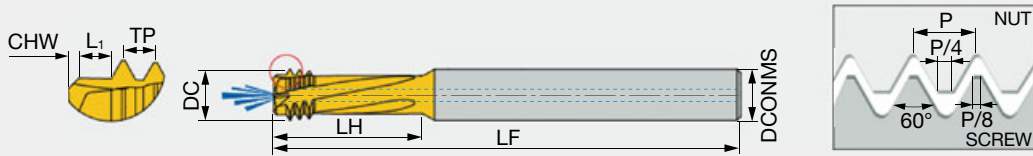
Small diameter solid carbide internal threading endmill, short edge type, left hand cutting, for ISO metric profile



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

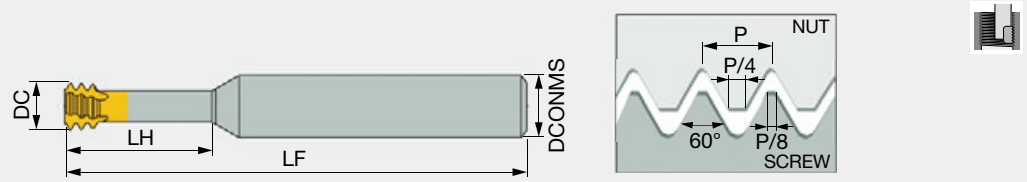
Small diameter solid carbide endmill for internal threading, drilling, and chamfering, short edge type, left hand cutting, for ISO metric profile



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

# 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 → 5-52 - 5-53

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

# SOLIDTHREAD

## MTECSH-UN

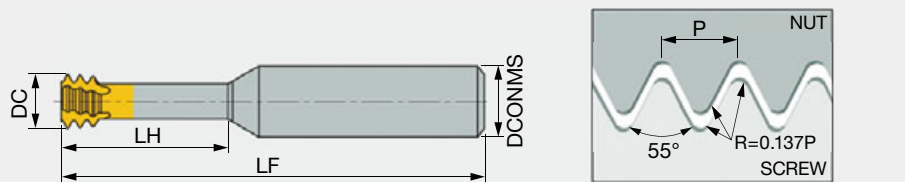
Small diameter solid carbide internal threading endmill, short edge type, left hand cutting, for UN profile, for hardened steel



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

## MTECS-W

Solid carbide internal and external threading endmill, short edge type, for G, BSP profile



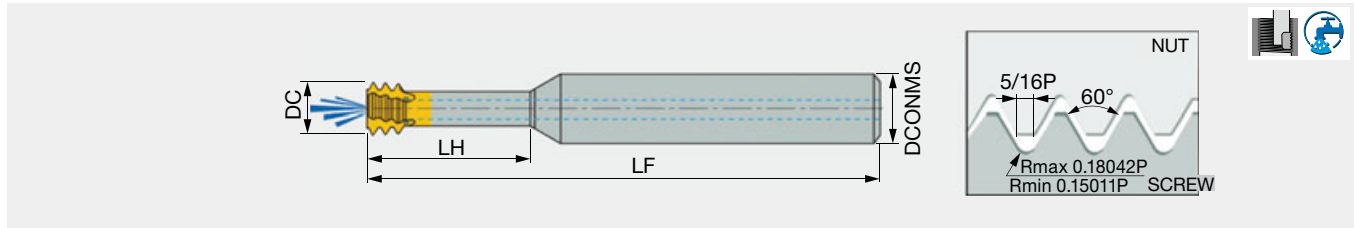
Metric	TPI	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS08078C1928W	28	1/8	8	7.8	3	19.5	64	Without	AH725
MTECS1010D3019W	19	1/4, 3/8	10	10	4	30	73	Without	AH725
MTECS1212D3714W	14	1/2, 5/8, 3/4, 7/8	12	12	4	37	84	Without	AH725

Reference pages: Standard cutting conditions → [5-52](#) - [5-53](#)

# MJ

## MTECS-MJ

Small diameter solid carbide internal threading endmill, short edge type, with coolant hole, for MJ profile

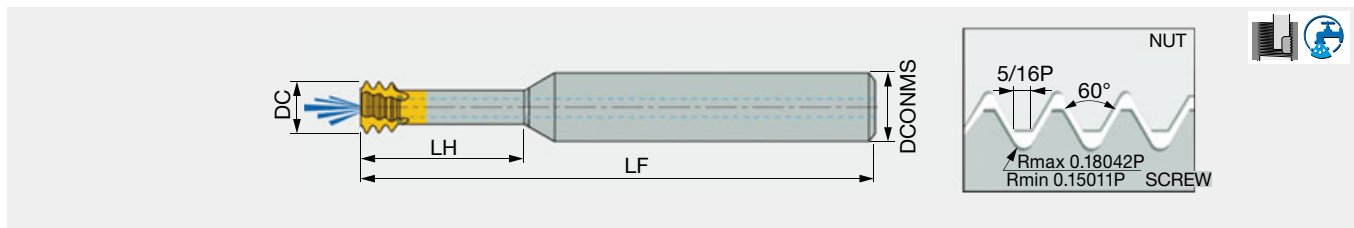


Metric	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS06032C100.7MJ	0.7	≥ 4	6	3.2	3	10	58	Without	AH725
MTECS06039C120.8MJ	0.8	≥ 5	6	3.9	3	12.5	58	Without	AH725
MTECS06048C151.0MJ	1	≥ 6	6	4.8	3	15	58	Without	AH725
MTECS08061C201.25MJ	1.25	≥ 8	8	6.1	3	20	64	With	AH725
MTECS0808C251.5MJ	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

# THREADMILLING

## STANDARD CUTTING CONDITIONS

ISO	Material	Condition	Tensile strength [N/mm <sup>2</sup> ]	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	
	Low alloy steel and cast steel (less than 5% of alloying elements)		Quenched and tempered	1000	300	312 - 525	
			Annealed	600	200	295 - 525	
				930	275	213 - 656	
			Quenched and tempered	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	-
	Non-metallic			Electrolitic copper	-	100	-
			Duroplastics, fiber plastics	-	-	328 - 1312	
S	High temp. alloys	Fe based	Annealed	-	200	-	
			Cured	-	280	-	
		Ni or Co based	Annealed	-	250	66 - 262	
			Cured	-	350	-	
	Titanium Ti alloys		Cast	-	320	-	
				RM 400	-	-	
H	Hardened steel		Alpha+beta alloys cured	RM 1050	-	66 - 262	
			Hardened	-	55 HRC	180 - 213	
	Cast iron		Hardened	-	60 HRC	148 - 180	
			Cast	-	400	295 - 344	
		Hardened	-	55 HRC	180 - 213		

## Tool dia. : mm (in)

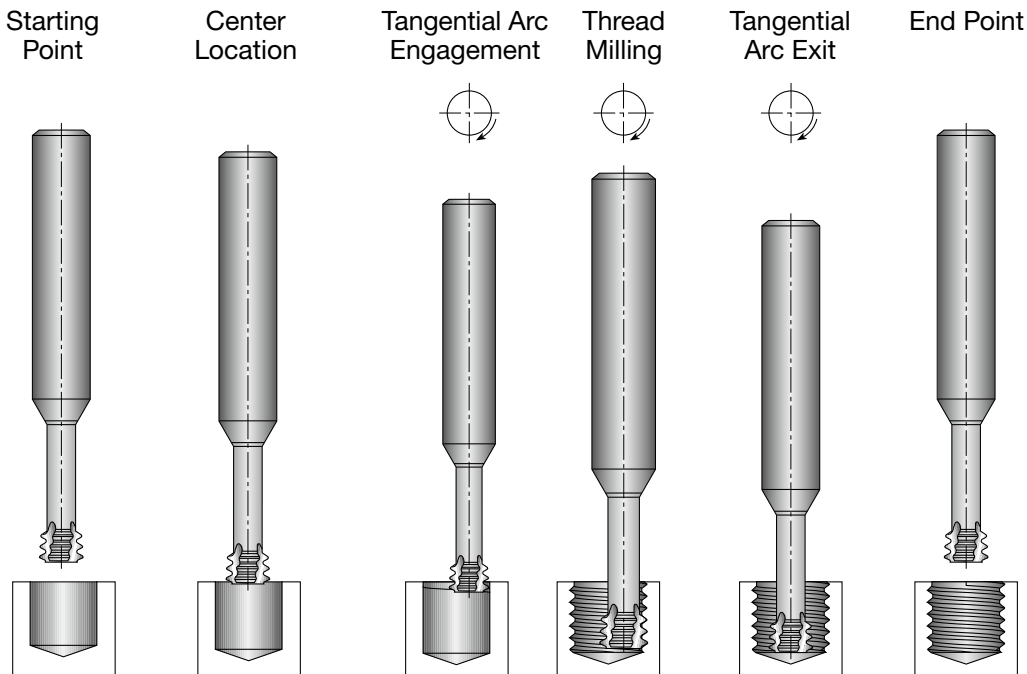
## Feed (ipr)

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
0.0008	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	0.0047	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
-	-	-	-	-	-	-	-	-	-	-	-
0.0008	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.

## MTECS Small Diameter, Short edge type

### Thread Milling - Procedure



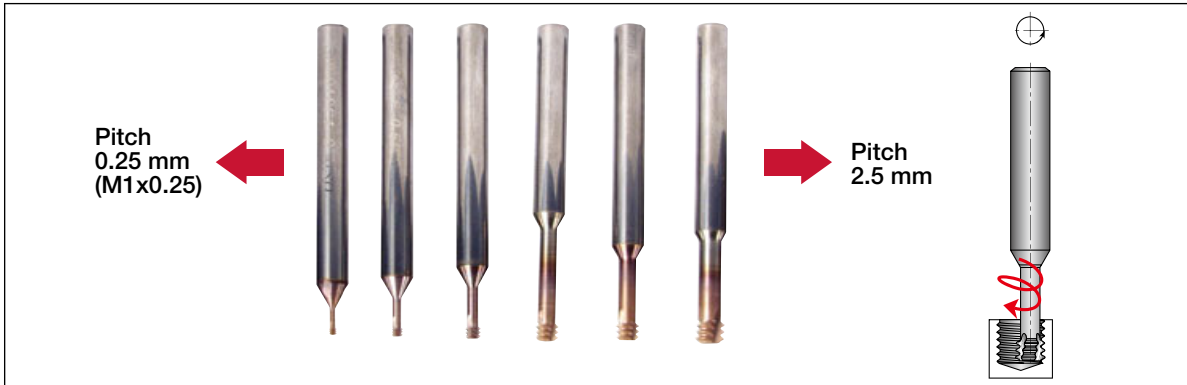
### STANDARD CUTTING CONDITIONS

ISO	Material	Cutting speed (sfm)	Feed (ipr)													
			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)	
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	
	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	
	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	
	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	
	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



## Thread Tool Selector

- Tungaloy's advanced selector empowers you to identify the ideal thread tool by inputting both the thread specifications and details about the work material.
- Navigate through the dropdown options to access comprehensive tool information and recommended machining conditions tailored to the specific thread specifications you've chosen.
- It's important to note that this selector is tailored specifically for right-hand thread machining.



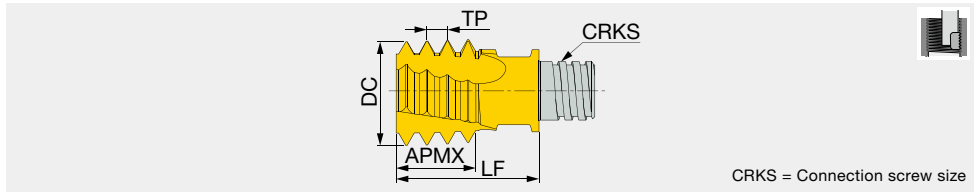
## ISO metric (M)

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

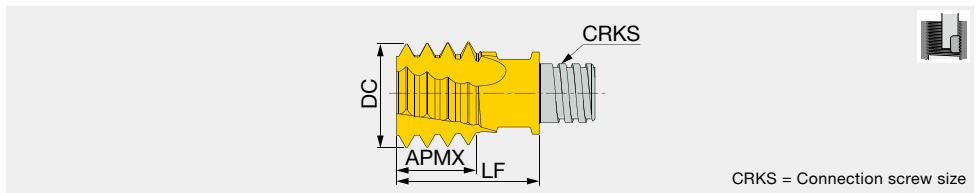
## Unified (UN, UNC, UNF, UNEF, UNS)

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

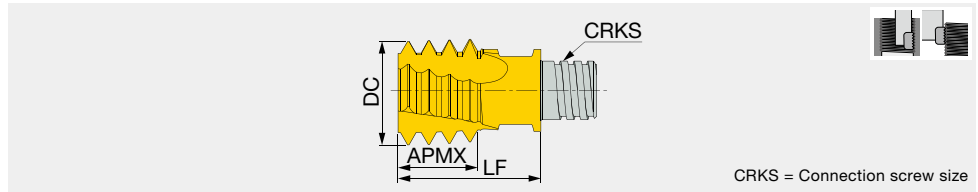
● : Line up

Reference pages: Standard cutting conditions → [8-58](#)

# Whitworth (G, Rp, BSP, PF, PS)

## VMT\*\*\*W

4 flute, full profile, for internal/external thread



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

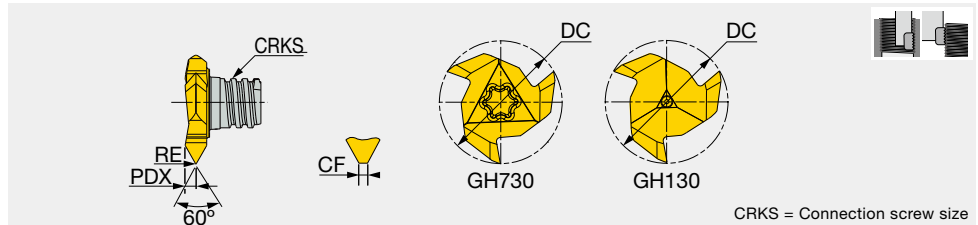
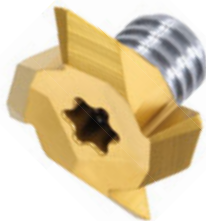
Torque\*: Recommended clamping torque (N-m)  
2 pieces per package

● : Line up

# 60° partial profile

## VTR\*\*\*IS

3, 4 flute, partial profile, for internal/external thread



CRKS = Connection screw size

Metric	GH730	GH130	TP	Smallest Possible thread	DC	NOF	RE	CF	PDX	CRKS	Wrench	Torque*	
			TPN	TPX									
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

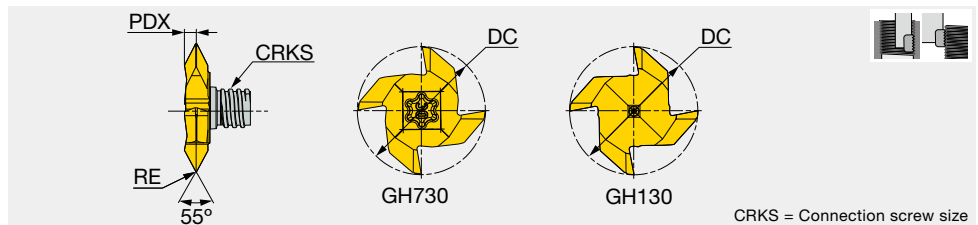
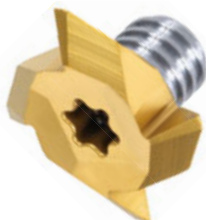
● : Line up

▲ : To be discontinued

# 55° partial profile

## VTR\*\*\*W

4 flute, partial profile, for internal/external thread



CRKS = Connection screw size

Metric	GH730	GH130	TPI	Smallest Possible thread	DC	NOF	RE	PDX	CRKS	Wrench	Torque*	
			TPIN	TPIX								
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 → 8-58

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

# STANDARD CUTTING CONDITIONS

## Threading

VMT, VTR

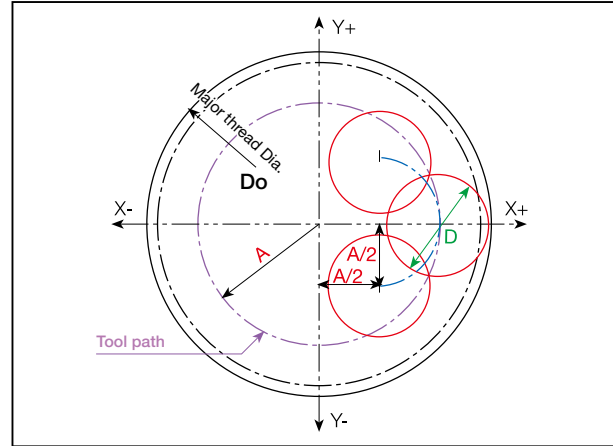
ISO	Material	Condition	Tensile strength [N/mm <sup>2</sup> ]	Hardness HB	Cutting speed (sfm)	Tool dia. (in)				
						Feed (ipt)				
						ø10 (0.394")	ø12 (0.472")	ø15.4 (0.606"), ø15.7 (0.618"), ø16 (0.630")	ø21.7 (0.787")	
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	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
	Low alloy steel and cast steel (less than 5% of alloying elements)	Quenched and tempered	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
		Quenched and tempered	Quenched and tempered	1000	300	230 - 689	0.002	0.002	0.0028	0.0031
			Quenched and tempered	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
		>12% Si	Cured	-	90	-	-	-	-	
	Copper alloys	>1% Pb	High temperature	-	130	328 - 820	0.002	0.002	0.0028	0.0031
		Free cutting	-	110	-	-	-	-	-	
	Non-metallic	Brass	-	90	-	-	-	-	-	
		Electrolitic copper	-	100	-	-	-	-	-	
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	-	-	-	-	
	Titanium Ti alloys	Cast	-	320	-	-	-	-		
		Alpha+beta alloys cured	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
```



### Internal Thread

Example: M20x2.0 IN-RH (Thread depth 20 mm)

Tool : MTEC1010C27 2.0ISO

(Cutting dia. 10 mm)

$A = (D_o - D) / 2 = (20 - 10) / 2 = 5$

$A/2 = 2.5$

(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
```

```
%
```

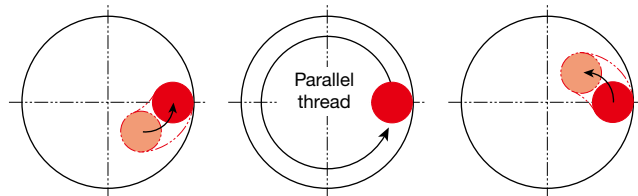
$$A = \frac{D_o - D}{2}$$

A = Radius of tool path  
Do = Major thread diameter  
D = Cutting diameter

F (Center of tool) =  $n \times f \times z$       n : Number of revolutions

F (Cutting edge) =  $\frac{D_o - D}{D_o} \times n \times f \times z$       f : rev / tooth  
z : Number of edge

### Machining procedure

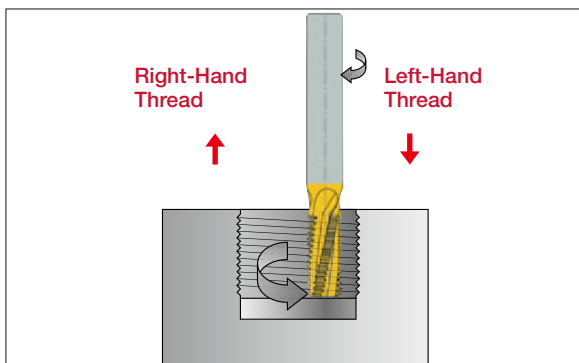


(a) Tool approach

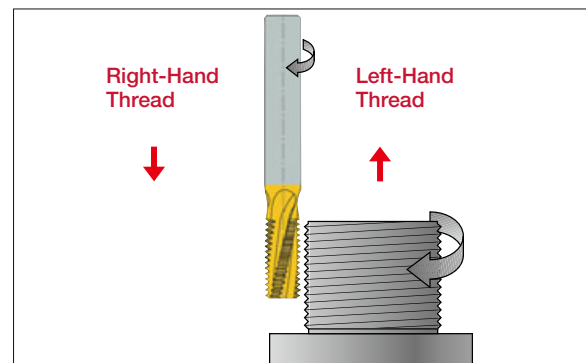
(b) Machining thread

(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.

# Thread Whirling





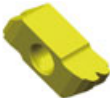
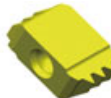
For high-efficiency thread cutting

## High productivity for precision screw manufacturing, like implant screws and bone screws

Ideal for medical screw thread forms that are becoming more complex  
Single pass thread forming reduces cycle time

### Features

NTK's insert design technology creates precise inserts matching even the most complex thread forms  
Sharp cutting edges and PVD coated inserts generate superior surface finishes and achieves long tool life

	Double-lead threads	Triple-lead threads
Work	Bone screw	Worm screw
Work material	Ti-6Al-4V ELI	brass
Workpiece		
Insert shape		
Major Dia.	$\phi 4.0$	$\phi 7.0$
Minor Dia.	$\phi 2.4$	$\phi 4.7$
Lead [Pitch×No. of Lead]	3.42mm	4.9mm

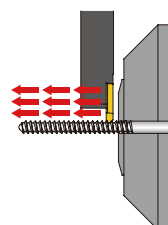
Machining multi-lead thread forms has many process requirements.  
So it is important to contact us to discuss: mechanical specifications, spindle specifications, insert specifications, tooling specifications.

### Thread whirling process vs. single point threading

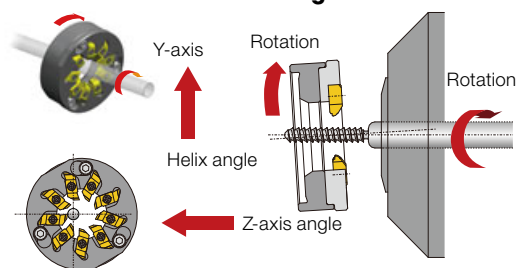
In thread whirling, the whirling head is tilted to a specific helix angle, the cutter is rotated at high speed, the bar stock (c axis) is rotated at a low speed, and the pitch (z axis) is the feed.

The inserts shear the material which enables single pass thread forming.

Single point threading



Thread whirling



## Special Item Capability

- Even though almost all bone screw shapes are special, NTK thread whirling inserts can make the correct shape of thread the first time, without any redesign or remanufacturing
- The combination of a sharp cutting edge and PVD coating achieves an excellent finish and long tool life.

## Instructions

1. Refer to our chart and find your machine and spindle model. Select the suitable whirling cutter.
2. Submit the machine , spindle model information, workpiece drawing, material, and bar stock diameter to NTK. NTK calculates the lead angle and insert geometry from the work drawing and manufactures a dedicated insert.
3. Set the whirling cutter at the specified lead angle and set the cutting conditions.

## Recommended Cutting Conditions

Conditions / No. of teeth		9	6	4	
Main spindle	min-1	10-40	10-25	7-15	Faster RPM reduces machining time
Whirling cutter	min-1	1500-4000			
Feed Rate		Same as thread lead = pitch			
Bar stock	mm	-φ10	-φ10	-φ8	
Work Material		Ti-6Al-4V EL / SUS316 / 17-4PH / Titanium / brass			

Formula for calculating thread whirling process time

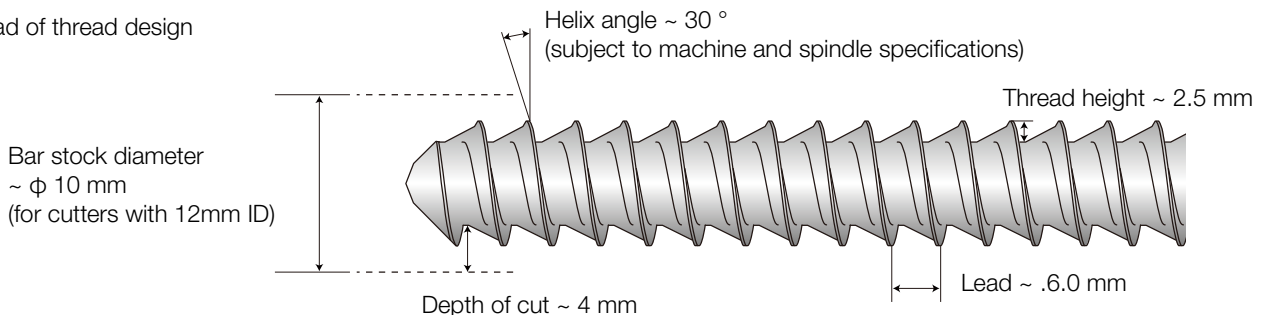
$$T \text{ (Seconds)} = \frac{60 \times \text{Thread length}}{\text{Main spindle rpm} \times \text{Feed rate (Thread lead)}}$$

Ex.) Double lead / 50mm length / 2mm lead (2 × 1mm pitch) / 30 rpm

$$T \text{ (Seconds)} = \frac{60 \times 50\text{mm}}{30\text{rpm} \times 2\text{mm}} = 40 \text{ Seconds}$$

## Applicable Thread Geometry (Approximated)

Lead of thread design



The geometries shown above are approximated and could vary by actual applications

## Double-lead Bone Screw Process Example

1. 1st thread whirl at taper area
2. Rotate the bar 180° and whirl the 2nd thread on same area as 1
3. Thread whirl the straight section
4. To obtain two exits on the screw, back up half a lead (one pitch) and rotate 180 degrees. Additional machining is performed at the exit.

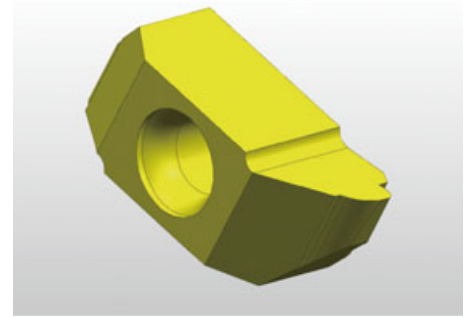


## Basic Insert Grade : ZM3

ZM3 is the common grade for NTK thread whirling

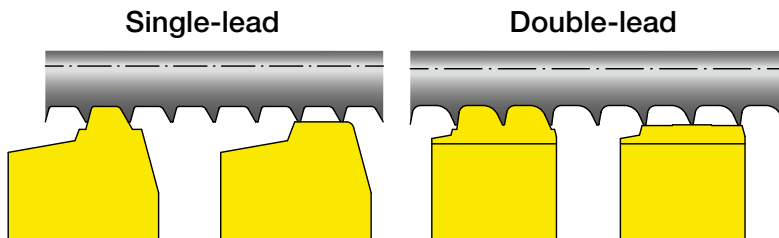
ZM3 offers excellent surface finish

NTK can make inserts with other coatings to meet customers demands



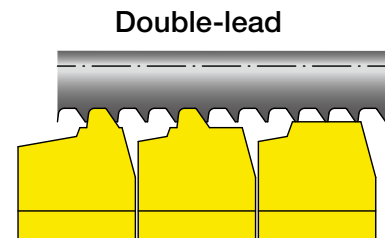
## NTK Thread Machining Examples

For absolute flat on OD



Two insert combination brings absolute flat on OD to meet drawing specifications.

For tiny thread



NTK's Thread Whirling system can machine small diameter multi-lead screws to spec, with lower tool pressure, by using several types of specially designed and accurately ground inserts on the cutter.

## NTK's Unique Attachment System

NTK's whirling insert holder can be attached and detached without removing mounting screws



① Loosen the Mounting Screws

② Rotate the Insert Holder 10 degrees

③ Detach the Insert Holder without removing the Mounting Screws



## Application Examples

Double-lead Bone Screw			
Work Material : Ti - 6Al - 4v ELI			
Bar Stock Dia.	Φ9.5	Number of start	2
Major Dia.	Φ4.0	Helix Angle	28.5°
Minor Dia.	Φ2.5	Hand of thread	Right
Cutting condition			
Main Spindle Speed (rpm)	15	Speed of whirling cutter (rpm)	3,500
Lead = Feed (mm/rev)	5.5	Result	OK
<b>NTK Thread Whirling</b>	<b>Dramatically improved productivity</b>		
Competitor's Thread Whirling	Cannot complete with single pass. Requires feeding stock multiple times and two passes for threading each time.		
NTK thread whirling succeeded in double lead screw machining when one of the major thread whirling suppliers has failed many times.			

Single - lead Bone Screw			
Work Material: 316SS			
Bar Stock Dia.	Φ8.0	Number of start	1
Major Dia.	Φ3.45	Helix Angle	7.5°
Minor Dia.	Φ2.67	Hand of thread	Right
Cutting condition			
Main Spindle Speed (rpm)	23	Speed of whirling cutter (rpm)	2,000
Lead = Feed (mm/rev)	1.24	Result	OK
<b>NTK Thread Whirling</b>	<b>2,600 pcs</b>		
Competitor's Thread Whirling	1,000 pcs		
Some thread whirling manufacturers offer 6-teeth or 12-teeth systems, too many teeth cause chip packing issues and more tool pressure. Fewer teeth means greater cycle time. NTK concluded that 9-teeth is the best configuration. Our customers can run 1.5 times faster and get longer tool life.			

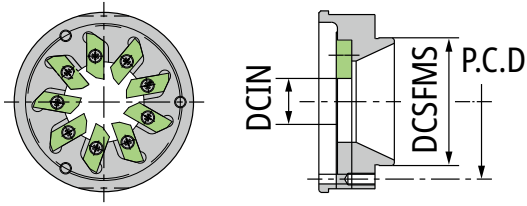
Triple - lead Worm Gear			
Work Material: Brass			
Bar Stock Dia.	Φ8.0	Number of start	3
Major Dia.	Φ7.0	Helix Angle	14.6°
Minor Dia.	Φ4.7	Hand of thread	Left
Cutting condition			
Main Spindle Speed (rpm)	20	Speed of whirling cutter (rpm)	3,500
Lead = Feed (mm/rev)	4.8	Result	OK
Multi-lead threads, common in the Worm Gear industry are made by a forming or cutting process. The large helix angle is difficult to machine with single-point threading. NTK now makes thread whiling inserts for multi-lead threads. Cycle time is reduced with a one pass process and thread form dimensions are stable with the low tool pressure.			

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

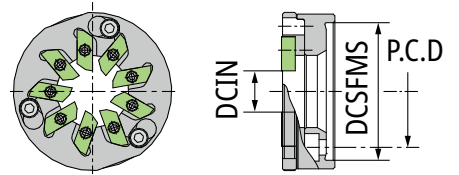
1  
2  
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10

## Thread Whirling System

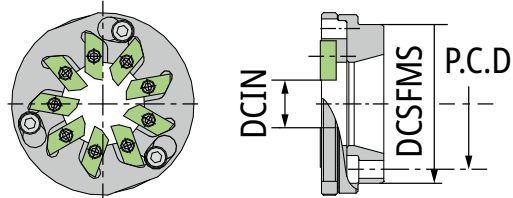
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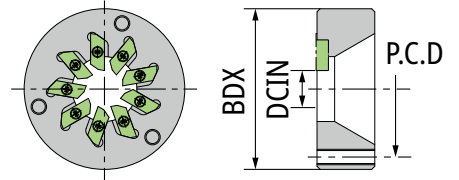
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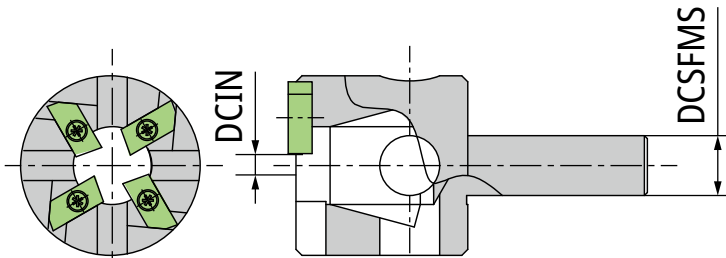
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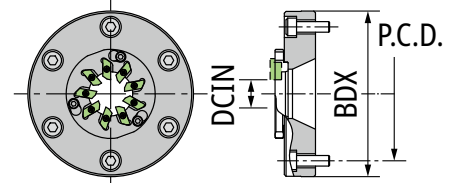
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No.5

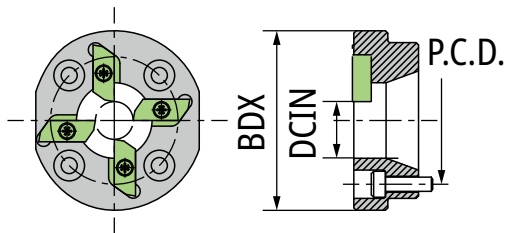


No.6

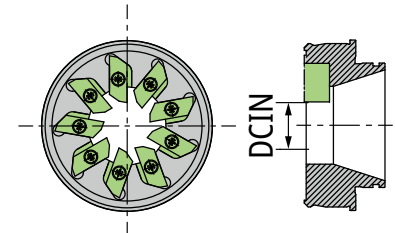


Guideline: Raw material diameter up to 6, machinable up to length 18mm  
(Contact CD for further information)

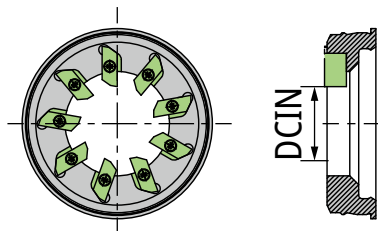
No.7



No.8



No.9



## Spare Insert Holder (Cartridge)

Item number	No. of tooth	φDm	Compatible cutters
TWC6HP2	6	12	No.2, No.3※
TWC9HP2	9	12	No.2, No.3※
TWC9HP2-D16	9	12	No.6※

※Cannot be used for TWC9TS20550P2, TWC9TO12050P2-D18 and TWC9HA22594P2

Note(s): Note: Insert holder comes with insert screws and wrench  
Insert holder mounting screw is not included

## Spare Parts

Description		Item number
Insert Screw	for 4mm thick inserts	FSI17-2.2×6.0
	for 6.5mm thick inserts	FSI24-2.2×7.9
Wrench		T-07
Insert Holder Mounting Bolt		CS0309-TW

# Thread Whirling System

Machine make	Model	Location	Spindle make	Spindle model	Helix angle	No.	NTK Whirling cutter	No. of tooth	φDm (mm)	φDs	P.C.D.	Mount adapter bolt							
CITIZEN	M432-VII	Gang	CITIZEN	BTW-4000	0°- 15°	1	TWC9C0746HP1	9	φ12	φ46	φ35	M3							
	L20/L20E/L20X	Gang		BTW-3000	0°- 15°														
	L32/L32X			BTW-3100	0°- 15°														
	D25	Gang		BTW-3100	0°- 15°														
	L32X			BTW-6000	±25°														
	L20X			BTW-5000	±25°														
	M16				0°- 15°														
	A20																		
	A32			BTW-2000	±25°														
	L20/L20X																		
	L32/L32X																		
	M20																		
	M32																		
	C32			BTW-1000	±25°														
	L20																		
	M20																		
	M32			±25°															
	C12/16	Gang		CITIZEN	LTRO170		±15°	2	TWC9C1037P2	9	φ12	φ37	φ30.5	CS0310 (M3)					
	M2/16	Turret			LTRO128/ LTRO168														
	M2/16III		MSW105																
M20/32III	KSW110																		
L20	Gang	LTRO183	±15°		2	TWC9J1040P2	9	φ12	φ40	φ32.5	H-M4 × 12								
M20/32		LTRO183																	
M20/32		Turret										LTRO169							
K16	Attachment	PCM	GSW-101		±15°	1	TWC6P1620HP1-D9	6	φ9	φ32	φ26	M4 (Provided with spindle)							
L20	Gang		LSW-101-L20	±10°	2	TWC9P1340P2	9	φ12	φ40	φ32	M4 (Provided with spindle)								
M20/16	Turret		NSW-101																
M20/M32	Turret		KSW-101																
STAR	SW-12	Attachment	STAR	10159	±20°	7	TWC4S1433HP1	4	φ8	φ38	φ27	CS0310 (M3)							
	ECAS-12/20			54178	±10°														
	SB-20R			0M171	-20°- 0°														
	SR-20J/20RIII 20RIV/32JII			68172	-20°- 0°														
	ECAS-20T ECAS-32T	Turret		59172	±20°								3	TWC9S1640P2	9	φ12	φ40	φ33	CS04148S (M4)
	SR-38	Attachment		58171															
	ST-38	Turret		10172	±10°														
	SV-12			43156	±20°														
	SV-20/SV-20R			45172	±10°														
	SV-32			42173	±10°														
	SV-38R			43172	±10°														
				43156	±20°														

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



## Thread Whirling System

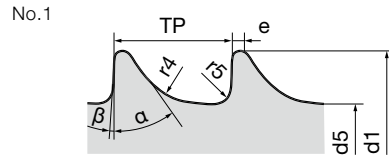
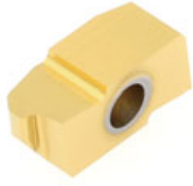
Machine make	Model	Location	Spindle make	Spindle model	Helix angle	No.	NTK Whirling cutter	No. of tooth	φDm (mm)	φDs	P.C.D.	Mount adapter bolt		
TSUGAMI	BH20/BH38	Turret	TSUGAMI	3263-Y481	±10°	3	TWC9TS2252P2	9	φ12	φ52	φ42	CS0515 (M5)		
	B038T			3263-Y2481	±10°	3	TWC9TS2252P2	9	φ12	φ52	φ42	CS0515 (M5)		
	BS20			3214-Y1371	±10°	3	TWC9TS20550P2	9	φ16	φ50	φ40	CS0515 (M5)		
	SS20/SS26/SS32 B0265/B0266-II B0325/B0326-II B0265/B0266(V)-III B0325/B0326(V)-III BW269Z/BW329Z	Attachment		3268-Y451	0°-10°	4	TWC9TS2244HP1	9	φ12	φ52	φ44	CS0520 (M5) CS0520 (M5)		
	S205/S206			3281-Y451	0°-20°	4	TWC9TS1944HP1	9	φ12	φ52	φ44	CS0515 (M5)		
	S205/S206-II			3281-Y2451	0°-25°	4	TWC9TS1644HP1	9	φ12	φ52	φ44	CS0515 (M5)		
	B0123/124/126-II B0203/204 /205/205-III/206-II			3220-Y6541	0°-30°	4	TWC9TS1044HP1	9	φ12	φ52	φ44	CS0515 (M5)		
	SS20/SS26/SS32			3268-Y271	0°-15°	4	TWC9TS1952P2BK	9	φ12	φ52	φ38	CS0515 (M5)		
	SS20/SS26/SS32			3268-Y271	0°-20°	4	TWC9TS1652P2BK	9	φ12	φ52	φ38	CS0515 (M5)		
	SS207/SS267/ SS327	B-axis		Using B-axis	0°-15°	5	TWC4TS3010HP1	4	φ7	φ10	For single-corner inserts only			
	SS267/SS327-III			3293-Y3031	0°-15°	4	TWC9TS1944HP1	9	φ12	φ52	φ44	CS0520 (M5)		
	TORNOS	DECO 10/10a		Attachment	TORNOS	224-1900	±15°	4	TWC6TO11542HP1	6	φ12	φ42	φ32	CS0410 (M4)
		Evo DECO 10/10				242-1900								
DECO 13a/13e		226-1900												
Evo DECO 16/10		243-1900	±15°			3	TWC9TO10540P2	9	φ12	φ40	φ31	CS0410 (M4)		
Swiss ST26		246-1900												
DECO 20a		223-1900												
DECO 26a		225-1900	±25°			3	TWC9TO12050P2-D18	9	φ18	φ50	φ40	CS0410 (M4)		
Sigma 20		234-2750												
Sigma 32		236-2750												
HASEGA-WA	JS-1W	-	HASEGA-WA	-	0° -20°	6	TWC9HA22594P2	9	φ16	φ94	φ76	CS0620 (M6)		
Various Machines	-	-	WTO	42BJ	-22°	8	TWC9WT42BJ20D12RH	9	φ12	-	-	-		
	-	-		54BJ	30°	9	TWC9WT54BJ30D12RH	9	φ12	-	-	-		
	-	-		54BJ	30°	9	TWC9WT54BJ25D22RH	9	φ12	-	-	-		

※ Screws for insert-thickness 4.0/6.0mm are supplied with the cutter body.  
Use screws for the thickness of the insert you are using.

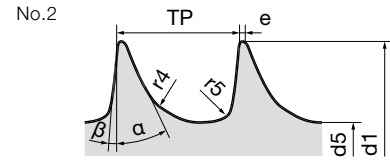
# INSERT

## ISO5835 with chipbreaker

Standard Thread Whirling Inserts (2corners) for Medical ISO Style Threads  
TWC.. series/Inserts Carbide



ISO5835 HA



ISO5835 HB

<b>P</b>	Steel	★	
<b>M</b>	Stainless	★	
<b>N</b>	Non-ferrous	★	
<b>S</b>	Superalloys	★	
<b>H</b>	Hard materials		

★ : First choice  
☆ : Second choice

Designation	HAND	Coated	ISO	Pitch	d1	d5	e	r4	r5	α	β	Figure
		ZM3										
TW5835-HA1.5-D12	R	●	HA1.5	0.020	0.059	0.043	0.004	0.012	0.004	1.378	3°	1
TW5835-HA2.0-D12	R	●	HA2.0	0.024	0.079	0.051	0.004	0.016	0.004	1.378	3°	1
TW5835-HA2.7-D12	R	●	HA2.7	0.039	0.106	0.075	0.004	0.024	0.008	1.378	3°	1
TW5835-HA3.5-D12	R	●	HA3.5	0.049	0.138	0.094	0.004	0.031	0.008	1.378	3°	1
TW5835-HA4.0-D12	R	●	HA4.0	0.059	0.157	0.114	0.004	0.031	0.008	1.378	3°	1
TW5835-HA4.5-D12	R	●	HA4.5	0.069	0.177	0.118	0.004	0.039	0.012	1.378	3°	1
TW5835-HA5.0-D12	R	●	HA5.0	0.069	0.197	0.138	0.004	0.039	0.012	1.378	3°	1
TW5835-HB4.0-D12	R	●	HB4.0	0.069	0.157	0.075	0.004	0.031	0.012	0.984	5°	2
TW5835-HB6.5-D12	R	●	HB6.5	0.108	0.256	0.118	0.008	0.047	0.031	0.984	5°	2

Must use Thread whirling cutters with 0.472" øDm dimension

● : Line up

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# 6. Parting, Grooving

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# Main products

	<p><b>DUOJUST</b></p> <p> Innovative clamping system for high rigidity in parting            CW = 1 - 2 mm (0.039" - 0.079")</p>	<p>6-109</p>
	<p><b>TUNG CUT / TUNG SCUT</b></p> <p> Multi-functional tool series for various grooving operations            CW = 1.4 - 6 mm (0.055" - 0.236")</p>	<p>6-79, 6-114</p>
	<p><b>TETRAMCUT</b></p> <p> Unique insert pocket geometry for grooving with high quality and precision            CW = 0.33 - 3 mm (0.013" - 0.118")</p>	<p>6-46</p>
	<p><b>TETRAFORCE</b></p> <p> 4-cornered insert with good clamping rigidity for highly precise grooving and parting            CW = 0.5 - 3.18 mm (0.020" - 0.125")</p>	<p>6-58</p>
	<p><b>SNG</b></p> <p> Internal grooving            CW = 1 - 3.5 mm (0.039" - 0.138")</p>	<p>6-72</p>
	<p><b>CSV Series</b></p> <p>Best for machining with ultra small diameter of <math>\phi 5</math> or less            CW = 0.2 - 1.5 mm (0.008" - 0.059")</p>	<p>6-28</p>
	<p><b>GTMH32/43 Series</b></p> <p> Wide range lineup not only width but also chipbreaker and grade            CW = 0.3 - 5.5 mm (0.012" - 0.217")</p>	<p>6-33</p>
	<p><b>SATURN Duo</b></p> <p>Unique tool for face grooving with swiss machine            CW = 1.0 - 2.0 mm (0.039" - 0.079")</p>	<p>6-83</p>
	<p><b>CTP/CTPA/CTPW Series</b></p> <p> High precision sharp edge and wide range for parting            CW = 0.5 - 3.0 mm (0.020" - 0.118")</p>	<p>6-91</p>
	<p><b>Cut Duo</b></p> <p> Achieve stable chip evacuation with ground finished chipbreaker            CW = 2.0 - 3.0 mm (0.079" - 0.118")</p>	<p>6-125 -</p>





Max. parting diameter (in)						
0	0.394	0.787	1.181	1.575	1.969	Page
		$\varnothing$ 0.472				<b>6-92</b>
		$\varnothing$ 0.472				<b>6-92</b>
		$\varnothing$ 0.472				<b>6-93</b>
		$\varnothing$ 0.472				<b>6-91</b>
		$\varnothing$ 0.472				<b>6-94</b>
		$\varnothing$ 0.630				<b>6-91</b>
		$\varnothing$ 0.630				<b>6-102</b>
		$\varnothing$ 0.630				<b>6-102</b> <b>6-103</b>
		$\varnothing$ 0.787				<b>6-107</b>

Max. parting diameter (in)						
0	0.394	0.787	1.181	1.575	1.969	Page
$\varnothing$ 0.236			$\varnothing$ 0.787			<b>6-109</b>
$\varnothing$ 0.236			$\varnothing$ 0.787			<b>6-109</b>

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9



Technical Reference

10



# Quick Guide

## Parting Inch


### TungCut

Application	Designation	Insert	Square shank (height x width)				Groove width (in)	Holder		
			0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000		Modular head	Through-coolant	Direct connection
	<b>JCTER/L</b>	DG.../SG...	●	●			0.079 - 0.118			
	<b>JCTER/L-CHP</b>	DG.../SG...	●	●	●		0.079		●	●


### CTDP

Application	Designation	Insert	Square shank (height x width)					Groove width (in)	Holder	
			0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000		Through-coolant	Direct connection
	<b>CTDPR/L-OH2/OH3</b>	CTDP		●	●	●		0.079 - 0.098	●	●
	<b>CTDPR/L</b>	CTDP	●	●	●	●		0.079 - 0.098		

### CTWP

Application	Designation	Insert	Square shank (height x width)		Groove width (in)	Max. parting diameter (in)						Page	
			0.750 x 0.750	1.000 x 1.000		0	0.984	1.969	2.953	3.937	4.921		
	<b>CTWPR/L</b>	GWPFM	●	●	0.118							ø1.654	<b>6-128</b>

### AddForceCut

Application	Designation	Insert	Square shank (height x width)				Groove width (in)	Max. parting diameter (in)						Page	
			0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000		0	0.984	1.969	2.953	3.937	4.921		
	<b>QSER/L</b>	QG...			●	●	0.079 - 0.197						ø2.048	ø2.598	<b>6-129</b>

Max. parting diameter (in)						Page
0	0.984	1.969	2.953	3.937	4.921	
ø0.945	ø1.260					<b>6-115</b>
ø0.980	ø1.260					<b>6-116</b>

Max. parting diameter (in)						Page
0	0.984	1.969	2.953	3.937	4.921	
ø1.000	ø1.330					<b>6-125</b>
ø0.787	ø1.260					<b>6-126</b>

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9


Technical Reference

10


# Quick Guide

## External Grooving Inch





### CSV

Application	Designation	Insert	Square shank (height x width)				Groove width (in)			Max. groove depth (in)	Page
			0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	0	0.039	0.079		
	<b>CSVR/L</b>	CSVG		●	●		0.010	0.059	0.006 - 0.102	<b>6-28</b>	

### MiniVLockGroove

Application	Designation	Insert	Square shank (height x width)				Groove width (in)			Max. groove depth (in)	CUTDIA (in)	Page
			0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	0	0.039	0.079			
	<b>SVER/L</b> Modular head	VGP...	●	●			0.020	0.039	0.079 - 0.157	0.157 - 0.315	<b>6-30</b>	

### GTM32

Application	Designation	Insert	Square shank (height x width)					Holder			Groove width (in)					
			0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	Y-axis feed	Through-coolant	Direct connection	0	0.039	0.079	0.118	0.157	0.197
	<b>GTTR-OH2</b>	GTMH32		●	●			●	●		0.012				0.118	
	<b>GTTR/L</b>	GTMH32	●	●	●	●					0.012				0.118	
	<b>Y-GTTR-OH/OH2</b>	GTMH32		●				●	●		0.012				0.118	
	<b>Y-GTTR</b>	GTMH32	●	●	●			●			0.012				0.118	

	Max. groove depth (in)	Page
	0.010 - 0.106	<b>6-33</b>
	0.010 - 0.106	<b>6-34</b>
	0.010 - 0.106	<b>6-35</b>
	0.010 - 0.106	<b>6-36</b>

Grade	<b>1</b>
Insert	<b>2</b>
Ext. Toolholder	<b>3</b>
Int. Toolholder	<b>4</b>
Threading	<b>5</b>
<b>Grooving</b>	<b>6</b>
Shaper	<b>7</b>
Endmill	<b>8</b>
Drilling Tool	<b>9</b>
Technical Reference	<b>10</b>

# Quick Guide

## External Grooving Inch



### TetraMini-Cut

Application	Designation	Insert	Square shank (height x width)					Cylindrical shank (shank dia.)		
			0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	ø0.625	ø0.750	ø1.000
	<b>STCR/L-18</b> Modular head	TC*18R/L...	●	●	●	●	●			
	<b>JS-STCL18</b> Modular head	TC*18R...						●	●	●



### TetraForce-Cut

Application	Designation	Insert	Square shank (height x width)						Holder	
			0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	1.250 x 1.250	Through-coolant	Direct connection
	<b>STCR/L-27</b>	TC*27...	●	●	●	●	●			
	<b>STCR/L1212-27-CHP</b>	TC*27...		●					●	●
	<b>STCR/L2020-27-CHP</b>	TC*27...				●			●	
	<b>STCR/L-38</b>	TCL38...				●	●	●		





### SCRUM DUO





Application	Designation	Insert	Square shank (height x width)				Groove width (in)					Max. groove depth (in)	Page
			0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	0	0.079	0.157	0.236	0.315		
	<b>GTWPR</b>	GWPG		●	●			0.118			0.236	0.276 - 0.354	<b>6-68</b>



### TungHeavyGroove

Application	Designation	Insert	Square shank (height x width)					Groove width (in)			Max. groove depth (in)	Page	
			0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	0	0.394	0.787			
	<b>FPGN</b>	PSGB...		●	●	●			0.394		0.787	0.984 - 1.456	<b>6-70</b>

	Groove width (in)					Max. groove depth (in)	Page
	0	0.394	0.787	1.181	1.575		
0.013  0.125						0.031 - 0.138	<b>6-47</b>
0.013  0.125						0.031 - 0.138	<b>6-48</b>

	Groove width (in)					Max. groove depth (in)	CUTDIA (in)	Page
	0	0.394	0.787	1.181	1.575			
0.020  0.125						0.039 - 0.252	0.079 - 0.504	<b>6-58</b>
0.020  0.125						0.039 - 0.252	0.079 - 0.504	<b>6-58</b>
0.020  0.125						0.039 - 0.252	0.079 - 0.504	<b>6-59</b>
0.059  0.157						0.354 - 0.394	0.709 - 0.787	<b>6-64</b>

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9

Technical Reference

10

# Quick Guide

## Internal Grooving Inch



### AddInternalCut

Application	Designation	Insert	Cylindrical shank (shank dia.)					Groove width (in)	Max. groove depth (in)	Through coolant	Material
			ø0.375	ø0.500	ø0.625	ø0.750	ø1.000				
	<b>A/E-STCIR/L</b>	TCIG10/12...		●	●			0.020 - 0.118	0.039 - 0.118	●	Steel Carbide



### TungShortCut

Application	Designation	Insert	Cylindrical shank (shank dia.)					Groove width (in)	Max. groove depth (in)	Through coolant	Material
			ø0.375	ø0.500	ø0.625	ø0.750	ø1.000				
	<b>CTIR**S</b>	DGS*S/ DTR*S	●	●	●			0.079 - 0.118	0.118 - 0.236	●	Steel

## Face Grooving Inch



### TetraMini-Cut

Application	Designation	Insert	Square shank (height x width)					Cylindrical shank (shank dia.)					Groove width (in)	Max. groove depth (in)			
			0.375 x 0.375	0.500 x 0.500	0.625 x 0.625	0.750 x 0.750	1.000 x 1.000	ø0.375	ø0.500	ø0.625	ø0.750	ø1.000					
	<b>JS-STCFL18</b>	TCF18L...												●	●	0.020 - 0.098	0.039 - 0.118
	<b>STCFVR-18</b>	TCF18L...	●	●	●											0.020 - 0.098	0.039 - 0.118



### FaceMiniCut

Application	Designation	Insert	Cylindrical shank (shank dia.)				Groove width (in)	Max. groove depth (in)	Through coolant	Material
			ø0.500	ø0.625	ø0.750	ø1.000				
	<b>A-MFR/O</b>	MFGR10	●	●			0.079 - 0.098	0.354	●	Steel



Min. bore diameter DMIN (in)						Page
0	0.197	0.394	0.591	0.787	0.984	
	ø0.438		ø0.688			<b>6-77</b>
	ø0.625		ø0.813			

Min. bore diameter DMIN (in)						Page
0	0.197	0.394	0.591	0.787	0.984	
	ø0.500		ø0.750			<b>6-79</b>

Min. face groove outside diameter (in)						Page
0	0.197	0.394	0.591	0.787	0.984	
	ø0.236					<b>6-81</b>
	ø0.236					<b>6-81</b>

Min. face groove outside diameter (in)						Page
0	0.197	0.394	0.591	0.787	0.984	
	ø0.394					<b>6-86</b>

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9


Technical Reference

10










# Quick Guide

## Parting Metric



### DuoForceCut

Application	Designation	Insert	Square shank (height x width)				Groove width (mm)	Max. parting diameter (mm)						Page		
			6 x 6	7 x 7	8 x 8	10 x 10		0	10	20	30	40	50			
	<b>JSXXR/L*05</b>	JVPN...	●	●	●	●	0.5 - 1	ø4	●	ø12						<b>6-87</b>

### CTP

Application	Designation	Insert	Square shank (height x width)										Groove width (mm)			
			8 x 8	8 x 10	10 x 10	10 x 12	10 x 16	12 x 12	12 x 16	13 x 13	16 x 16	20 x 20				
	<b>CTPR/L-OH2</b>	CTP									●					0.5 - 2.0
	<b>CTPR/L-OH</b>	CTP				●				●			●			0.5 - 2.0
	<b>CTPR/L</b>	CTP		●	●					●			●			0.5 - 2.0
	<b>CTPR/L-SUB-OH3</b>	CTP								●						0.5 - 2.0
	<b>CTPR/L-SUB</b>	CTP	●		●					●						0.5 - 2.0
	<b>CTPAR/L-OH2</b>	CTPA								●			●			0.7 - 3.0
	<b>CTPAR/L</b>	CTPA			●					●			●	●		0.7 - 3.0
	<b>CTPAR/L-SUB</b>	CTPA			●					●			●			0.7 - 3.0
	<b>CTPWR/L</b>	CTPW				●	●	●	●				●	●		2.5

### DuoJustCut

Application	Designation	Insert	Square shank (height x width)					Groove width (mm)	Holder
			10 x 10	10 x 12	12 x 12	16 x 16	20 x 20		Through-coolant
	<b>JSXXR/L*09-CHP</b>	JXP...		●	●	●		0.6 - 2	●
	<b>JSXXR/L*09-S-CHP</b>	JXP...	●		●	●		0.6 - 2	●



Application	Designation	Insert	Square shank (height x width)					Groove width (mm)	Max. parting diameter (mm)					Page	
			7 x 7	8 x 8	9.5 x 9.5	10 x 10	12 x 12		0	10	20	30	40		50
	<b>CSVR/L</b>	CSVC	●	●	●	●	●	0.6 - 1.5	ø3	ø5					<b>6-89</b>

Holder		Max. parting diameter (mm)							Page
Through-coolant	Direct connection	0	10	20	30	40	50		
●	●	ø5	ø12					<b>6-92</b>	
●		ø5	ø12					<b>6-92</b>	
		ø5	ø12					<b>6-93</b>	
●	●	ø5	ø12					<b>6-91</b>	
		ø5	ø12					<b>6-94</b>	
●	●	ø6.5	ø16					<b>6-101</b>	
		ø6.5	ø16					<b>6-102</b>	
		ø6.5	ø16					<b>6-102</b> <b>6-103</b>	
		ø20						<b>6-107</b>	

Max. parting diameter (mm)							Page
0	10	20	30	40	50		
ø6		ø20				<b>6-109</b>	
ø6		ø20				<b>6-109</b>	

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper


Endmill




Drilling Tool


Technical Reference



# Quick Guide


## Parting Metric


 **TungCut**


Application	Designation	Insert	Square shank (height x width)						Groove width (mm)	Holder			
			10 x 10	10 x 12	12 x 12	12 x 16	16 x 16	16 x 20		20 x 12	20 x 20	Modular head	Through-coolant
	<b>QC12-JTTER/L-CHP</b>	DG.../SG...		●	●	●	●	●		1.2 - 2.39	●	●	●
	<b>J*TER/L</b>	DG.../SG...	●		●		●		●	1.2 - 3.18			
	<b>JCTER/L-CHP</b>	DG.../SG...			●		●			2 - 2.39		●	●







 **CTDP**




Application	Designation	Insert	Square shank (height x width)					Groove width (mm)	Holder	
			10 x 10	12 x 12	16 x 16	20 x 12	20 x 20		Through-coolant	Direct connection
	<b>CTDPR/L-OH2/OH3</b>	CTDP		●	●		●	2.0 - 2.5	●	●
	<b>CTDPR/L</b>	CTDP	●	●	●	●	●	2.0 - 2.5		



 **CTWP**

Application	Designation	Insert	Square shank (height x width)		Groove width (mm)	Holder		Max. parting diameter (mm)						Page
			10 x 10	12 x 12		Through-coolant	Direct connection	0	25	50	75	100	125	
	<b>CTWPR/L</b>	GWPFM	●	●	3			ø42						<b>6-128</b>

 **AddForceCut**

Application	Designation	Insert	Square shank (height x width)	Groove width (mm)	Max. parting diameter (mm)						Page
					0	25	50	75	100	125	
	<b>QSER/L</b>	QG...	20 x 20	2 - 4	ø52  ø66						<b>6-129</b>
	<b>QSG</b>	QG...	20 x 20	2 - 4	ø52  ø82						<b>6-129</b>
	<b>QSP</b>	QG...	20 x 20	2 - 5	ø50  ø120						<b>6-129</b>

Max. parting diameter (mm)						Page
0	25	50	75	100	125	
ø12		ø32				<b>6-114</b>
ø12		ø42				<b>6-114</b> <b>6-115</b>
	ø25		ø32			<b>6-116</b>

Max. parting diameter (mm)						Page
0	25	50	75	100	125	
	ø25.4		ø34			<b>6-125</b>
	ø20		ø34			<b>6-126</b>

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9


Technical Reference

10



# Quick Guide

## External Grooving Metric







### CSV

Application	Designation	Insert	Square shank (height x width)					Holder			Groove width (mm)		Max. groove depth (mm)	Page	
			7 x 7	8 x 8	9.5 x 9.5	10 x 10	12 x 12	Modular head	Through-coolant	Direct connection	0	1			2
											0	1			2
	<b>CSVR/L</b>	CSVG	●	●	●	●	●				0.25	1.5	0.15 - 2.6	<b>6-28</b>	

### MiniVLockGroove

Application	Designation	Insert	Square shank (height x width)					Holder			Groove width (mm)		Max. groove depth (mm)	Page	
			8 x 8	10 x 10	10 x 12	12 x 12	12 x 16	Modular head	Through-coolant	Direct connection	0	1			2
											0	1			2
	<b>QC-SVER/L-CHP</b> Modular head	VGP...			●	●	●	●	●	●	0.33	1	2.5 - 4	<b>6-30</b>	
	<b>SVER/L</b>	VGP...	●	●		●					0.5	1	2 - 4	<b>6-30</b>	

### GTM32

Application	Designation	Insert	Square shank (height x width)							Cylindrical shank (shank dia.)							
			8 x 8	8 x 10	10 x 10	10 x 12	12 x 12	12 x 16	16 x 16	20 x 20	ø14	ø15.875	ø16	ø19.05	ø20		
	<b>GTTR-OH2/OH3</b>	GTMH32				●	●		●								
	<b>GTTR/L</b>	GTMH32	●		●		●		●								
	<b>CH-GTTL</b>	GTMH32			●		●		●								
	<b>Y-GTTR-OH</b>	GTMH32					●		●								
	<b>Y-GTTR</b>	GTMH32			●		●										
	<b>DS-GTTL</b>	GTMH32									●	●	●	●			

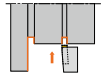
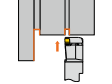
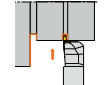
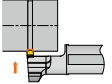
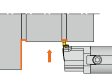
					Holder				Groove width (mm)						Max. groove depth (mm)	Page
	ø22	ø25	ø25.4	ø32	Modular head	Y-axis feed	Through-coolant	Direct connection	0	1	2	3	4	5		
						●	●	0.3							0.25 - 2.7	6-33
								0.3							0.25 - 2.7	6-34
								0.3							0.25 - 2.7	6-35
						●	●	0.3							0.25 - 2.7	6-35
						●		0.3							0.25 - 2.7	6-36
	●	●	●	●				0.3							0.25 - 2.7	6-36

Grade	1
Insert	2
Ext. Toolholder	3
Int. Toolholder	4
Threading	5
Grooving	6
Shaper	7
Endmill	8
Drilling Tool	9
Technical Reference	10




# Quick Guide

## External Grooving Metric

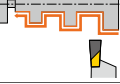
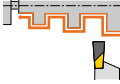
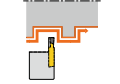
### TetraMini-Cut

Application	Designation	Insert	Square shank (height x width)						Cylindrical shank (shank dia.)							
			10 x 10	10 x 12	12 x 12	12 x 16	16 x 16	16 x 20	20 x 20	ø14	ø15.875	ø16	ø19.05	ø20	ø22	
	<b>QC-STCR/L-Y-CHP</b> Modular head	TC*18R/L...			●	●	●	●								
	<b>QC-STCR/L-CHP</b> Modular head	TC*18R/L...			●	●	●	●								
	<b>STCR/L-18</b>	TC*18R/L...	●		●											
	<b>JS-STCL18</b>	TC*18R...							●	●	●	●	●	●	●	
	<b>QR-STCL18-CHP</b>	TC*18R...									●	●	●			

### TetraForce-Cut

Application	Designation	Insert	Square shank (height x width)				Holder		Groove width (mm)						Max. groove depth (mm)	Page
			10 x 10	12 x 12	16 x 16	20 x 20	Through-coolant	Direct connection	0	1	2	3	4	5		
	<b>STCR/L-27</b>	TC*27...	●	●	●	●			0.5	3.18					1 - 6.4	<b>6-58</b>
	<b>STCR/L-27-CHP</b>	TC*27...		●		●	●	●	0.5	3.18					1 - 6.4	<b>6-58</b>
	<b>STCR/L-38</b>	TCL38...				●			0.5	4					9 - 10	<b>6-64</b>

### GTPA

Application	Designation	Insert	Square shank (height x width)						Holder					
			10 x 10	10 x 14	12 x 12	12 x 14	12 x 16	16 x 16	20 x 20	Modular head	Y-axis feed	Through-coolant	Direct connection	
	<b>GTPAR-OH</b>	GTPA				●						●		
	<b>GTPAR</b>	GTPA	●		●									
	<b>Y-GTPAR-OH</b>	GTPA		●			●	●				●	●	



	Holder						Groove width (mm)						Max. groove depth (mm)	Page	
	ø25	ø25.4	Modular head	Y-axis feed	Through-coolant	Direct connection	0	1	2	3	4	5			
			●	●	●	●	0.33						3.18	0.8 - 3.5	6-46
			●		●	●	0.33						3.18	0.8 - 3.5	6-47
							0.33						3.18	0.8 - 3.5	6-47
	●	●					0.33						3.18	0.8 - 3.5	6-48
			●		●		0.33						3.18	0.8 - 3.5	6-48


	Groove width (mm)					Max. groove depth (mm)	Page
	1	2	3	4	5		
		2	2.5			3.0 - 6.0	6-65
		2	2.5			3.0 - 6.0	6-65
		2	2.5			3.0 - 6.0	6-66

Grade	1
Insert	2
Ext. Toolholder	3
Int. Toolholder	4
Threading	5
Grooving	6
Shaper	7
Endmill	8
Drilling Tool	9
Technical Reference	10

# Quick Guide


## External Grooving Metric

### SCRUM DUO


Application	Designation	Insert	Square shank (height x width)				Holder		Groove width (mm)						Max. groove depth (mm)	Page
			10 x 10	12 x 12	16 x 16	20 x 20	Through-coolant	Direct connection								
									0	2	4	6	8	10		
	<b>GTWPR/L</b>	GWPG	●	●	●	●			3	6				7.0 - 9.0	<b>6-68</b>	

## Internal Grooving Metric

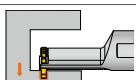
### SNG

Application	Designation	Insert	Cylindrical shank (shank dia.)					Groove width (mm)	Max. groove depth (mm)	Through coolant
			ø8	ø10	ø12	ø16	ø20			
	<b>A/E-SNGR</b>	*GR/L... *GMR...	●	●	●	●	●	1 - 3.5	1.5 - 3	●

### Mogul Bar S-BG

Application	Designation	Insert	Cylindrical shank (shank dia.)						Groove width (mm)	Max. groove depth (mm)	Through coolant
			ø8	ø10	ø12	ø14	ø16	ø20			
	<b>S-BGR</b>	GTG10...		●	●				0.5 - 3	1 - 3	

### AddInternalCut

Application	Designation	Insert	Cylindrical shank		Groove width (mm)	Max. groove depth (mm)	Through coolant
			ø12	ø16			
	<b>A/E-STCIR/L</b>	TCIG10/12...	●	●	0.5 - 3	1 - 3	●



# TungHeavyGroove

Application	Designation	Insert	Square shank (height x width)			Groove width (mm)						Max. groove depth (mm)	Page
			12 x 12	16 x 16	20 x 20	0	10	20	30	40	50		
	<b>FPGN</b>	PSGB...	●	●	●	0	10	20	30	40	50	-	<b>6-70</b>

## Min. bore diameter DMIN (mm)

0	5	10	15	20	25	Page
		ø8			ø24	<b>6-72</b>

## Min. bore diameter DMIN (mm)

0	5	10	15	20	25	Page
		ø10			ø20.5	<b>6-76</b>

## Min. bore diameter DMIN (mm)

0	5	10	15	20	25	Page
		ø10.5			ø20	<b>6-77</b>

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9


Technical Reference

10

# Quick Guide

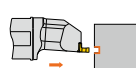

## Internal Grooving Metric

### TungShortCut

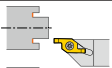
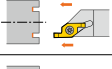

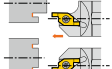

Application	Designation	Insert	Cylindrical shank			Groove width (mm)	Max. groove depth (mm)	Through coolant
			ø10	ø12	ø16			
	<b>CTIR/L-S</b>	DGS*S/ DTR*S	●	●	●	2 - 3	3 - 6	●

## Face Grooving Metric

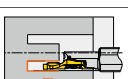
### TetraMini-Cut

Application	Designation	Insert	Square shank (height x width)			Cylindrical shank (shank dia.)							
			10 x 10	12 x 12	16 x 16	ø14	ø15.875	ø16	ø19.05	ø20	ø22	ø25	ø25.4
	<b>JS-STCFL18</b>	TCF18L...				●	●	●	●	●	●	●	●
	<b>STCFVR-18</b>	TCF18L...	●	●	●								

### SATURN DUO

Application	Designation	Insert	Square shank (height x width)					Cylindrical shank (shank dia.)								
			10 x 10	10 x 16	12 x 12	12 x 16	16 x 16	ø14	ø15.875	ø16	ø19.05	ø20	ø22	ø25	ø25.4	
	<b>FGVR</b>	FGV FBV		●		●	●									
			<b>CH-FGVR/L</b>	FGV FBV	●		●	●								
	<b>DS-FGVR/L</b>	FGV FBV								●	●	●	●	●	●	
																
																

### FaceMiniCut

Application	Designation	Insert	Cylindrical shank (shank dia.)				Groove width (mm)	Max. groove depth (mm)	Min. face groove outside diameter (mm)						Page
			ø12	ø12.7	ø15.875	ø16			0	5	10	15	20	25	
	<b>A-MFR/O</b>	MFGR10	●	●	●	●	2 - 2.5	9	ø10						<b>6-86</b>

Min. bore diameter DMIN (mm)

	5	10	15	20	25	Page
		ø12	ø16			6-79

	Groove width (mm)	Max. groove depth (mm)	Min. face groove outside diameter (mm)					Page
			0	5	10	15	20	
	0.5 - 2.5	1 - 3	ø6					6-81
	0.5 - 2.5	1 - 3	ø6					6-81

	Groove width (mm)	Max. groove depth (mm)	Min. face groove outside diameter (mm)					Page
			0	5	10	15	20	
	1.0 - 2.0	1.5 - 3	ø6					6-83
	1.0 - 2.0	1.5 - 3	ø6					6-83
	1.0 - 2.0	1 - 3	ø6					6-84

# 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

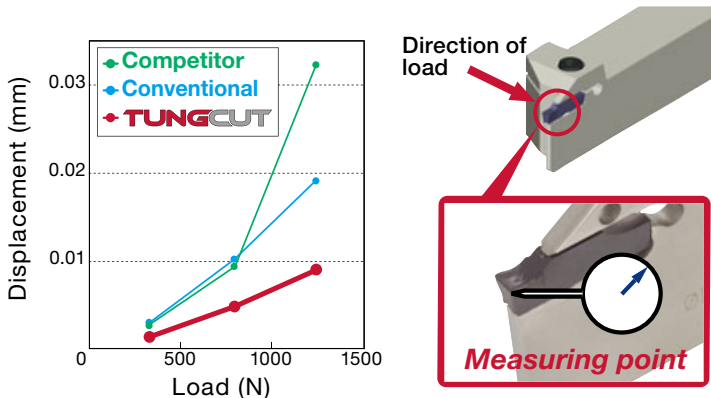


**Stable and safe contact areas**



**High repeatability and durability due to long pocket!**

### Minimizes cutting edge displacement



## New double-ended small-size internal grooving inserts with exceptional features

### Robust toolholder design

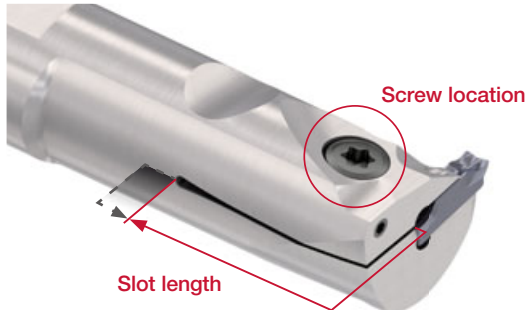


#### CTIR\*\*S

(Toolholder that accommodates downsized internal grooving insert)

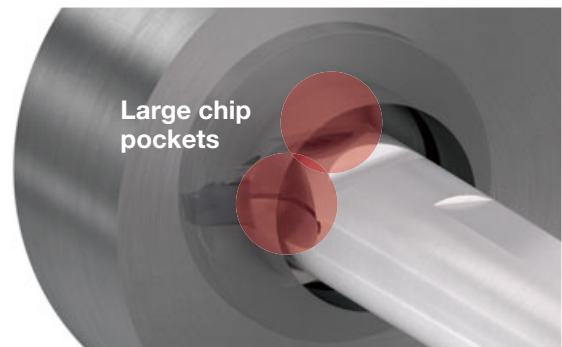
#### 1 Improved chatter resistance

- Optimized screw location enhances insert clamping capability
- Shorter slot length



#### 2 Effective chip evacuation

- Larger pockets promote smooth chip evacuation



#### 3 Internal coolant system

- Precision coolant delivered from the top to the cutting point for best performance and smooth chip evacuation.



# GTMH-GX Chipbreaker

For Grooving | Swiss CNC Lathes

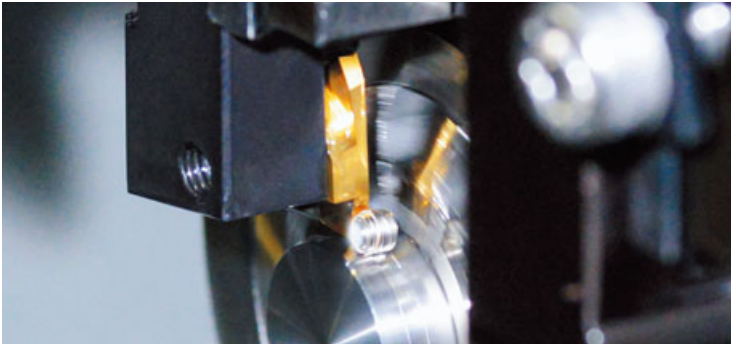
Groove widths from: 0.33 mm - 3.0 mm

Grooving & side turning with excellent chip control

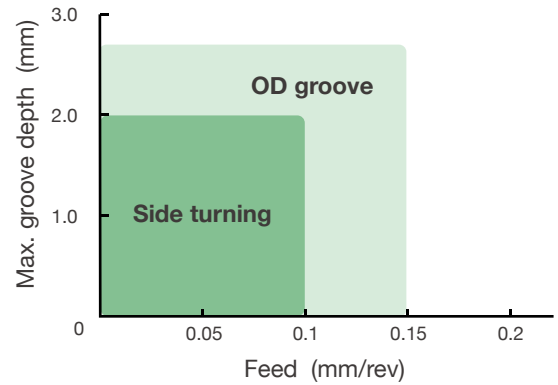
Groove width 1.5mm



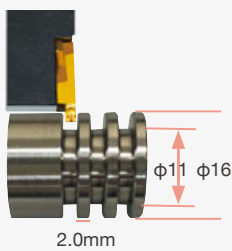
Groove width 1.0mm



## Functioning range



## Excellent chip control



Cutting conditions  
 Material: AISI 316L  
 vc=80m/min  
 f=0.02mm/rev  
 ap=2.5mm  
 WET

**GX Chipbreaker**



Competitor



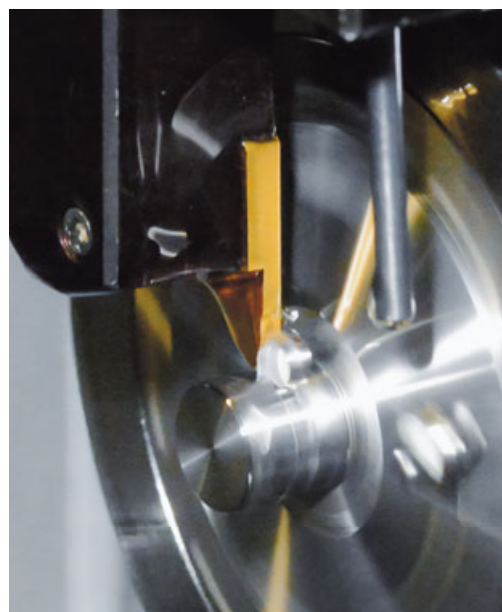
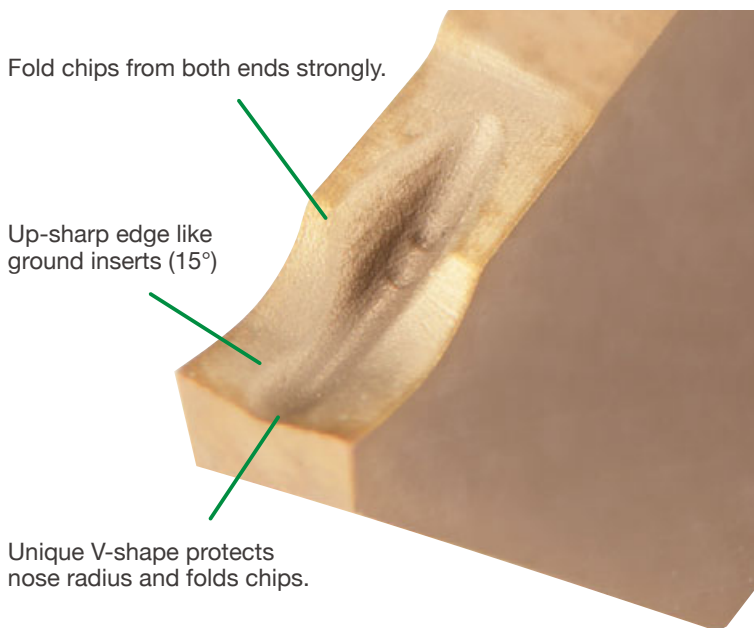
Reference pages: Inserts → [6-37](#) - [6-43](#), Toolholders → [6-33](#) - [6-36](#)



# CTP/CTPA-CX Chipbreaker

For Parting off | Swiss CNC Lathes

Curls and controls chips. Achieves good surface finish



## Cutting performance

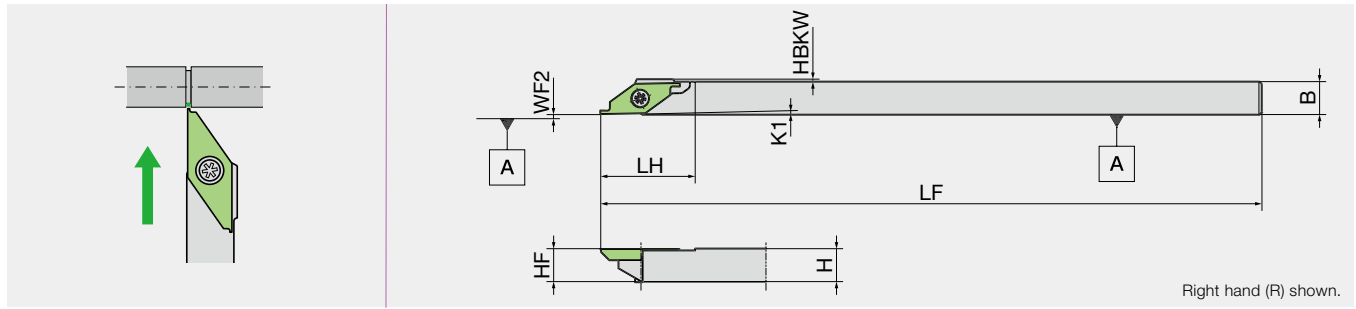
Feed (mm/rev)	CX Chipbreaker		Conventional (ground chipbreaker)		Competitor (3D chipbreaker)	
	Chip	Surface finish	Chip	Surface finish	Chip	Surface finish
0.02						
0.05						
	<b>Excellent machined surface finish</b>		Rough surface finish		Vibration occurred due to rigidity issue	

Reference pages: Inserts → [6-95](#) - [6-100](#), Toolholders → [6-91](#) - [6-94](#)

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# CSV

For Cam-style machine



Inch	H	B	LF	LH	HBKW	HF	K1	WF2	Insert
CSVR06-IN-NC	0.375	0.375	4.724	0.787	-	0.375	1°	0.004	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR08-IN-NC	0.500	0.500	4.724	0.787	-	0.500	1°	0.004	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVL06-IN-NC	0.375	0.375	4.724	0.787	-	0.375	1°	0.004	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVL08-IN-NC	0.500	0.500	4.724	0.787	-	0.500	1°	0.004	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
Metric	H	B	LF	LH	HBKW	HF	K1	WF2	Insert
CSVR07	7	7	140	20	0.5	7	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR07GX	7	7	85	20	0.5	7	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR08	8	8	140	20	0	8	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR08GX	8	8	85	20	0	8	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR095	9.5	9.5	140	20	0	9.5	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR10	10	10	140	20	0	10	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR12	12	12	140	20	0	12	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR12GX	12	12	85	20	0	12	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVL07	7	7	140	20	0.5	7	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVL08	8	8	140	20	0	8	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVL10	10	10	140	20	0	10	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR08NC	8	8	120	20	-	8	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR08NC-F	8	8	120	20	-	8	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR10GXNC	10	10	85	20	-	10	1°	0 - 0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR10NC	10	10	120	20	-	10	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVR12NC	12	12	120	20	-	12	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVL08NC	8	8	120	20	-	8	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVL10NC	10	10	120	20	-	10	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..
CSVL12NC	12	12	120	20	-	12	1°	0.1	CSV series, CSVF../CSVB../CSVC../CSVG../CSVT..

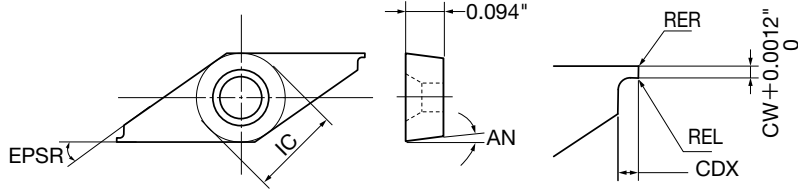
## SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CSVR/L**	LRIS-2.5*7	CLR-15S

# INSERT

## CSVG without Chipbreaker (For Grooving)



<b>P</b>	Steel	★
<b>M</b>	Stainless	☆
<b>N</b>	Non-ferrous	
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice

Right hand (R) shown.

Designation	HAND	Coated	Mirror finish	CW (mm)	CW (in)	APMX* (in)	CDX (in)	IC (in)	AN	EPSR	REL (in)	RER (in)
		VM1										
CSVG11FRV025	R	●	M	0.25	0.010	0.006	0.020	0.250	7°	35°	0	0
CSVG11FRV030	R	●	M	0.3	0.012	0.006	0.020	0.250	7°	35°	0	0
CSVG11FRV035	R	●	M	0.35	0.014	0.006	0.020	0.250	7°	35°	0	0
CSVG11FRV040	R	●	M	0.4	0.016	0.006	0.020	0.250	7°	35°	0	0
CSVG11FRV045	R	●	M	0.45	0.018	0.018	0.039	0.250	7°	35°	0	0
CSVG11FRV050	R	●	M	0.5	0.020	0.018	0.039	0.250	7°	35°	0	0
CSVG11FRV055	R	●	M	0.55	0.022	0.018	0.039	0.250	7°	35°	0	0
CSVG11FRV060	R	●	M	0.6	0.024	0.018	0.039	0.250	7°	35°	0	0
CSVG11FRV065	R	●	M	0.65	0.026	0.018	0.039	0.250	7°	35°	0	0
CSVG11FRV070	R	●	M	0.7	0.028	0.018	0.039	0.250	7°	35°	0	0
CSVG11FRV075	R	●	M	0.75	0.030	0.055	0.079	0.250	7°	35°	0	0
CSVG11FRV080	R	●	M	0.8	0.031	0.055	0.079	0.250	7°	35°	0	0
CSVG11FRV085	R	●	M	0.85	0.033	0.055	0.079	0.250	7°	35°	0	0
CSVG11FRV090	R	●	M	0.9	0.035	0.055	0.079	0.250	7°	35°	0	0
CSVG11FRV095	R	●	M	0.95	0.037	0.055	0.079	0.250	7°	35°	0	0
CSVG11FRV100	R	●	M	1	0.039	0.055	0.079	0.250	7°	35°	0	0
CSVG11FRV110	R	●	M	1.1	0.043	0.102	0.118	0.250	7°	35°	0	0
CSVG11FRV120	R	●	M	1.2	0.047	0.102	0.118	0.250	7°	35°	0	0
CSVG11FRV130	R	●	M	1.3	0.051	0.102	0.118	0.250	7°	35°	0	0
CSVG11FRV140	R	●	M	1.4	0.055	0.102	0.118	0.250	7°	35°	0	0
CSVG11FRV150	R	●	M	1.5	0.059	0.102	0.118	0.250	7°	35°	0	0
CSVG11FLV075	R	●	M	0.75	0.030	0.055	0.079	0.250	7°	35°	0	0
CSVG11FLV095	R	●	M	0.95	0.037	0.055	0.079	0.250	7°	35°	0	0
CSVG11FLV120	R	●	M	1.2	0.047	0.102	0.118	0.250	7°	35°	0	0

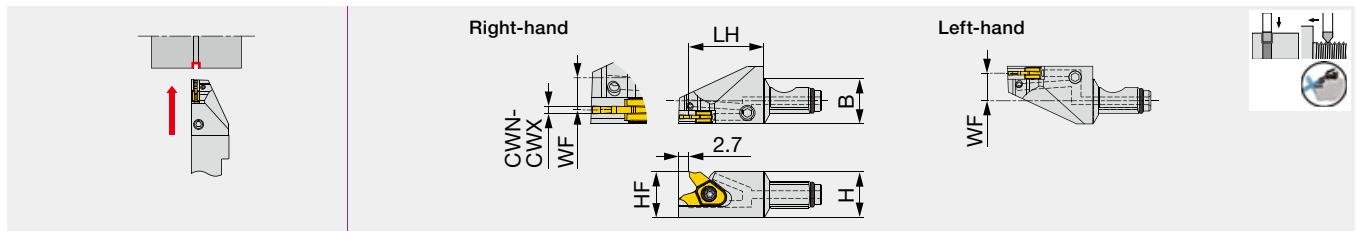
NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up

\* Depth of cut maximum

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

Modular head for external grooving and threading, with high pressure coolant capability



Metric	CWN	CWX	H	B	LH	HF	WF (1)	Insert	Torque
QC10-SVER/L10-CHP	0.5 (0.020")	1 (0.039")	10 (0.625")	10 (0.625")	17 (0.669")	10 (0.394")	3.19/6.19 (0.126"/0.244)	VG*10...	1.3 (0.96)
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)

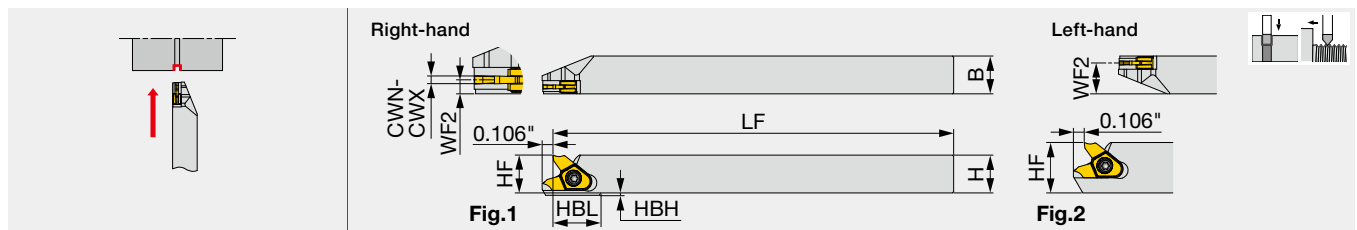
Torque: Recommended clamping torque: N·m (lbs·ft)

(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) "WF2" 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

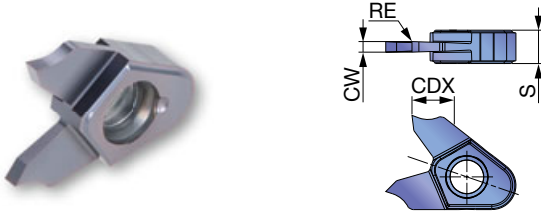


Designation	Clamping screw	Wrench	O-ring
QC10-SVER10-CHP	CSTB-2.5L054DL	T-7F	ORSS-0353.5X1.0NBR70
QC10-SVEL10-CHP	CSTB-2.5L054DR	T-7F	ORSS-0353.5X1.0NBR70
QC12-SVER10-CHP	CSTB-2.5L054DL	T-7F	ORSS-0454.5X1.0NBR70
QC12-SVEL10-CHP	CSTB-2.5L054DR	T-7F	ORSS-0454.5X1.0NBR70
SVER0808...	CSTB-2.2L053DL	T-7F	-
SVEL0808...	CSTB-2.2L053DR	T-7F	-
SVER06/08-10, SVEL1010/1212...	CSTB-2.5L054DL	T-7F	-
SVEL06/08-10, SVEL1010/1212...	CSTB-2.5L054DR	T-7F	-

Reference pages: QC12-SVER/L-CHP: Shank, Accessory → **3-130 - 3-132**  
Standard cutting conditions → **6-32**

# INSERTS

## VGP08/10 (For grooving / sharp edge)



P	Steel	★					
M	Stainless	★					
K	Cast iron						
N	Non-ferrous	★					
S	Superalloys	★					
H	Hard materials						

★ : First choice

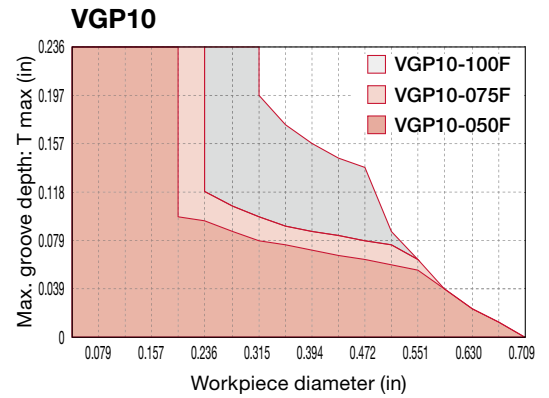
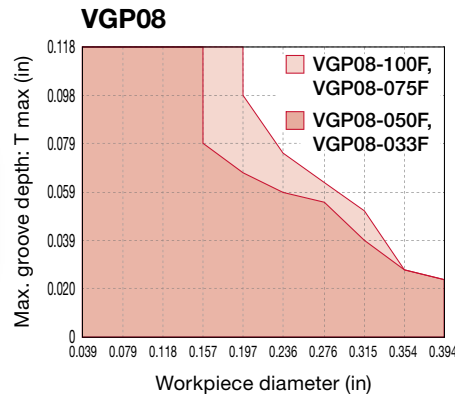
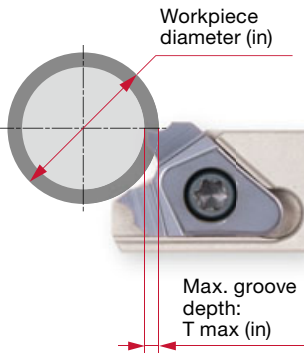
Designation	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated				CDX* (in)	CUTDIA (in)	S (in)
				SH725						
VGP08-033F-000	0.33	0.013	0	●				0.079	0.157	0.087
VGP08-050F-000	0.5	0.020	0	●				0.079	0.157	0.087
VGP08-075F-000	0.75	0.030	0	●				0.098	0.197	0.087
VGP08-100F-000	1	0.039	0	●				0.098	0.197	0.087
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

### 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.



Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# STANDARD CUTTING CONDITIONS

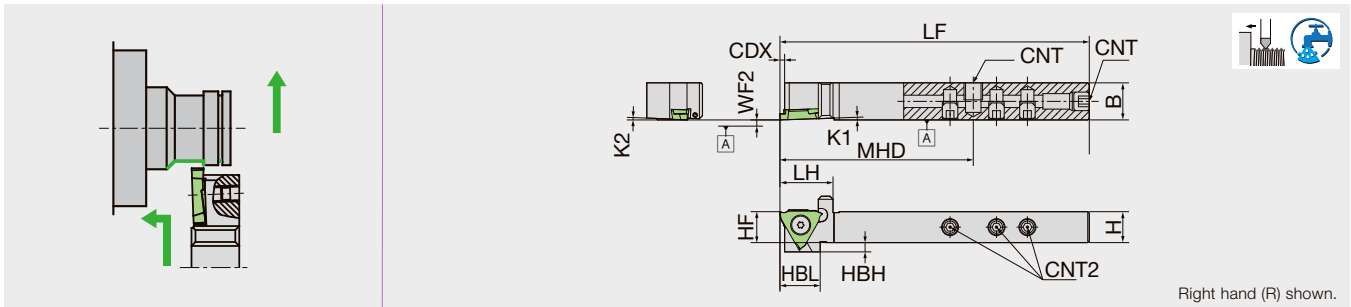
## Grooving

ISO	Workpiece materials	Grade	Cutting speed Vc (sfm)	Feed f (ipr)
<b>P</b>	Low carbon steels 1015, 1020, etc.	SH725	164 - 492	0.0002 - 0.004
	Carbon steels, Alloy steels 1055, 4140, etc.	SH725	164 - 492	0.0002 - 0.004
	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 492	0.0002 - 0.004
<b>M</b>	Stainless steels 304, etc.	SH725	164 - 328	0.0002 - 0.004
<b>N</b>	Aluminum alloys 5056, 6061, etc.	SH725	492 - 722	0.0002 - 0.004
	Copper alloy C2600, C280C, etc.	SH725	328 - 656	0.0002 - 0.004
<b>S</b>	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.0002 - 0.004
	Superalloys Inconel718, etc.	SH725	98 - 262	0.0002 - 0.004



## GTT-OH3

Coolant through (direct connect compatible)



Inch	CW	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
GTTT10XB-IN-OH3	0.012 - 0.118	0.625	0.625	4.724	0.787	0.063	-	-	0.625	2°	2°	3.100	0	NPT1/8	M5	GT**32.. TBMH32..
Metric	CW	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
GTTT1012H00-OH3	0.3 - 3	10	12	100	17.15	1.6	3	13	10	2°	2°	62.5	0	Rc1/8	M5	GT**32.. TBMH32..
GTTT16X00-OH3	0.3 - 3	16	16	120	20	1.6	-	-	16	2°	2°	78.75	0	Rc1/8	M5	GT**32.. TBMH32..

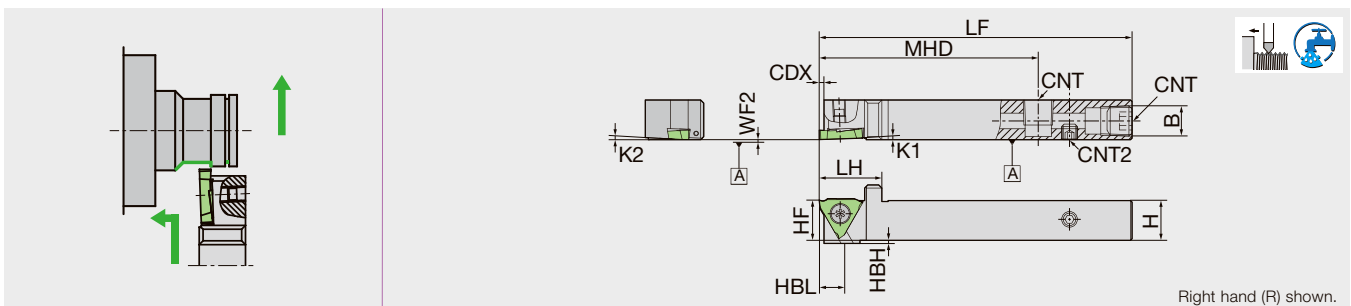
NOTE: Reference Chart of OH3 Hole Position → 10-1

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
GTTT10XB-IN-OH3	LR-S-4*10PW	SPNPT1/8	SS0505SC	CLR-15S	LW-2.5
GTTT1012H00-OH3	LR-S-4*10PW	SS0605SC	SS0505SC	CLR-15S	LW-2.5
GTTT16X00-OH3	LR-S-4*10PW	SPR1/8	SS0505SC	CLR-15S	LW-2.5

## GTT-OH2

Coolant through (direct connect compatible)



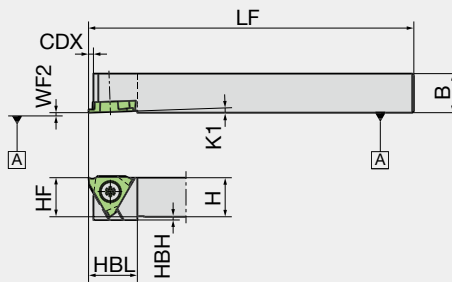
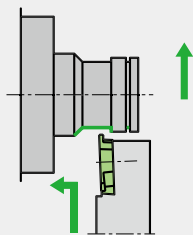
Inch	CW	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
GTTT08HA-IN-OH2	0.012 - 0.118	0.500	0.500	3.937	0.787	0.071	0.039	0.512	0.500	2°	2°	2.756	0	NPT1/8	M5	GT**32.. TBMH32..
GTTT08HB-IN-OH2	0.012 - 0.118	0.500	0.500	3.937	0.787	0.106	0.039	0.512	0.500	2°	2°	2.756	0	NPT1/8	M5	GT**32.. TBMH32..
GTTT10XA-IN-OH2	0.012 - 0.118	0.625	0.625	3.937	0.787	0.071	-	-	0.625	2°	2°	2.756	0	NPT1/8	M5	GT**32.. TBMH32..
GTTT10XB-IN-OH2	0.012 - 0.118	0.625	0.625	4.724	0.787	0.106	-	-	0.625	2°	2°	2.756	0	NPT1/8	M5	GT**32.. TBMH32..
Metric	CW	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
GTTT12H00-OH2	0.3 - 3	12	12	100	19.5	1.6	1	13	12	2°	2°	70	0	Rc1/8	M5	GT**32.. TBMH32..
GTTT16X00-OH2	0.3 - 3	16	16	120	19.5	1.6	-	-	16	2°	2°	70	0	Rc1/8	M5	GT**32.. TBMH32..

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
GTTT08HA-IN-OH2	LR-S-4*10PW	SPNPT1/8	SS0505SC	CLR-15S	LW-2.5
GTTT08HB-IN-OH2	LR-S-4*10PW	SPNPT1/8	SS0505SC	CLR-15S	LW-2.5
GTTT10XA-IN-OH2	LR-S-4*10PW	SPNPT1/8L	SS0505SC	CLR-15S	LW-2.5
GTTT10XB-IN-OH2	LR-S-4*10PW	SPNPT1/8L	SS0505SC	CLR-15S	LW-2.5
GTTT**H00-OH2	LR-S-4*10PW	SPR1/8	SS0505SC	CLR-15S	LW-2.5

Reference pages: Inserts → 6-37 - 6-43

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



Right hand (R) shown.



Inch	CW	H	B	LF	CDX	HBH	HBL	HF	K1	K2	WF2	Insert
GTTR06A-IN	0.012 - 0.118	0.375	0.375	4.724	0.071	0.118	0.591	0.375	2°	2°	0	GT**32.. TBMH32..
GTTR06B-IN	0.012 - 0.118	0.375	0.375	4.724	0.106	0.118	0.591	0.375	2°	2°	0	GT**32.. TBMH32..
GTTR08A-IN	0.012 - 0.118	0.500	0.500	4.724	0.071	0.039	0.591	0.500	2°	2°	0	GT**32.. TBMH32..
GTTR08B-IN	0.012 - 0.118	0.500	0.500	4.724	0.106	0.039	0.591	0.500	2°	2°	0	GT**32.. TBMH32..
GTTR10A-IN	0.012 - 0.118	0.625	0.625	4.724	0.071	-	-	0.625	2°	2°	0	GT**32.. TBMH32..
GTTR10B-IN	0.012 - 0.118	0.625	0.625	4.724	0.106	-	-	0.625	2°	2°	0	GT**32.. TBMH32..
GTTR12A-IN	0.012 - 0.118	0.750	0.750	4.724	0.071	-	-	0.750	2°	2°	0	GT**32.. TBMH32..
GTTR12B-IN	0.012 - 0.118	0.750	0.750	4.724	0.106	-	-	0.750	2°	2°	0	GT**32.. TBMH32..
GTTL06A-IN	0.012 - 0.118	0.375	0.375	4.724	0.071	0.118	0.591	0.375	2°	2°	0	GT**32.. TBMH32..
GTTL06B-IN	0.012 - 0.118	0.375	0.375	4.724	0.106	0.118	0.591	0.375	2°	2°	0	GT**32.. TBMH32..
GTTL08A-IN	0.012 - 0.118	0.500	0.500	4.724	0.071	0.039	0.591	0.500	2°	2°	0	GT**32.. TBMH32..
GTTL08B-IN	0.012 - 0.118	0.500	0.500	4.724	0.106	0.039	0.591	0.500	2°	2°	0	GT**32.. TBMH32..
GTTL10A-IN	0.012 - 0.118	0.625	0.625	4.724	0.071	-	-	0.625	2°	2°	0	GT**32.. TBMH32..
GTTL10B-IN	0.012 - 0.118	0.625	0.625	4.724	0.106	-	-	0.625	2°	2°	0	GT**32.. TBMH32..

Metric	CW	H	B	LF	CDX	HBH	HBL	HF	K1	K2	WF2	Insert
GTTR08F00	0.3 - 3	8	8	80	1.6	5	15	8	2°	2°	0	GT**32.. TBMH32..
GTTR08K00	0.3 - 3	8	8	120	1.6	5	15	8	2°	2°	0	GT**32.. TBMH32..
GTTR10F00	0.3 - 3	10	10	80	1.6	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTR10F15	1.45 - 3	10	10	80	2.7	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTR10F25	2.5 - 3	10	10	80	2.7	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTR10K00	0.3 - 3	10	10	120	1.6	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTR10K15	1.45 - 3	10	10	120	2.7	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTR10K25	2.5 - 3	10	10	120	2.7	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTR12F00	0.3 - 3	12	12	80	1.6	1	15	12	2°	2°	0	GT**32.. TBMH32..
GTTR12F15	1.45 - 3	12	12	80	2.7	1	15	12	2°	2°	0	GT**32.. TBMH32..
GTTR12F25	2.5 - 3	12	12	80	2.7	1	15	12	2°	2°	0	GT**32.. TBMH32..
GTTR12K00	0.3 - 3	12	12	120	1.6	1	15	12	2°	2°	0	GT**32.. TBMH32..
GTTR12K15	1.45 - 3	12	12	120	2.7	1	15	12	2°	2°	0	GT**32.. TBMH32..
GTTR12K25	2.5 - 3	12	12	120	2.7	1	15	12	2°	2°	0	GT**32.. TBMH32..
GTTR16H00	0.3 - 3	16	16	100	1.6	-	-	16	2°	2°	0	GT**32.. TBMH32..
GTTR16H15	1.45 - 3	16	16	100	2.7	-	-	16	2°	2°	0	GT**32.. TBMH32..
GTTR16H25	2.5 - 3	16	16	100	2.7	-	-	16	2°	2°	0	GT**32.. TBMH32..
GTTR16K00	0.3 - 3	16	16	120	1.6	-	-	16	2°	2°	0	GT**32.. TBMH32..
GTTR16K15	1.45 - 3	16	16	120	2.7	-	-	16	2°	2°	0	GT**32.. TBMH32..
GTTR16K25	2.5 - 3	16	16	120	2.7	-	-	16	2°	2°	0	GT**32.. TBMH32..
GTTR20K00	0.3 - 3	20	20	125	2.7	-	-	20	2°	2°	0	GT**32.. TBMH32..
GTTR25M00	0.3 - 3	25	25	150	2.7	-	-	25	2°	2°	0	GT**32.. TBMH32..
GTTL08F00	0.3 - 3	8	8	80	1.6	5	15	8	2°	2°	0	GT**32.. TBMH32..
GTTL08K00	0.3 - 3	8	8	120	1.6	5	15	8	2°	2°	0	GT**32.. TBMH32..
GTTL10F00	0.3 - 3	10	10	80	1.6	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTL10F15	1.45 - 3	10	10	80	2.7	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTL10F25	2.5 - 3	10	10	80	2.7	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTL10K00	0.3 - 3	10	10	120	1.6	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTL10F15	1.45 - 3	10	10	80	2.7	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTL10F25	2.5 - 3	10	10	80	2.7	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTL10K00	0.3 - 3	10	10	120	1.6	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTL10K15	1.45 - 3	10	10	120	2.7	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTL10K25	2.5 - 3	10	10	120	2.7	3	15	10	2°	2°	0	GT**32.. TBMH32..
GTTL12F00	0.3 - 3	12	12	80	1.6	1	15	12	2°	2°	0	GT**32.. TBMH32..
GTTL12F15	1.45 - 3	12	12	80	2.7	1	15	12	2°	2°	0	GT**32.. TBMH32..
GTTL12F25	2.5 - 3	12	12	80	2.7	1	15	12	2°	2°	0	GT**32.. TBMH32..
GTTL12K00	0.3 - 3	12	12	120	1.6	1	15	12	2°	2°	0	GT**32.. TBMH32..
GTTL12K15	1.45 - 3	12	12	120	2.7	1	15	12	2°	2°	0	GT**32.. TBMH32..
GTTL12K25	2.5 - 3	12	12	120	2.7	1	15	12	2°	2°	0	GT**32.. TBMH32..
GTTL16H00	0.3 - 3	16	16	100	1.6	-	-	16	2°	2°	0	GT**32.. TBMH32..
GTTL16H15	1.45 - 3	16	16	100	2.7	-	-	16	2°	2°	0	GT**32.. TBMH32..
GTTL16H25	2.5 - 3	16	16	100	2.7	-	-	16	2°	2°	0	GT**32.. TBMH32..
GTTL16K00	0.3 - 3	16	16	120	1.6	-	-	16	2°	2°	0	GT**32.. TBMH32..
GTTL16K15	1.45 - 3	16	16	120	2.7	-	-	16	2°	2°	0	GT**32.. TBMH32..
GTTL16K25	2.5 - 3	16	16	120	2.7	-	-	16	2°	2°	0	GT**32.. TBMH32..
GTTL20K00	0.3 - 3	20	20	125	1.6	-	-	20	2°	2°	0	GT**32.. TBMH32..
GTTL25M00	0.3 - 3	25	25	150	1.6	-	-	25	2°	2°	0	GT**32.. TBMH32..

SPARE PARTS



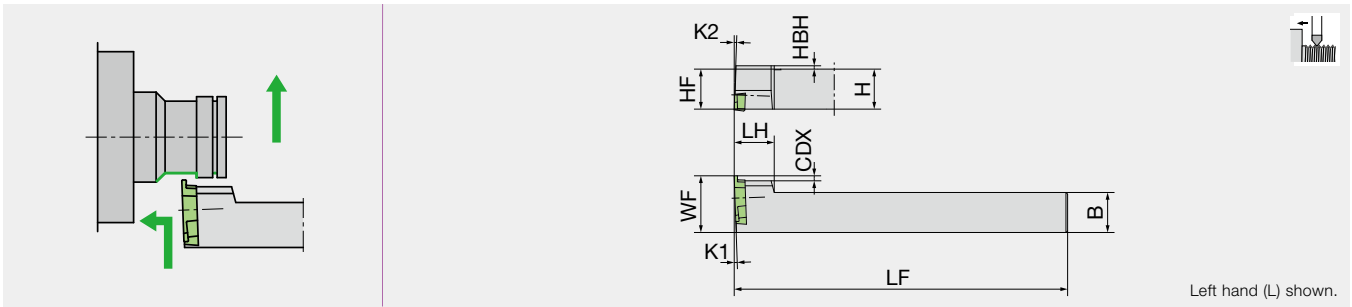
Designation	Clamp screw	Wrench (for Clamp screw)
GTTR/L**A-IN, GTTR/L**B-IN, GTTR/L**	LR-S-4*10PW	CLR-15S
GTTL08**	LR-S-4*5.8	CLR-15S

Reference pages: Inserts → 6-37 - 6-43



## CH-GTT

For horizontal gang style tool post



Metric	CW	H	B	LF	LH	CDX	HBH	HF	K1	K2	WF	Insert	
CH-GTTL10H00	0.3 - 3	10	10	100	12	1.5	3	10	2°	2°	15	GT**32..	TBMH32..
CH-GTTL12H00	0.3 - 3	12	12	100	12	1.5	1	12	2°	2°	17	GT**32..	TBMH32..
CH-GTTL16H00	0.3 - 3	16	16	100	12	1.5	-	16	2°	2°	21	GT**32..	TBMH32..

Use a right-handed (R) insert

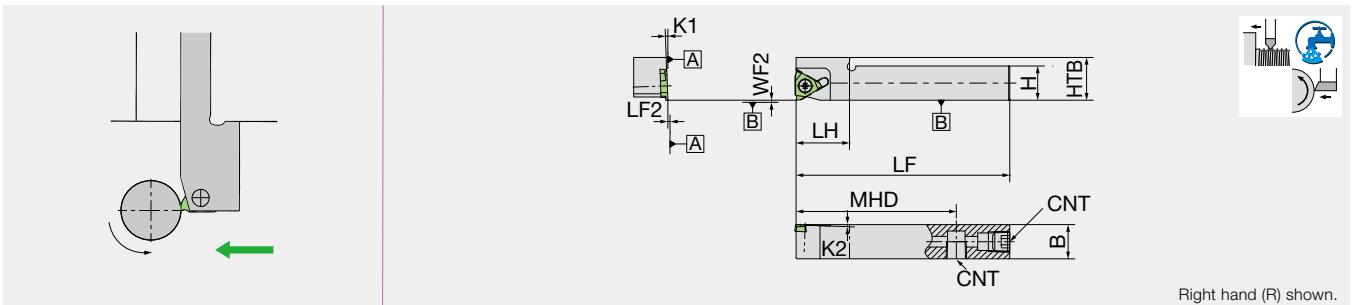
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CH-GTTL**	LR-S-4*9	RLR-20S

## Y-GTT-OH

Y-axis coolant through holders



Inch	CW	H	B	LF	LH	HTB	K1	K2	LF2	MHD	WF2	CNT	Insert	
Y-GTTR08H-IN-OH	0.012 - 0.118	0.500	0.500	3.937	0.984	0.787	2°	2°	0	2.953	0	Rc1/8	GT**32..	TBMH32..
Y-GTTR08H-IN-OH2	0.012 - 0.118	0.500	0.500	3.937	0.984	0.787	2°	2°	0	2.756	0	Rc1/8	GT**32..	TBMH32..
Metric	CW	H	B	LF	LH	HTB	K1	K2	LF2	MHD	WF2	CNT	Insert	
Y-GTTR12H00S-OH	0.3 - 3	12	12	100	20	20	2°	2°	0	75	0	Rc1/8	GT**32..	TBMH32..
Y-GTTR16H00-OH	0.3 - 3	16	16	100	25	20	2°	2°	0	75	0	Rc1/8	GT**32..	TBMH32..

NOTE: Use a right-handed (R) insert.

NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter.

→10-1

### SPARE PARTS



Designation	Clamp screw	Screw (for CNT)	Wrench (for Clamp screw)
Y-GTTR08H-IN-OH	LR-S-4*10PW	SPNPT1/8	CLR-15S
Y-GTTR08H-IN-OH2	LR-S-4*10PW	SPNPT1/8	CLR-15S
Y-GTTR**H00S-OH	LR-S-4*10PW	SPR1/8	CLR-15S

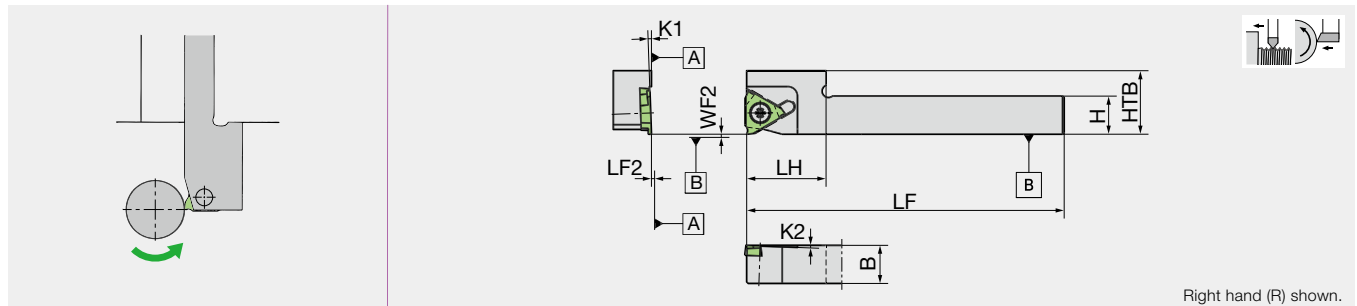
Reference pages: Inserts → 6-37 - 6-43

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

## Y-GTT

### Y-axis



Right hand (R) shown.

Inch	CW	H	B	LF	LH	CDX	HTB	K1	K2	LF2	WF2	Insert	
Y-GTTR06-IN	0.012 - 0.118	0.375	0.375	4.724	0.984	0.063	0.787	2°	2°	0	0	GT**32..	TBMH32..
Y-GTTR08-IN	0.012 - 0.118	0.500	0.500	4.724	0.984	0.063	0.787	2°	2°	0	0	GT**32..	TBMH32..
Y-GTTR10-IN	0.012 - 0.118	0.625	0.625	4.724	0.984	0.063	0.787	2°	2°	0	0	GT**32..	TBMH32..
Metric	CW	H	B	LF	LH	CDX	HTB	K1	K2	LF2	WF2	Insert	
Y-GTTR10MS	0.3 - 3	10	10	120	22	1.6	20	2°	2°	0	0	GT**32..	TBMH32..
Y-GTTR10S	0.3 - 3	10	10	120	20	1.6	20	2°	2°	0	0	GT**32..	TBMH32..
Y-GTTR12MS	0.3 - 3	12	12	120	22	1.6	20	2°	2°	0	0	GT**32..	TBMH32..
Y-GTTR12S	0.3 - 3	12	12	120	20	1.6	20	2°	2°	0	0	GT**32..	TBMH32..

NOTE: Use a right-handed (R) insert.

NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter.

→10-1

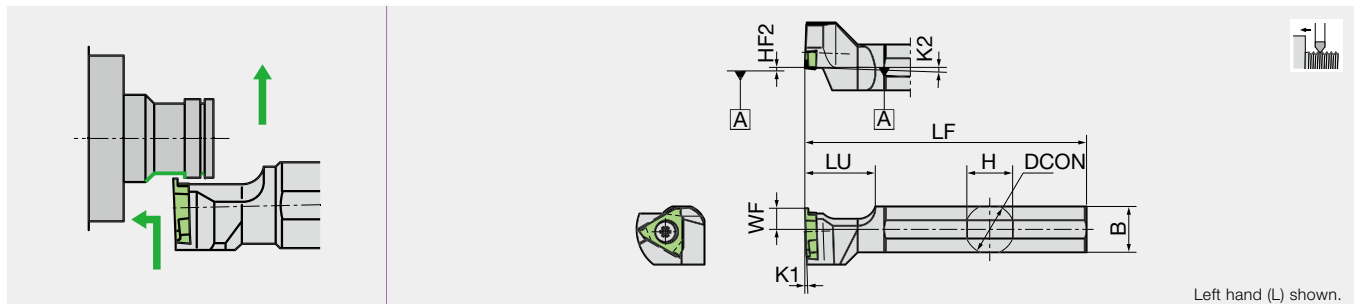
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
Y-GTTR**	LR-S-4*10PW	CLR-15S

## DS-GTT

### DS Toolholders / For sleeve tool post



Left hand (L) shown.

Metric	CW	H	B	LF	CDX	DCON	HF2	K1	K2	LU	WF	Insert	
DS-GTTL15H	0.3 - 3	15	15	100	1.6	15.875	0	2°	2°	19	6	GT**32..	TBMH32..
DS-GTTL16X	0.3 - 3	15	15	95	1.6	16	0	2°	2°	19	6	GT**32..	TBMH32..
DS-GTTL19	0.3 - 3	18	18	120	1.6	19.05	0	2°	2°	19	6	GT**32..	TBMH32..
DS-GTTL20	0.3 - 3	19	19	120	1.6	20	0	2°	2°	19	6	GT**32..	TBMH32..
DS-GTTL22	0.3 - 3	21	21	120	1.6	22	0	2°	2°	19	6	GT**32..	TBMH32..
DS-GTTL25	0.3 - 3	24	24	120	1.6	25.4	0	2°	2°	19	10	GT**32..	TBMH32..
DS-GTTL25-MET	0.3 - 3	24	24	150	1.6	25	0	2°	2°	19	10	GT**32..	TBMH32..
DS-GTTL32	0.3 - 3	30	30	150	1.6	32	0	2°	2°	19	10	GT**32..	TBMH32..

NOTE: Use a right-handed (R) insert.

### SPARE PARTS

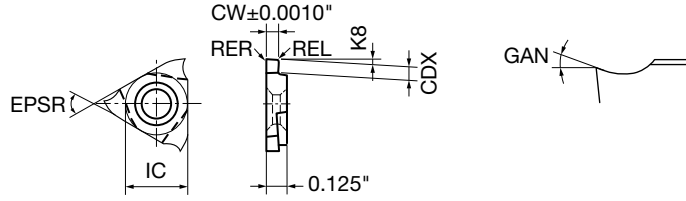


Designation	Clamp screw	Wrench (for Clamp screw)
DS-GTTL**	LR-S-4*9	RLR-20S

Reference pages: Inserts → 6-37 - 6-43

**INSERT**  
**GTMH32-GX**

Side Turning / 3D mold chipbreaker



Right hand (R) shown.

<b>P</b>	Steel	★	☆	☆
<b>M</b>	Stainless	☆	★	☆
<b>N</b>	Non-ferrous	☆	☆	★
<b>S</b>	Superalloys	★	☆	☆
<b>H</b>	Hard materials	★	☆	☆

★ : First choice  
☆ : Second choice

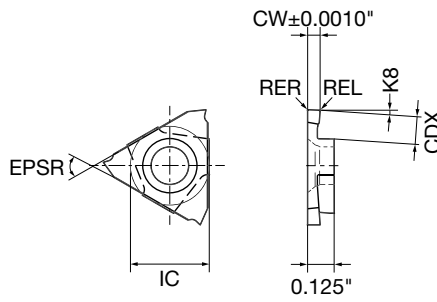
Designation	HAND	Coated			CW (mm)	CW (in)	APMX* (in)	CDX (in)	IC (in)	EPSR	GAN	K8	REL (in)	RER (in)
		DM4	ST4	TM4										
GTMH32033RGX	R	●	●	●	0.33	0.013	0.010	0.024	0.375	60°	17°	2°	0.002	0.002
GTMH32043RGX	R	●	●	●	0.43	0.017	0.035	0.047	0.375	60°	17°	2°	0.002	0.002
GTMH32050RGX	R	●	●	●	0.5	0.020	0.035	0.047	0.375	60°	17°	2°	0.002	0.002
GTMH32053RGX	R	●	●	●	0.53	0.021	0.035	0.047	0.375	60°	17°	2°	0.002	0.002
GTMH32075RGX	R	●	●	●	0.75	0.030	0.063	0.079	0.375	60°	17°	2°	0.002	0.002
GTMH32095RGX	R	●	●	●	0.95	0.037	0.063	0.079	0.375	60°	17°	2°	0.002	0.002
GTMH32100RGX	R	●	●	●	1	0.039	0.063	0.079	0.375	60°	17°	2°	0.002	0.002
GTMH32100RGX01	R	●	●	●	1	0.039	0.063	0.079	0.375	60°	17°	2°	0.004	0.004
GTMH32150RGX	R	●	●	●	1.5	0.059	0.106	0.118	0.375	60°	17°	2°	0.002	0.002
GTMH32150RGX01	R	●	●	●	1.5	0.059	0.106	0.118	0.375	60°	17°	2°	0.004	0.004
GTMH32150RGX02	R	●	●	●	1.5	0.059	0.106	0.118	0.375	60°	17°	2°	0.008	0.008
GTMH32200RGX	R	●	●	●	2	0.079	0.106	0.118	0.375	60°	17°	2°	0.002	0.002
GTMH32200RGX01	R	●	●	●	2	0.079	0.106	0.118	0.375	60°	17°	2°	0.004	0.004
GTMH32200RGX02	R	●	●	●	2	0.079	0.106	0.118	0.375	60°	17°	2°	0.008	0.008
GTMH32300RGX	R	●	●	●	3	0.118	0.106	0.118	0.375	60°	17°	2°	0.002	0.002
GTMH32300RGX02	R	●	●	●	3	0.118	0.106	0.118	0.375	60°	17°	2°	0.008	0.008

\* Depth of cut maximum

● : Line up

# GTMX32-T

## Side Turning



Right hand (R) shown.

<b>P</b>	Steel	★	☆
<b>M</b>	Stainless	☆	★
<b>N</b>	Non-ferrous	☆	★
<b>S</b>	Superalloys	☆	★
<b>H</b>	Hard materials	★	☆

★ : First choice  
☆ : Second choice



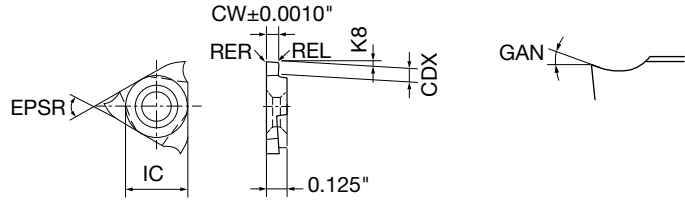
Designation	HAND	Coated		CW (mm)	CW (in)	APMX* (in)	CDX (in)	IC (in)	EPSR	GAN	K8	REL (in)	RER (in)
		QM3	DT4										
GTMX32030RT	R	●	●	0.3	0.012	0.010	0.024	0.375	60°	14°	2°	0.002	0.002
GTMX32033RT	R	●	●	0.33	0.013	0.010	0.024	0.375	60°	14°	2°	0.002	0.002
GTMX32043RT	R	●	●	0.43	0.017	0.035	0.047	0.375	60°	14°	2°	0.002	0.002
GTMX32050RT	R	●	●	0.5	0.020	0.035	0.047	0.375	60°	14°	2°	0.002	0.002
GTMX32053RT	R	●	●	0.53	0.021	0.035	0.047	0.375	60°	14°	2°	0.002	0.002
GTMX32065RT	R	●	●	0.65	0.026	0.035	0.047	0.375	60°	14°	2°	0.002	0.002
GTMX32075RT	R	●	●	0.75	0.030	0.063	0.079	0.375	60°	14°	2°	0.002	0.002
GTMX32080RT	R	●	●	0.8	0.031	0.063	0.079	0.375	60°	14°	2°	0.002	0.002
GTMX32095RT	R	●	●	0.95	0.037	0.063	0.079	0.375	60°	14°	2°	0.002	0.002
GTMX32100RT	R	●	●	1	0.039	0.063	0.079	0.375	60°	14°	2°	0.002	0.002
GTMX32110RT	R	●	●	1.1	0.043	0.063	0.079	0.375	60°	14°	2°	0.002	0.002
GTMX32120RT	R	●	●	1.2	0.047	0.063	0.079	0.375	60°	14°	2°	0.002	0.002
GTMX32125RT	R	●	●	1.25	0.049	0.063	0.079	0.375	60°	14°	2°	0.002	0.002
GTMX32130RT	R	●	●	1.3	0.051	0.063	0.079	0.375	60°	14°	2°	0.002	0.002
GTMX32140RT	R	●	●	1.4	0.055	0.063	0.079	0.375	60°	14°	2°	0.002	0.002
GTMX32145RT	R	●	●	1.45	0.057	0.106	0.118	0.375	60°	14°	2°	0.002	0.002
GTMX32150RT	R	●	●	1.5	0.059	0.106	0.118	0.375	60°	14°	2°	0.002	0.002
GTMX32160RT	R	●	●	1.6	0.063	0.106	0.118	0.375	60°	14°	2°	0.002	0.002
GTMX32175RT	R	●	●	1.75	0.069	0.106	0.118	0.375	60°	14°	2°	0.002	0.002
GTMX32180RT	R	●	●	1.8	0.071	0.106	0.118	0.375	60°	14°	2°	0.002	0.002
GTMX32200RT	R	●	●	2	0.079	0.106	0.118	0.375	60°	14°	2°	0.002	0.002
GTMX32250RT	R	●	●	2.5	0.098	0.106	0.118	0.375	60°	14°	2°	0.002	0.002
GTMX32300RT	R	●	●	3	0.118	0.106	0.118	0.375	60°	14°	2°	0.002	0.002
GTMX32100RT01	R	●	●	1	0.039	0.063	0.079	0.375	60°	14°	2°	0.004	0.004
GTMX32120RT01	R	●	●	1.2	0.047	0.063	0.079	0.375	60°	14°	2°	0.004	0.004
GTMX32150RT01	R	●	●	1.5	0.059	0.106	0.118	0.375	60°	14°	2°	0.004	0.004
GTMX32200RT01	R	●	●	2	0.079	0.106	0.118	0.375	60°	14°	2°	0.004	0.004
GTMX32250RT01	R	●	●	2.5	0.098	0.106	0.118	0.375	60°	14°	2°	0.004	0.004
GTMX32150RT02	R	●	●	1.5	0.059	0.106	0.118	0.375	60°	14°	2°	0.008	0.008
GTMX32200RT02	R	●	●	2	0.079	0.106	0.118	0.375	60°	14°	2°	0.008	0.008
GTMX32250RT02	R	●	●	2.5	0.098	0.106	0.118	0.375	60°	14°	2°	0.008	0.008
GTMX32300RT02	R	●	●	3	0.118	0.106	0.118	0.375	60°	14°	2°	0.008	0.008
GTMX32050LT	L	●	●	0.5	0.020	0.035	0.047	0.375	60°	14°	2°	0.002	0.002
GTMX32075LT	L	●	●	0.75	0.030	0.063	0.079	0.375	60°	14°	2°	0.002	0.002
GTMX32095LT	L	●	●	0.95	0.037	0.063	0.079	0.375	60°	14°	2°	0.002	0.002
GTMX32150LT	L	●	●	1.5	0.059	0.106	0.118	0.375	60°	14°	2°	0.002	0.002
GTMX32200LT	L	●	●	2	0.079	0.106	0.118	0.375	60°	14°	2°	0.002	0.002
GTMX32250LT	L	●	●	2.5	0.098	0.106	0.118	0.375	60°	14°	2°	0.002	0.002
GTMX32200LT01	L	●	●	2	0.079	0.106	0.118	0.375	60°	14°	2°	0.004	0.004

\* Depth of cut maximum

● : Line up

Reference pages: Toolholders → [6-33](#) - [6-36](#)

**INSERT**  
**GTMH32-E**



Right hand (R) shown.

<b>P</b>	Steel	☆
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	★
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice

Designation	HAND	Coated	CW (mm)	CW (in)	APMX* (in)	CDX (in)	IC (in)	EPSR	GAN	K8	REL (in)	RER (in)
		ZM3										
GTMH32033RE	R	●	0.33	0.013	0.012	0.024	0.375	60°	20°	2°	0.001	0.001
GTMH32043RE	R	●	0.43	0.017	0.035	0.047	0.375	60°	20°	2°	0.001	0.001
GTMH32053RE	R	●	0.53	0.021	0.035	0.047	0.375	60°	20°	2°	0.002	0.002
GTMH32075RE	R	●	0.75	0.030	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32077RE	R	●	0.77	0.030	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32095RE	R	●	0.95	0.037	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32097RE	R	●	0.97	0.038	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32100RE	R	●	1	0.039	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32103RE	R	●	1.03	0.041	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32120RE	R	●	1.2	0.047	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32125RE	R	●	1.25	0.049	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32140RE	R	●	1.4	0.055	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32145RE	R	●	1.45	0.057	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32150RE	R	●	1.5	0.059	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32175RE	R	●	1.75	0.069	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32180RE	R	●	1.8	0.071	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32200RE	R	●	2	0.079	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32225RE	R	●	2.25	0.089	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32250RE	R	●	2.5	0.098	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32275RE	R	●	2.75	0.108	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32300RE	R	●	3	0.118	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32100RE01	R	●	1	0.039	0.063	0.079	0.375	60°	20°	2°	0.004	0.004
GTMH32120RE01	R	●	1.2	0.047	0.063	0.079	0.375	60°	20°	2°	0.004	0.004
GTMH32150RE01	R	●	1.5	0.059	0.106	0.118	0.375	60°	20°	2°	0.004	0.004
GTMH32200RE01	R	●	2	0.079	0.106	0.118	0.375	60°	20°	2°	0.004	0.004
GTMH32033LE	L	●	0.33	0.013	0.012	0.024	0.375	60°	20°	2°	0.001	0.001
GTMH32043LE	L	●	0.43	0.017	0.035	0.047	0.375	60°	20°	2°	0.001	0.001
GTMH32053LE	L	●	0.53	0.021	0.035	0.047	0.375	60°	20°	2°	0.002	0.002
GTMH32075LE	L	●	0.75	0.030	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32077LE	L	●	0.77	0.030	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32095LE	L	●	0.95	0.037	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32097LE	L	●	0.97	0.038	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32100LE	L	●	1	0.039	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32103LE	L	●	1.03	0.041	0.063	0.079	0.375	60°	20°	2°	0.002	0.002

\* Depth of cut maximum

● : Line up

## GTMH32-E

<b>P</b>	Steel	☆	
<b>M</b>	Stainless	★	
<b>N</b>	Non-ferrous	★	
<b>S</b>	Superalloys		
<b>H</b>	Hard materials		

★ : First choice  
☆ : Second choice

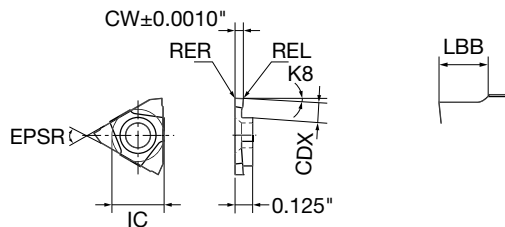
Designation	HAND	Coated		CW (mm)	CW (in)	APMX* (in)	CDX (in)	IC (in)	EPSR	GAN	K8	REL (in)	RER (in)
		ZM3											
GTMH32120LE	L	●		1.2	0.047	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32140LE	L	●		1.4	0.055	0.063	0.079	0.375	60°	20°	2°	0.002	0.002
GTMH32150LE	L	●		1.5	0.059	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32180LE	L	●		1.8	0.071	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32200LE	L	●		2	0.079	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32225LE	L	●		2.25	0.089	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32250LE	L	●		2.5	0.098	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32275LE	L	●		2.75	0.108	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32300LE	L	●		3	0.118	0.106	0.118	0.375	60°	20°	2°	0.002	0.002
GTMH32100LE01	L	●		1	0.039	0.063	0.079	0.375	60°	20°	2°	0.004	0.004
GTMH32120LE01	L	●		1.2	0.047	0.063	0.079	0.375	60°	20°	2°	0.004	0.004
GTMH32150LE01	L	●		1.5	0.059	0.106	0.118	0.375	60°	20°	2°	0.004	0.004
GTMH32200LE01	L	●		2	0.079	0.106	0.118	0.375	60°	20°	2°	0.004	0.004

\* Depth of cut maximum

● : Line up

## GTMH32-SSH

Short type / Flat top chipbreaker



<b>P</b>	Steel		
<b>M</b>	Stainless		
<b>N</b>	Non-ferrous	★	
<b>S</b>	Superalloys		
<b>H</b>	Hard materials		

★ : First choice  
☆ : Second choice

Designation	HAND	Uncoated		Mirror finish	CW (mm)	CW (in)	APMX* (in)	CDX (in)	IC (in)	EPSR	GAN	K8	LBB (in)	REL (in)	RER (in)
		KM1													
GTMH32100RSSH	R	●			1	0.039	0.063	0.079	0.375	60°	20°	2°	0.059	0.002	0.002
GTMH32150RSSH	R	●		Ⓜ	1.5	0.059	0.106	0.118	0.375	60°	20°	2°	0.059	0.002	0.002
GTMH32200RSSH	R	●			2	0.079	0.106	0.118	0.375	60°	20°	2°	0.059	0.002	0.002

\* Depth of cut maximum

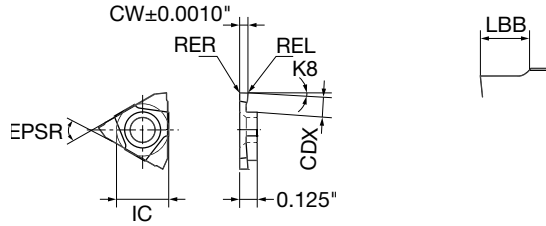
● : Line up

Reference pages: Toolholders → [6-33](#) - [6-36](#)

# INSERT

## GTMX32-SS

Short type / Flat top chipbreaker



Right hand (R) shown.

<b>P</b>	Steel	☆	
<b>M</b>	Stainless	★	
<b>N</b>	Non-ferrous	★	
<b>S</b>	Superalloys		
<b>H</b>	Hard materials		

★ : First choice  
☆ : Second choice

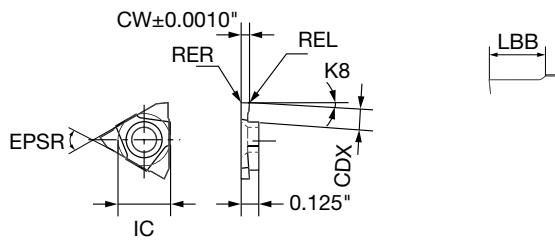
Designation	HAND	Coated		CW (mm)	CW (in)	APMX* (in)	CDX (in)	IC (in)	EPSR	GAN	K8	LBB (in)	REL (in)	RER (in)
		ZM3												
GTMX32100RSS	R	●		1	0.039	0.063	0.079	0.375	60°	0°	2°	0.059	0.002	0.002
GTMX32150RSS	R	●		1.5	0.059	0.106	0.118	0.375	60°	0°	2°	0.059	0.002	0.002
GTMX32200RSS	R	●		2	0.079	0.106	0.118	0.375	60°	0°	2°	0.059	0.002	0.002

\* Depth of cut maximum

● : Line up

## GTMX32-LS

Long type / Flat top chipbreaker



Right hand (R) shown.

<b>P</b>	Steel	☆	
<b>M</b>	Stainless	★	
<b>N</b>	Non-ferrous	★	
<b>S</b>	Superalloys		
<b>H</b>	Hard materials		

★ : First choice  
☆ : Second choice

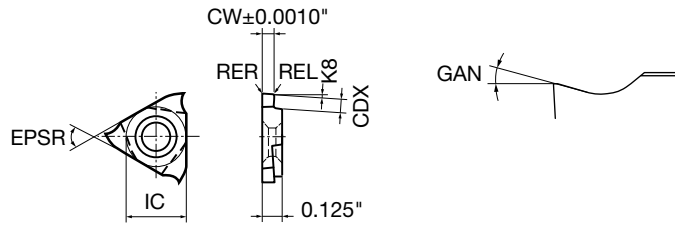
Designation	HAND	Coated		CW (mm)	CW (in)	APMX* (in)	CDX (in)	IC (in)	EPSR	GAN	K8	LBB (in)	REL (in)	RER (in)
		ZM3												
GTMX32100RLS	R	●		1	0.039	0.063	0.079	0.375	60°	0°	2°	0.118	0.002	0.002
GTMX32150RLS	R	●		1.5	0.059	0.106	0.118	0.375	60°	0°	2°	0.118	0.002	0.002
GTMX32200RLS	R	●		2	0.079	0.106	0.118	0.375	60°	0°	2°	0.118	0.002	0.002

\* Depth of cut maximum

● : Line up

## GTMH32-VT

### Side Turning



Right hand (R) shown.

P	Steel	★
M	Stainless	☆
N	Non-ferrous	★
S	Superalloys	☆
H	Hard materials	★

★ : First choice  
☆ : Second choice

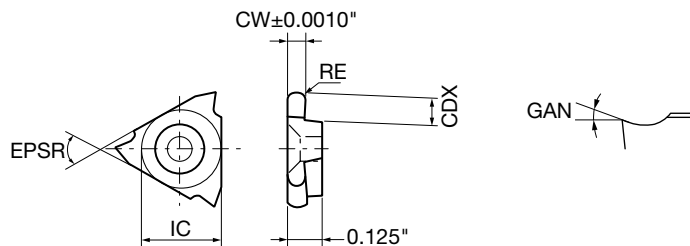
Designation	HAND	Coated		Mirror finish	CW (mm)	CW (in)	APMX* (in)	CDX (in)	IC (in)	EPSR	GAN	K8	REL (in)	RER (in)
		VM1												
GTMH32033RVT	R	●	●	●	0.33	0.013	0.010	0.024	0.375	60°	14°	2°	0	0
GTMH32043RVT	R	●	●	●	0.43	0.017	0.035	0.047	0.375	60°	14°	2°	0	0
GTMH32053RVT	R	●	●	●	0.53	0.021	0.063	0.079	0.375	60°	14°	2°	0	0
GTMH32065RVT	R	●	●	●	0.65	0.026	0.063	0.079	0.375	60°	14°	2°	0	0
GTMH32075RVT	R	●	●	●	0.75	0.030	0.063	0.079	0.375	60°	14°	2°	0	0
GTMH32080RVT	R	●	●	●	0.8	0.031	0.063	0.079	0.375	60°	14°	2°	0	0
GTMH32085RVT	R	●	●	●	0.85	0.033	0.063	0.079	0.375	60°	14°	2°	0	0
GTMH32095RVT	R	●	●	●	0.95	0.037	0.063	0.079	0.375	60°	14°	2°	0	0
GTMH32100RVT	R	●	●	●	1	0.039	0.063	0.079	0.375	60°	14°	2°	0	0
GTMH32110RVT	R	●	●	●	1.1	0.043	0.063	0.079	0.375	60°	14°	2°	0	0
GTMH32120RVT	R	●	●	●	1.2	0.047	0.063	0.079	0.375	60°	14°	2°	0	0
GTMH32130RVT	R	●	●	●	1.3	0.051	0.063	0.079	0.375	60°	14°	2°	0	0
GTMH32140RVT	R	●	●	●	1.4	0.055	0.063	0.079	0.375	60°	14°	2°	0	0
GTMH32150RVT	R	●	●	●	1.5	0.059	0.106	0.118	0.375	60°	14°	2°	0	0
GTMH32200RVT	R	●	●	●	2	0.079	0.106	0.118	0.375	60°	14°	2°	0	0

\* Depth of cut maximum

● : Line up

## GTMH32

### Full radius style



Right hand (R) shown.

P	Steel	☆
M	Stainless	★
N	Non-ferrous	★
S	Superalloys	☆
H	Hard materials	★

★ : First choice  
☆ : Second choice

Designation	HAND	Coated		CW (mm)	CW (in)	APMX* (in)	CDX (in)	IC (in)	EPSR	GAN	RE (in)
		ZM3									
GTMH32050RE025	R	●	●	0.5	0.020	0.035	0.047	0.375	60°	20°	0.010
GTMH32070RE035	R	●	●	0.7	0.028	0.063	0.079	0.375	60°	20°	0.014
GTMH32100RE05	R	●	●	1	0.039	0.063	0.079	0.375	60°	20°	0.020
GTMH32150RE075	R	●	●	1.5	0.059	0.106	0.118	0.375	60°	20°	0.030
GTMH32200RE10	R	●	●	2	0.079	0.106	0.118	0.375	60°	20°	0.039
GTMH32250RE125	R	●	●	2.5	0.098	0.106	0.118	0.375	60°	20°	0.049
GTMH32300RE15	R	●	●	3	0.118	0.106	0.118	0.375	60°	20°	0.059

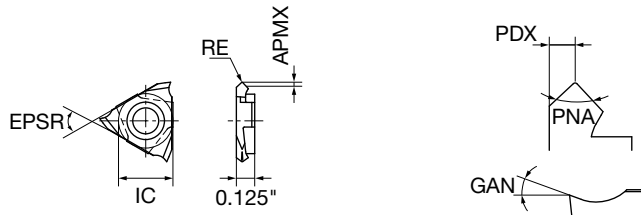
\* Depth of cut maximum

● : Line up



# GTMX32-V90

90 Degree V-style



Right hand (R) shown.

<b>P</b>	Steel	☆
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	★
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

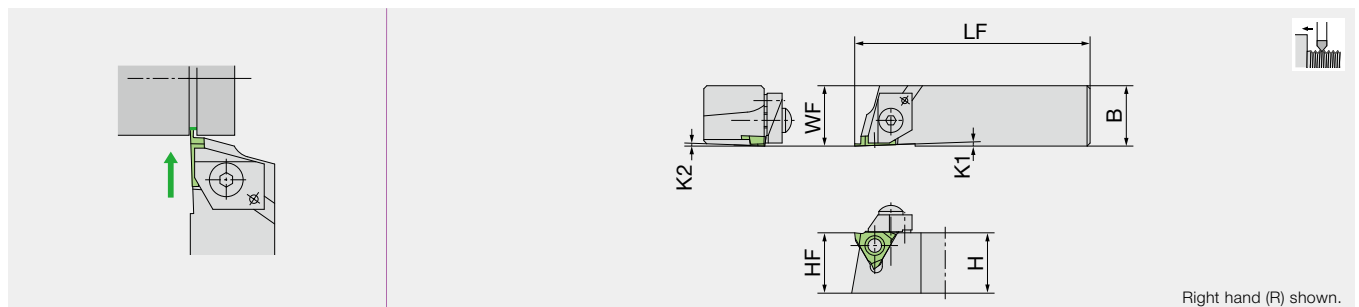
★ : First choice  
☆ : Second choice

Designation	HAND	Coated	APMX* (in)	IC (in)	EPSR	GAN	PDX (in)	PNA	RE (in)
		TM4							
GTMX32V90R005	R	●	0.014	0.375	60°	20°	0.020	90°	0.002
GTMX32V90R010	R	●	0.028	0.375	60°	20°	0.039	90°	0.004

\* Depth of cut maximum

● : Line up

# NGTN



Right hand (R) shown.

Metric	CW	H	B	LF	CDX	HF	K1	K2	WF	Insert
NGTNR161643-20	2 - 5.5	16	16	78	4.5	16	2°	2°	16	GT**43..
NGTNR161643-35	3.5 - 5.5	16	16	78	4.5	16	2°	2°	16	GT**43..
NGTNL161643-20	2 - 5.5	16	16	78	4.5	16	2°	2°	16	GT**43..
NGTNL161643-35	3.5 - 5.5	16	16	78	4.5	16	2°	2°	16	GT**43..

## SPARE PARTS

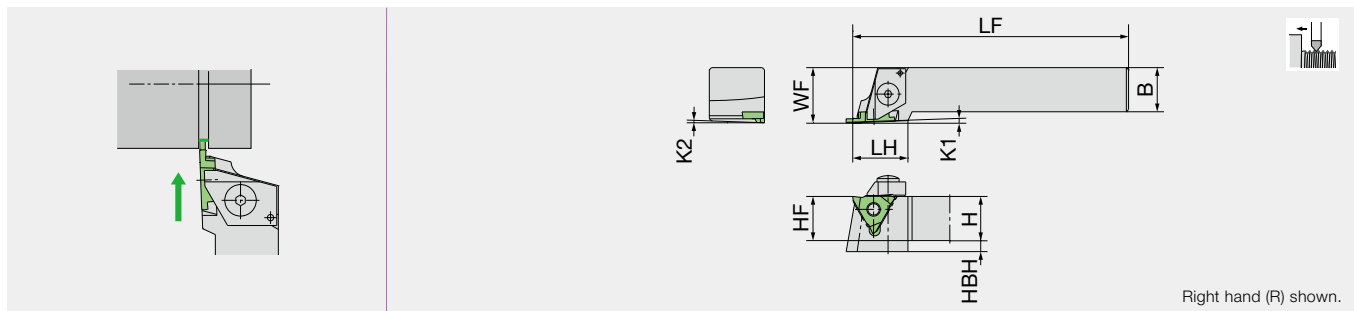


Designation	Clamp	Clamp screw	Spring	Wrench (for Clamp screw)
NGTNR/L161643-**	CPR5S	AOS-5*25	ASG-5	LW-2.5

Reference pages: GTMX32-V90: Toolholders → 6-33 - 6-36  
NGTN: Inserts → 6-45 - 6-46

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

## NGTB



Metric	CW	H	B	LF	LH	CDX	HBH	HF	K1	K2	WF	Insert
NGTBR161643-00S	1 - 5.5	16	16	100	25	3	9	16	2°	2°	20	GT**43..
NGTBR161643-20S	2 - 5.5	16	16	100	25	4.5	9	16	2°	2°	20	GT**43..
NGTBR161643-35S	3.5 - 5.5	16	16	100	25	4.5	9	16	2°	2°	20	GT**43..
NGTBR202043-00S	1 - 5.5	20	20	125	25	3	5	20	2°	2°	25	GT**43..
NGTBR202043-20S	2 - 5.5	20	20	125	25	4.5	5	20	2°	2°	25	GT**43..
NGTBR202043-35S	3.5 - 5.5	20	20	125	25	4.5	5	20	2°	2°	25	GT**43..
NGTBR252543-00S	1 - 5.5	25	25	150	25	3.5	-	25	2°	2°	30	GT**43..
NGTBR252543-20S	2 - 5.5	25	25	150	25	5.5	-	25	2°	2°	30	GT**43..
NGTBR252543-35S	3.5 - 5.5	25	25	150	25	5.5	-	25	2°	2°	30	GT**43..
NGTBR322543-20S	2 - 5.5	32	25	170	25	5.5	-	32	2°	2°	30	GT**43..
NGTBR322543-35S	3.5 - 5.5	32	25	170	25	5.5	-	32	2°	2°	30	GT**43..
NGTBL161643-00S	1 - 5.5	16	16	100	25	3	9	16	2°	2°	20	GT**43..
NGTBL161643-20S	2 - 5.5	16	16	100	25	4.5	9	16	2°	2°	20	GT**43..
NGTBL161643-35S	3.5 - 5.5	16	16	100	25	4.5	9	16	2°	2°	20	GT**43..
NGTBL202043-00S	1 - 5.5	20	20	125	25	3	5	20	2°	2°	25	GT**43..
NGTBL202043-20S	2 - 5.5	20	20	125	25	4.5	5	20	2°	2°	25	GT**43..
NGTBL202043-35S	3.5 - 5.5	20	20	125	25	4.5	5	20	2°	2°	25	GT**43..
NGTBL252543-00S	1 - 5.5	25	25	150	25	3.5	-	25	2°	2°	30	GT**43..
NGTBL252543-20S	2 - 5.5	25	25	150	25	5.5	-	25	2°	2°	30	GT**43..
NGTBL252543-35S	3.5 - 5.5	25	25	150	25	5.5	-	25	2°	2°	30	GT**43..
NGTBL322543-20S	2 - 5.5	32	25	170	25	5.5	-	32	2°	2°	30	GT**43..
NGTBL322543-35S	3.5 - 5.5	32	25	170	25	5.5	-	32	2°	2°	30	GT**43..

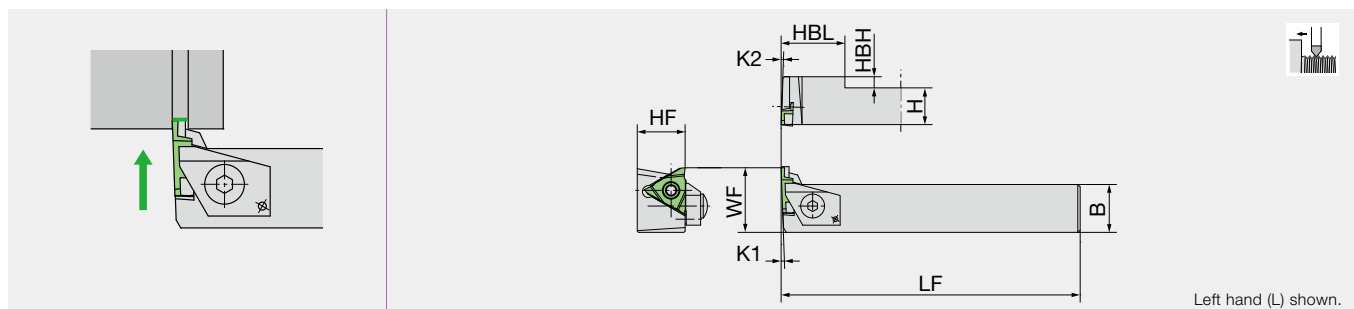
### SPARE PARTS



Designation	Clamp	Clamp screw	Spring	Wrench (for Clamp screw)
NGTBR/L161643-**	CPR5	AOS-5*25	ASG-5	LW-2.5
NGTBR/L2**	CPR6	AOS-6*30	ASG-6	LW-3
NGTBR/L3**	CPR6	AOS-6*30	ASG-6	LW-3

## NGTA

For horizontal gang style tool post



Metric	CW	H	B	LF	CDX	HBH	HBL	HF	K1	K2	WF	Insert
NGTAL161643-00S	1 - 5.5	16	16	100	3	4	20	16	2°	2°	23	GT**43..
NGTAL202043-00S	1 - 5.5	20	20	125	3	-	-	20	2°	2°	27	GT**43..

NOTE: Use a right-handed (R) insert.

### SPARE PARTS

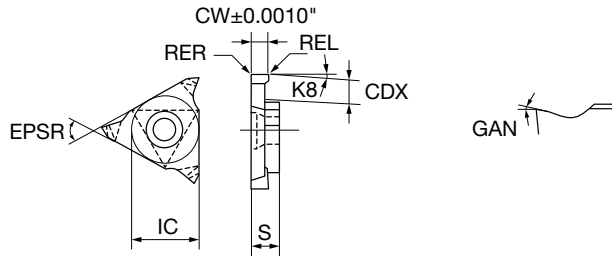


Designation	Clamp	Clamp screw	Spring	Wrench (for Clamp screw)
NGTAL161643-00S	CPL5S	AOS-5*20	ASG-5	LW-2.5
NGTAL202043-00S	CPL6	AOS-6*30	ASG-6	LW-3

Reference pages: Inserts → 6-45 - 6-46

**INSERT**

**GTMT43**



Right hand (R) shown.

<b>P</b>	Steel	☆	★
<b>M</b>	Stainless	★	☆
<b>N</b>	Non-ferrous	☆	★
<b>S</b>	Superalloys	★	☆
<b>H</b>	Hard materials	☆	★

★ : First choice  
☆ : Second choice

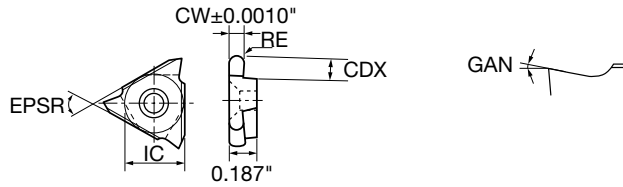
Designation	HAND	Coated		CW (mm)	CW (in)	APMX* (in)	CDX (in)	IC (in)	S (in)	EPSR	GAN	K8	REL (in)	RER (in)
		DM4	QM3											
GTMT43145R	R	●	●	1.45	0.057	0.118	0.138	0.500	0.187	60°	11°	2°	0.008	0.008
GTMT43150R	R	●	●	1.5	0.059	0.118	0.138	0.500	0.187	60°	11°	2°	0.008	0.008
GTMT43175R	R	●	●	1.75	0.069	0.118	0.138	0.500	0.187	60°	11°	2°	0.008	0.008
GTMT43185R	R	●	●	1.85	0.073	0.118	0.138	0.500	0.187	60°	11°	2°	0.008	0.008
GTMT43200R	R	●	●	2	0.079	0.118	0.138	0.500	0.187	60°	11°	2°	0.008	0.008
GTMT43230R	R	●	●	2.3	0.091	0.118	0.138	0.500	0.187	60°	11°	2°	0.008	0.008
GTMT43250R	R	●	●	2.5	0.098	0.169	0.217	0.500	0.187	60°	11°	2°	0.012	0.012
GTMT43265R	R	●	●	2.65	0.104	0.169	0.217	0.500	0.187	60°	11°	2°	0.012	0.012
GTMT43280R	R	●	●	2.8	0.110	0.169	0.217	0.500	0.187	60°	11°	2°	0.012	0.012
GTMT43300R	R	●	●	3	0.118	0.169	0.217	0.500	0.187	60°	11°	2°	0.012	0.012
GTMT43330R	R	●	●	3.3	0.130	0.169	0.217	0.500	0.187	60°	11°	2°	0.012	0.012
GTMT43350R	R	●	●	3.5	0.138	0.169	0.217	0.500	0.187	60°	11°	2°	0.012	0.012
GTMT43400R	R	●	●	4	0.157	0.169	0.217	0.500	0.187	60°	11°	2°	0.016	0.016
GTMT43450R	R	●	●	4.5	0.177	0.169	0.217	0.500	0.187	60°	11°	2°	0.016	0.016
GTMT43500R	R	●	●	5	0.197	0.169	0.217	0.500	0.227	60°	11°	2°	0.016	0.016
GTMT43550R	R	●	●	5.5	0.217	0.169	0.217	0.500	0.227	60°	11°	2°	0.016	0.016
GTMT43145L	L	●	●	1.45	0.057	0.118	0.138	0.500	0.187	60°	11°	2°	0.008	0.008
GTMT43150L	L	●	●	1.5	0.059	0.118	0.138	0.500	0.187	60°	11°	2°	0.008	0.008
GTMT43175L	L	●	●	1.75	0.069	0.118	0.138	0.500	0.187	60°	11°	2°	0.008	0.008
GTMT43185L	L	●	●	1.85	0.073	0.118	0.138	0.500	0.187	60°	11°	2°	0.008	0.008
GTMT43200L	L	●	●	2	0.079	0.118	0.138	0.500	0.187	60°	11°	2°	0.008	0.008
GTMT43230L	L	●	●	2.3	0.091	0.118	0.138	0.500	0.187	60°	11°	2°	0.008	0.008
GTMT43280L	L	●	●	2.8	0.110	0.169	0.217	0.500	0.187	60°	11°	2°	0.012	0.012
GTMT43300L	L	●	●	3	0.118	0.169	0.217	0.500	0.187	60°	11°	2°	0.012	0.012
GTMT43330L	L	●	●	3.3	0.130	0.169	0.217	0.500	0.187	60°	11°	2°	0.012	0.012
GTMT43350L	L	●	●	3.5	0.138	0.169	0.217	0.500	0.187	60°	11°	2°	0.012	0.012
GTMT43400L	L	●	●	4	0.157	0.169	0.217	0.500	0.187	60°	11°	2°	0.016	0.016
GTMT43450L	L	●	●	4.5	0.177	0.169	0.217	0.500	0.187	60°	11°	2°	0.016	0.016
GTMT43500L	L	●	●	5	0.197	0.169	0.217	0.500	0.227	60°	11°	2°	0.016	0.016
GTMT43550L	L	●	●	5.5	0.217	0.169	0.217	0.500	0.227	60°	11°	2°	0.016	0.016

\* Depth of cut maximum

● : Line up

# GTMA43

Full radius style



Right hand (R) shown.

<b>P</b>	Steel	★
<b>M</b>	Stainless	☆
<b>N</b>	Non-ferrous	
<b>S</b>	Superalloys	☆
<b>H</b>	Hard materials	☆

★ : First choice  
☆ : Second choice

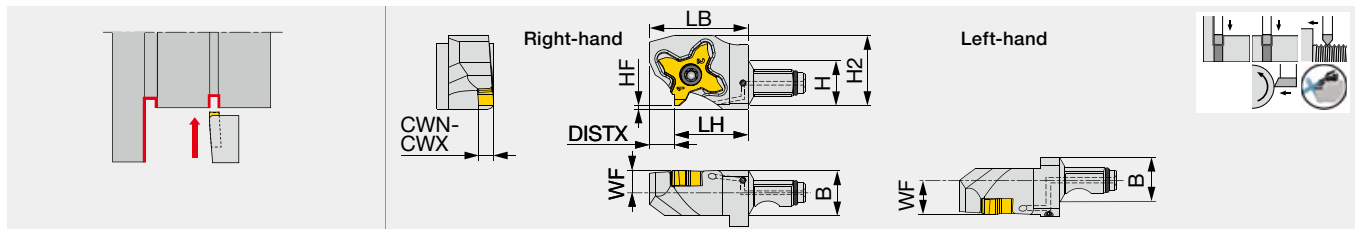
Designation	HAND	Coated	CW (mm)	CW (in)	APMX* (in)	CDX (in)	IC (in)	EPSR	GAN	RE (in)
		QM3								
GTMA43200R10R	R	●	2	0.079	0.118	0.138	0.500	60°	11°	0.039
GTMA43300R15R	R	●	3	0.118	0.177	0.217	0.500	60°	11°	0.059
GTMA43400R20R	R	●	4	0.157	0.177	0.217	0.500	60°	11°	0.079

\* Depth of cut maximum

● : Line up

## TETRAMCUT 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 (0.750")	12 (0.750")	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)
QC16-STCR/L18-Y-CHP	0.33 (0.013")	3.18 (0.125")	16 (1.000")	16 (1.000")	21 (0.827")	0 (0")	8/13 (0.315"/0.512)	27.5 (1.083")	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

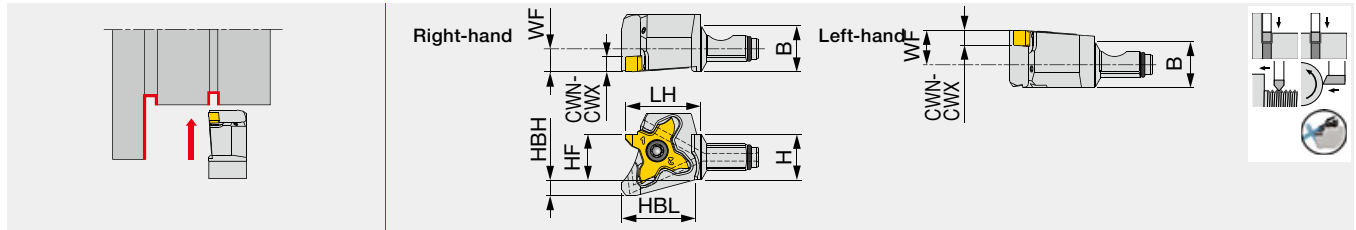
Designation	Clamping screw	Wrench	O-ring
QC12-STCR18-Y-CHP	CSTC-4L100DL	T-1008/5	ORSS-0454.5X1.0NBR70
QC12-STCL18-Y-CHP	CSTC-4L100DR	T-1008/5	ORSS-0454.5X1.0NBR70
QC16-STCR18-Y-CHP	CSTC-4L100DL	T-1008/5	ORSS-0757.5X1.0NBR70
QC16-STCL18-Y-CHP	CSTC-4L100DR	T-1008/5	ORSS-0757.5X1.0NBR70

Reference pages : GTMA43: Toolholders → **6-43, 6-44**

QC12-STCR/L-Y-CHP, QC12-STCR/L-CHP: Inserts → **6-49 - 6-55**

Shank, Accessory → **3-130 - 3-132**, Standard cutting conditions → **6-56, 6-57**

Modular head for external grooving and threading, with high pressure coolant capability



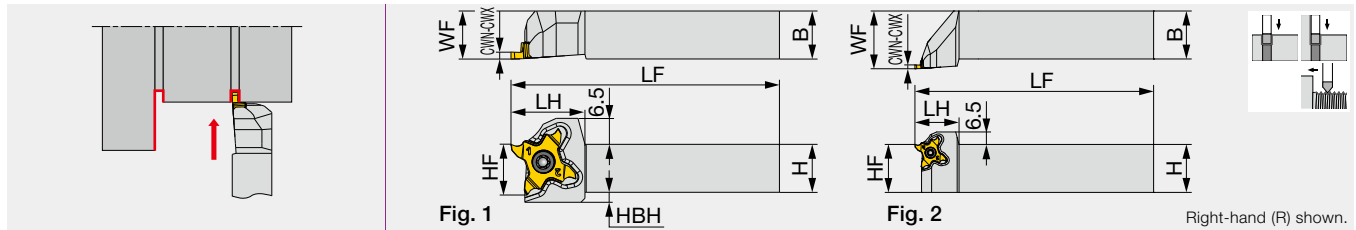
Metric	CWN	CWX	H	B	LH	HF	HBH	HBL	WF	Insert	Torque*
QC12-STCR18-CHP	0.33 (0.013")	3.18 (0.125")	12 (0.750")	12 (0.750")	19.5 (0.768")	12 (0.472")	4.2 (0.165")	19.3 (0.760")	6 (0.236")	TC*18R...	1.2 (0.89)
QC12-STCL18-CHP	0.33 (0.013")	3.18 (0.125")	12 (0.750")	12 (0.750")	21 (0.827")	12 (0.472")	4.2 (0.165")	19.3 (0.760")	9 (0.354")	TC*18L...	1.2 (0.89)
QC16-STCR18-CHP	0.33 (0.013")	3.18 (0.125")	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	0 (0")	22 (0.866")	8 (0.315")	TC*18R...	1.2 (0.89)
QC16-STCL18-CHP	0.33 (0.013")	3.18 (0.125")	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	-	-	13 (0.512")	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...).

### STCR/L-18

External grooving and threading toolholder



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)

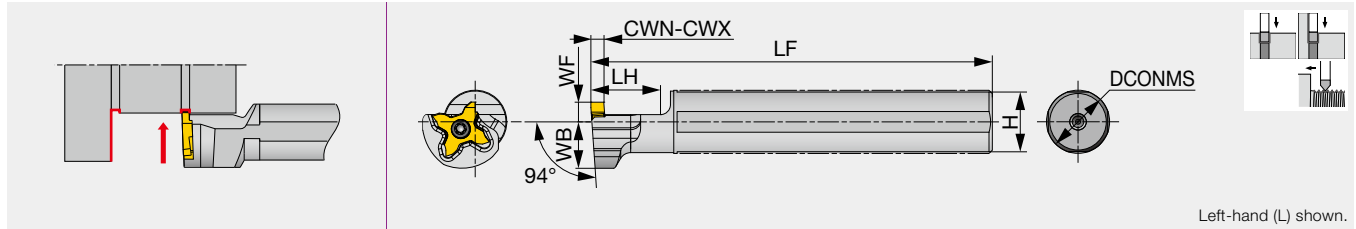
Note: Use the right-hand insert (TC\*18R...) for a right-hand holder (STCR...); the left-hand insert (TC\*18L...) for a left-hand holder (STCL...).

### 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
QC16-STCR18-CHP	CSTC-4L100DL	T-1008/5	ORSS-0757.5X1.0NBR70
QC16-STCL18-CHP	CSTC-4L100DR	T-1008/5	ORSS-0757.5X1.0NBR70
STCR**18	CSTC-4L100DL	T-1008/5	-
STCL**18	CSTC-4L100DR	T-1008/5	-

Threading pitch range: 0.8 - 3 mm

### 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

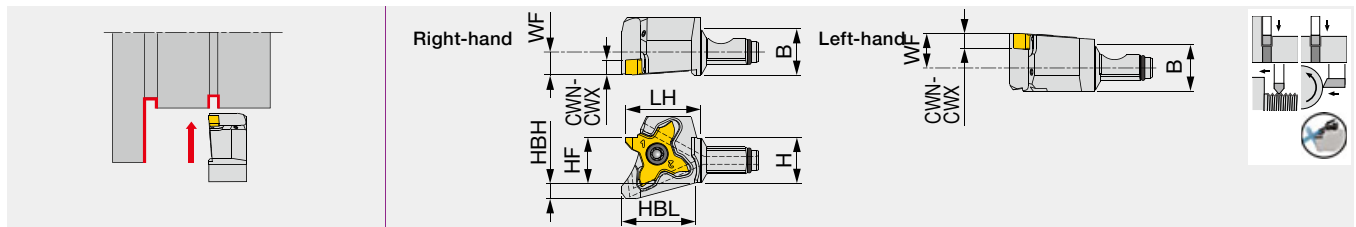
#### SPARE PARTS

Designation	Clamping screw	Wrench	Coolant plug	Wrench
JS...STCL18	CSTC-4L100DL	T-1008/5	-	-

Threading pitch range: 0.8 - 3 mm

## 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 (0.750")	12 (0.750")	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 (0.750")	12 (0.750")	21 (0.827")	12 (0.472")	4.2 (0.165")	19.3 (0.760")	9 (0.354")	TC*18L...	1.2 (0.89)
QC16-STCR18-CHP	0.33 (0.013")	3.18 (0.125")	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	0 (0")	22 (0.866")	8 (0.315")	TC*18R...	1.2 (0.89)
QC16-STCL18-CHP	0.33 (0.013")	3.18 (0.125")	16 (1.000")	16 (1.000")	21 (0.827")	16 (0.630")	-	-	13 (0.512")	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
QC16-STCR18-CHP	CSTC-4L100DL	T-1008/5	ORSS-0757.5X1.0NBR70
QC16-STCL18-CHP	CSTC-4L100DR	T-1008/5	ORSS-0757.5X1.0NBR70

Reference pages : Inserts → 6-49 - 6-55

Standard cutting conditions → 6-56, 6-57

## Selection guide for TetraMini-Cut inserts

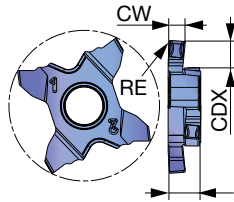
Groove width		Corner rad.		TCL18R/L (6-50 page)	TCS18R/L (6-50 page - )	TCG18R/L (6-52 page - )	TCP18R/L (6-54 page)	TCP18R/L-F (6-55 page)	Grade
CW (mm)	CW (in)	RE (mm)	RE (in)	AH7025	AH7025	AH7025	AH725	SH725	
0.013	0.33	0.002	0.05				●	●	1
0.017	0.43	0.002	0.05				●	●	
0.020	0.50	0.002	0.05				●	●	
0.030	0.75	0.002	0.05				●	●	2
0.037	0.95	0.002	0.05				●	●	
0.039	1.00	0.002	0.05					●	3
		0.004	0.1		●	●	●	●	
0.047	1.20	0.020	0.5			●			
		0.002	0.05					●	
0.049	1.25	0.004	0.1		●	●	●	●	
		0.002	0.05					●	
0.051	1.30	0.004	0.1		●	●	●	●	
		0.008	0.2		●	●	●	●	
0.055	1.40	0.008	0.2		●	●	●	●	
		0.004	0.1		●	●	●	●	
0.057	1.45	0.008	0.2		●	●	●	●	
		0.002	0.05					●	
0.059	1.50	0.004	0.1		●	●	●	●	
		0.002	0.05					●	
0.062	1.58	0.004	0.1	●	●	●	●	●	
		0.008	0.2	●	●	●	●	●	
0.063	1.60	0.031	0.79			●		5	
0.067	1.70	0.008	0.2		●	●			
0.069	1.75	0.002	0.05					●	
		0.004	0.1		●	●	●	●	
0.073	1.85	0.008	0.2		●	●	●	●	
		0.002	0.05					●	
0.077	1.95	0.008	0.2		●	●	●	6	
0.079	2.00	0.008	0.2		●	●	●		●
		0.004	0.1		●	●	●	●	
0.089	2.25	0.008	0.2		●	●	●	●	
		0.002	0.05					●	
0.091	2.30	0.008	0.2		●	●	●	7	
0.094	2.39	0.047	1.2			●			
		0.004	0.1		●	●	●	●	
0.098	2.50	0.008	0.2		●	●	●	●	
		0.012	0.3		●	●	●	●	
0.104	2.65	0.012	0.3		●	●	●	8	
0.110	2.80	0.012	0.3		●	●	●		
0.118	3.00	0.004	0.1		●	●	●	●	
		0.008	0.2		●	●	●	●	
0.125	3.18	0.012	0.3		●	●	●	●	
		0.059	1.5			●			
		0.063	1.59			●		●	

● : Line up



# INSERT

## TCL18R/L (3D chipbreaker, honed edge)



Right-hand (R) shown.

<b>P</b>	Steel	★								
<b>M</b>	Stainless	★								
<b>K</b>	Cast iron	★								
<b>N</b>	Non-ferrous									
<b>S</b>	Superalloys	★								
<b>H</b>	Hard materials									

★ : First choice

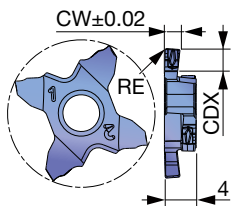


Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated										CDX (in)			
					AH7025													
TCL18R150-010	R	1.5	0.059	0.004	●													0.138
TCL18L150-010	L	1.5	0.059	0.004	●													0.138
TCL18R150-020	R	1.5	0.059	0.008	●													0.138
TCL18L150-020	L	1.5	0.059	0.008	●													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

## TCS18R (honed edge) (3D chipbreaker, honed edge)



<b>P</b>	Steel	★								
<b>M</b>	Stainless	★								
<b>K</b>	Cast iron	★								
<b>N</b>	Non-ferrous									
<b>S</b>	Superalloys	★								
<b>H</b>	Hard materials									

★ : First choice  
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated										CDX (in)			
					AH7025													
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

5 pieces per package

● : Line up



<b>P</b>	Steel	★				
<b>M</b>	Stainless	★				
<b>K</b>	Cast iron	★				
<b>N</b>	Non-ferrous					
<b>S</b>	Superalloys	★				
<b>H</b>	Hard materials					

★ : First choice  
☆ : Second choice

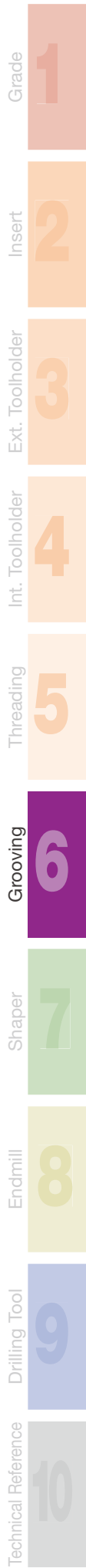
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated					CDX (in)	
					AH7025						
TCS18R125-020	R	1.25	0.049	0.008	●						0.079
TCS18L125-020	L	1.25	0.049	0.008	●						0.079
TCS18R130-020	R	1.3	0.051	0.008	●						0.138
TCS18L130-020	L	1.3	0.051	0.008	●						0.138
TCS18R140-010	R	1.4	0.055	0.004	●						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

5 pieces per package

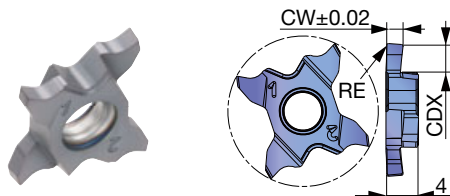
● : Line up

Reference pages : Toolholders → 6-46 - 6-48, Standard cutting conditions → 6-56

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



# TCG18R/L (honed edge)



<b>P</b>	Steel	★
<b>M</b>	Stainless	★
<b>K</b>	Cast iron	★
<b>N</b>	Non-ferrous	
<b>S</b>	Superalloys	★
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice



Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated		CDX (in)
					AH7025	NS9530	
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 → 6-46 - 6-48, Standard cutting conditions → 6-56

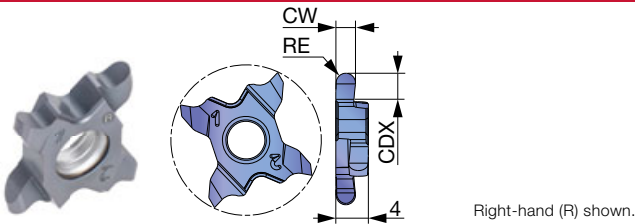
P	Steel	★						
M	Stainless	★						
K	Cast iron	★						
N	Non-ferrous							
S	Superalloys	★						
H	Hard materials							

★ : First choice  
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated				CDX (in)
					AH7025				
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)



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				
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

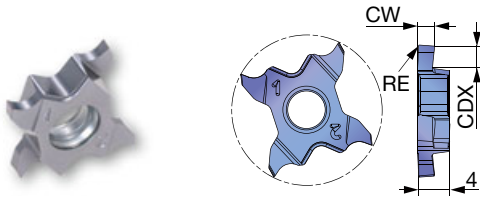
5 pieces per package  
● : Line up

Reference pages : Toolholders → 6-46 - 6-48, Standard cutting conditions → 6-56

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

# INSERT

## TCP18R/L (lightly honed edge)



<b>P</b>	Steel	★
<b>M</b>	Stainless	★
<b>K</b>	Cast iron	★
<b>N</b>	Non-ferrous	
<b>S</b>	Superalloys	★
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice



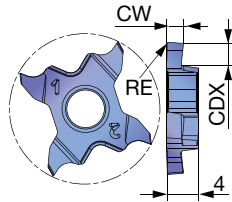
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated					CDX (in)	
					AH725						
TCP18R033-005	R	0.33	0.013	0.002	●						0.031
TCP18L033-005	L	0.33	0.013	0.002	●						0.031
TCP18R043-005	R	0.43	0.017	0.002	●						0.047
TCP18L043-005	L	0.43	0.017	0.002	●						0.047
TCP18R050-005	R	0.50	0.020	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

5 pieces per package

● : Line up

Reference pages : Toolholders → 6-46 - 6-48, Standard cutting conditions → 6-56

# TCP18R/L-F (sharp edge)



<b>P</b>	Steel	★				
<b>M</b>	Stainless	★				
<b>K</b>	Cast iron	★				
<b>N</b>	Non-ferrous					
<b>S</b>	Superalloys	★				
<b>H</b>	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

5 pieces per package

● : Line up

Reference pages : Toolholders → 6-46 - 6-48, Standard cutting conditions → 6-56

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

## STANDARD CUTTING CONDITIONS

### TCS18R (3D chipbreaker) , TCG18R/L (honed edge)

ISO	Workpiece materials	Grades	Cutting speed Vc (sfm)	Feed: f (ipr)	
				TCG	TCS
<b>P</b>	Low carbon steel 1015, 1020, etc.	AH7025	262 - 591	0.001 - 0.005	0.001 - 0.006
	Carbon steels, Alloy steel 1055, 4140, etc.	AH7025	262 - 591	0.001 - 0.005	0.001 - 0.006
	Prehardened steel NAK80, PX5, etc.	AH7025	262 - 591	0.001 - 0.005	0.001 - 0.006
<b>M</b>	Stainless steel 304SS, 316SS, etc.	AH7025	164 - 394	0.001 - 0.005	0.001 - 0.006
<b>K</b>	Gray cast iron Class 25, Class 30, etc.	AH7025	164 - 591	0.001 - 0.005	0.001 - 0.006
	Ductile cast iron 60-40-18, 80-55-06, etc.	AH7025	164 - 591	0.001 - 0.005	0.001 - 0.006
<b>S</b>	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 262	0.001 - 0.005	0.001 - 0.006
	Superalloys Inconel718, etc.	AH7025	66 - 197	0.001 - 0.005	0.001 - 0.006



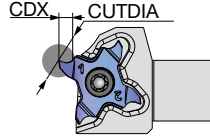
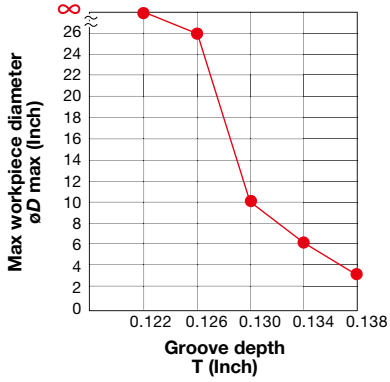
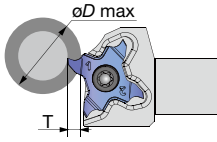
### TCL18R (3D chipbreaker), TCG18R/L (Full R, honed edge)

ISO	Workpiece materials	Grades	Cutting speed Vc (sfm)	Feed: f (ipr)	
				TCL18	TCG18
<b>P</b>	Low carbon steel 1015, 1020, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006
	Carbon steels, Alloy steel 1055, 4140, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006
	Prehardened steel NAK80, PX5, etc.	AH7025	262 - 591	0.001 - 0.005	0.002 - 0.006
<b>M</b>	Stainless steel 304SS, 316SS, etc.	AH7025	164 - 394	0.001 - 0.005	0.002 - 0.006
<b>K</b>	Gray cast iron Class 25, Class 30, etc.	AH7025	164 - 591	0.001 - 0.005	0.002 - 0.006
	Ductile cast iron 60-40-18, 80-55-06, etc.	AH7025	164 - 591	0.001 - 0.005	0.002 - 0.006
<b>S</b>	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 262	0.001 - 0.005	0.002 - 0.006
	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)
<b>P</b>	Low carbon steel 1015, 1020, etc.	First choice	SH725	262 - 591	0.001 - 0.004
		Toughness	AH725	262 - 591	0.001 - 0.004
	Carbon steels, Alloy steel 1055, 4140, etc.	First choice	SH725	262 - 591	0.001 - 0.004
		Toughness	AH725	262 - 591	0.001 - 0.004
	Prehardened steel NAK80, PX5, etc.	First choice	SH725	262 - 591	0.001 - 0.004
		Toughness	AH725	262 - 591	0.001 - 0.004
<b>M</b>	Stainless steel 304SS, 316SS, etc.	First choice	SH725	164 - 394	0.001 - 0.004
		Toughness	AH725	164 - 394	0.001 - 0.004
<b>K</b>	Gray cast iron Class 25, Class 30, etc.	First choice	AH725	164 - 591	0.001 - 0.004
		Sharpness	SH725	164 - 591	0.001 - 0.004
	Ductile cast iron 60-40-18, 80-55-06, etc.	First choice	AH725	164 - 591	0.001 - 0.004
		Sharpness	SH725	164 - 591	0.001 - 0.004
<b>S</b>	Titanium alloys Ti-6Al-4V, etc.	First choice	SH725	98 - 262	0.001 - 0.004
		Toughness	AH725	98 - 262	0.001 - 0.004
	Superalloys Inconel718, etc.	First choice	SH725	66 - 197	0.001 - 0.004
		Toughness	AH725	66 - 197	0.001 - 0.004

# PRECAUTIONS OF PROCESSING



**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.

Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

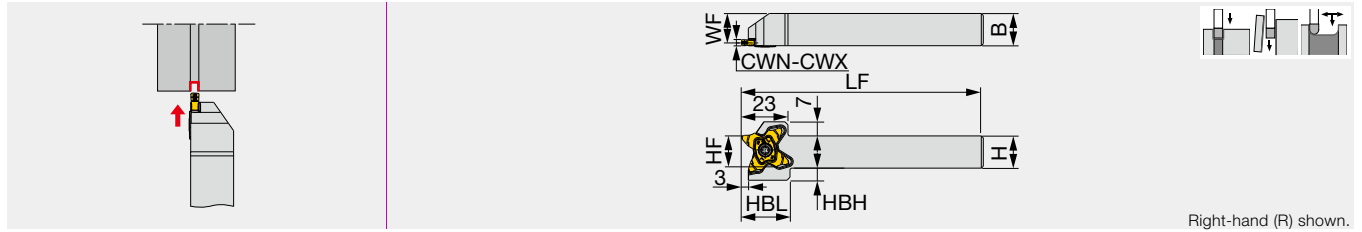
Drilling Tool

9

Technical Reference

10

### External grooving toolholder



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	0.750	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

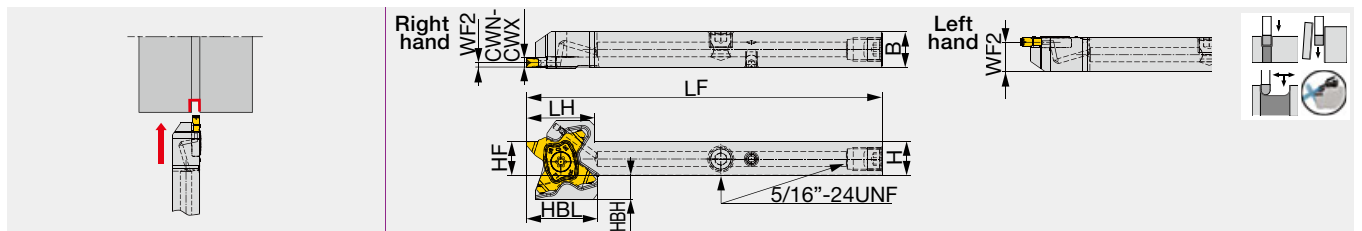
Torque: Recommended clamping torque: lbs-ft (\*N·m)



### STCR/L1212-27-CHP

Direct connection

Grooving and parting-off toolholder. High pressure coolant capability.



Inch	CWN	CWX	H	B	LF	LH	HF	WF2 <sup>(1)</sup>	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 <sup>(1)</sup>	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



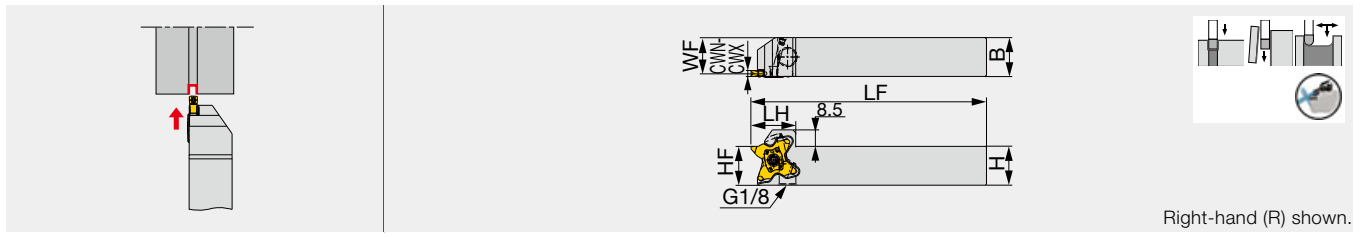
Designation	Screw	Wrench
STCR****-27, STCR...-27-CHP	SR16-212-01397L	T-2010/5
STCL****-27, STCL...-27-CHP	SR16-212-01397	T-2010/5

Reference pages : STCR/L-27, STCR/L1212-27-CHP, STCR/L2020-27-CHP:

Inserts → 6-59 - 6-63, Standard cutting conditions → 6-63



External grooving and parting-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

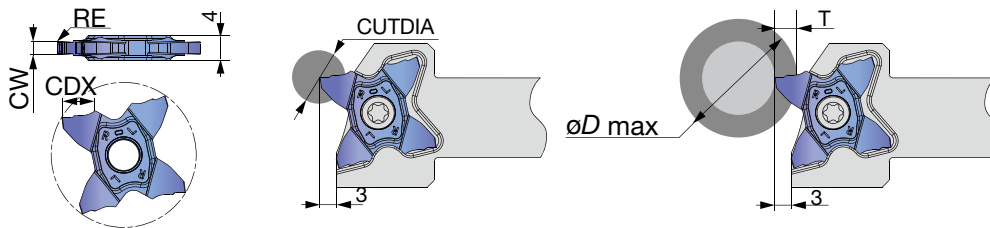
Torque\*: Recommended clamping torque (N·m)

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



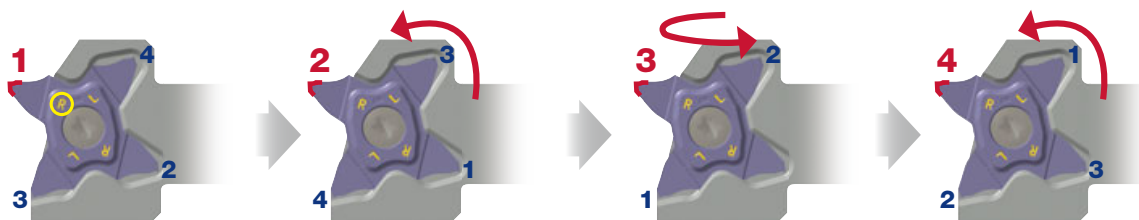
P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice  
☆ : Second choice

Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated		CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)									
				AH725				T <sub>±0.118</sub>	T <sub>±0.138</sub>	T <sub>±0.157</sub>	T <sub>±0.177</sub>	T <sub>±0.197</sub>	T <sub>±0.217</sub>	T <sub>±0.224</sub>	T <sub>±0.236</sub>	T <sub>±0.244</sub>	T <sub>±0.252</sub>
								●	■	∞	23.622	11.024	7.087	5.118	1.969	1.378	-
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

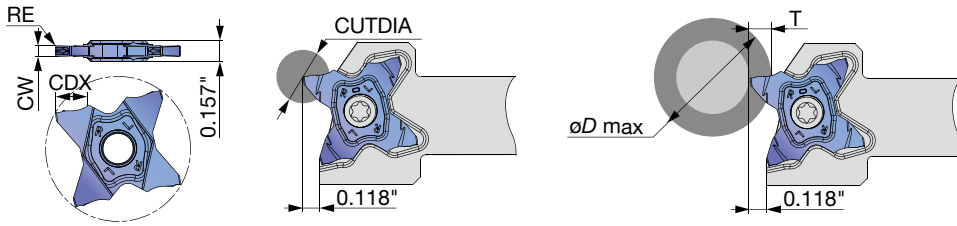
3. Flip over the insert

4. Rotate the insert

Reference pages : Toolholders → 6-58, 6-59, Standard cutting conditions → 6-63

# 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



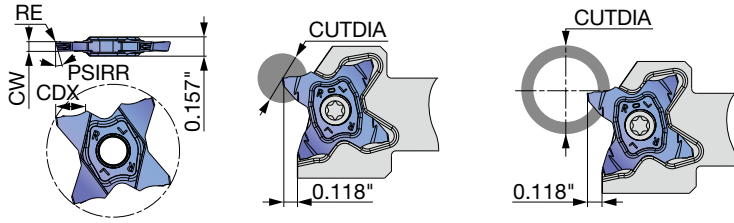
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)												
							T≤0.039	T≤0.079	T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252	
							TCS27-050-000	0.5	0.020	0	●	0.039	0.079	∞	-	-	-	-	-
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 → 6-58, 6-59, Standard cutting conditions → 6-63

# 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

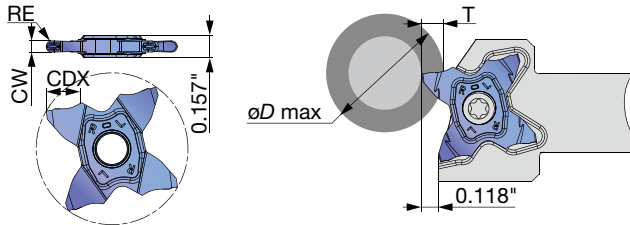
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated		CDX (in)	PSIRL	PSIRR	Max. parting off dia. CUTDIA (in)	
					AH725					Solid bar	Tube
TCS27-100-15R	R	1	0.039	0.0024	●		0.138	0°	15°	0.276	23.622
TCS27-100-15L	L	1	0.039	0.0024	●		0.138	15°	0°	0.276	23.622
TCS27-150-6R	R	1.5	0.059	0.0024	●		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		CDX (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)										
				AH725			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
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

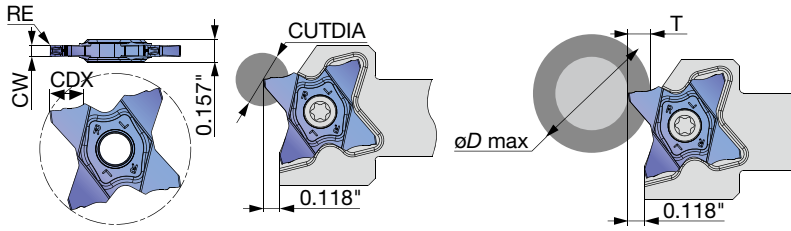
● : Line up

Reference pages : Toolholders → 6-58, 6-59, Standard cutting conditions → 6-63

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# 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



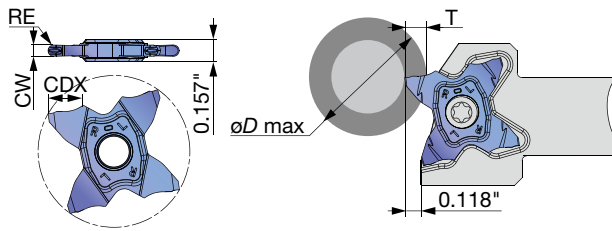
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated		CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)											
				AH725				T≤0.039	T≤0.079	T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
								∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞	∞
TCM27-150-010	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 → 6-58, 6-59, Standard cutting conditions → 6-63

# INSERT - FOR GROOVING AND PROFILING

## TCM27 (Full R)



<b>P</b>	Steel	★	
<b>M</b>	Stainless	★	
<b>K</b>	Cast iron	★	
<b>N</b>	Non-ferrous		
<b>S</b>	Superalloys	★	
<b>H</b>	Hard materials		

★ : First choice  
☆ : Second 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 (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
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

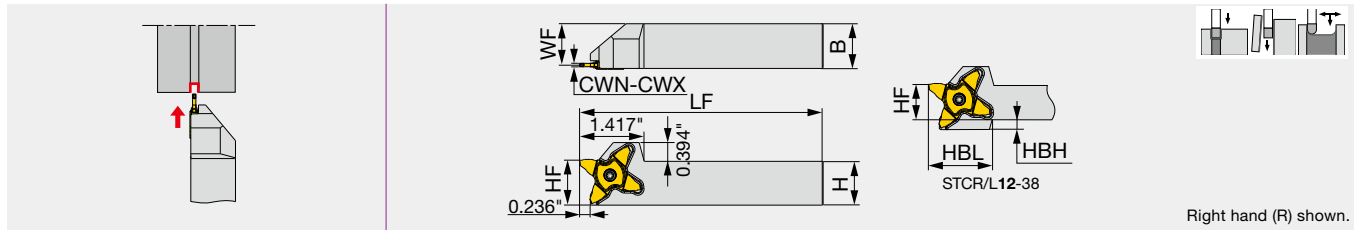
## STANDARD CUTTING CONDITIONS

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	
<b>P</b>	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
<b>M</b>	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
<b>K</b>	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
<b>S</b>	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 → 6-58, 6-59

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

### 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

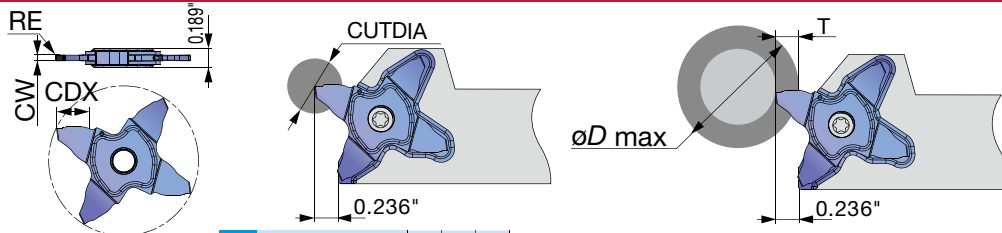
Torque: Recommended clamping torque: lbs-ft (\*N-m)

### 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		CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max)					
				AH7025				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

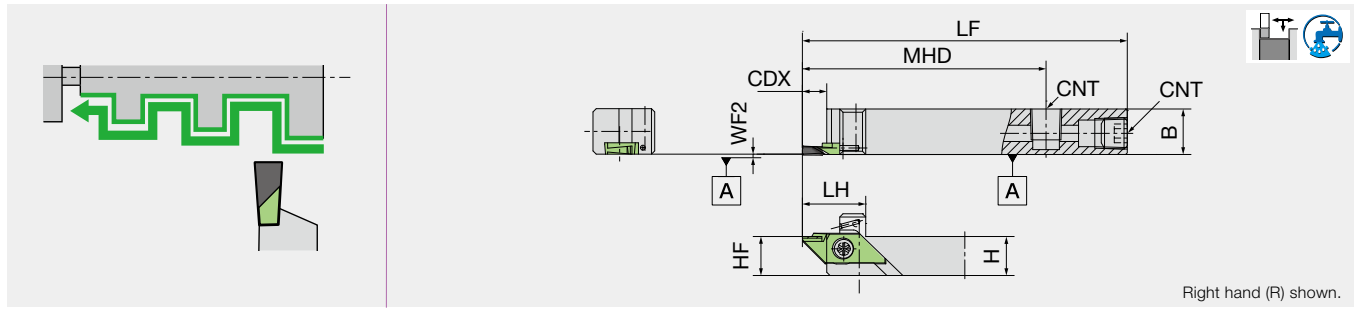
● : Line up

## 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	

# GTPA-OH

Coolant through

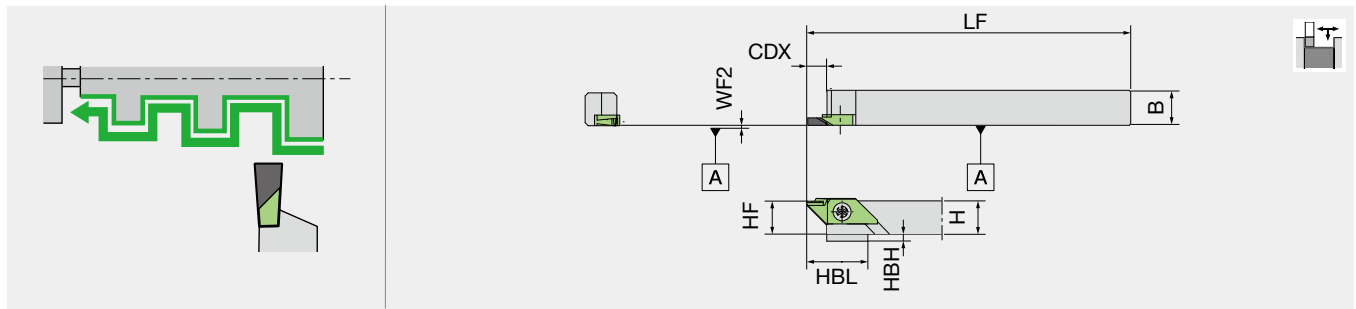


Metric	CW	H	B	LF	LH	CDX	HF	MHD	WF2	CNT	Insert
GTPAR1214H-OH	2 - 2.5	12	14	100	19.5	7.5	12	75	0.1	Rc1/8	GTPA..

**SPARE PARTS**

Designation	Clamp screw	Screw (for CNT)	Wrench (for Clamp screw)
GTPAR1214H-OH	LRIS-4*12PW	SPR1/8	CLR-15S

# GTPA



Metric	CW	H	B	LF	HF	CDX	HBH	HBL	WF2	Insert
GTPAR1010	2 - 2.5	10	10	120	10	7.5	2	19.5	0.1	GTPA..
GTPAR1212	2 - 2.5	12	12	120	12	7.5	-	-	0.1	GTPA..
GTPAR1616	2 - 2.5	16	16	120	16	7.5	-	-	0.1	GTPA..

**SPARE PARTS**

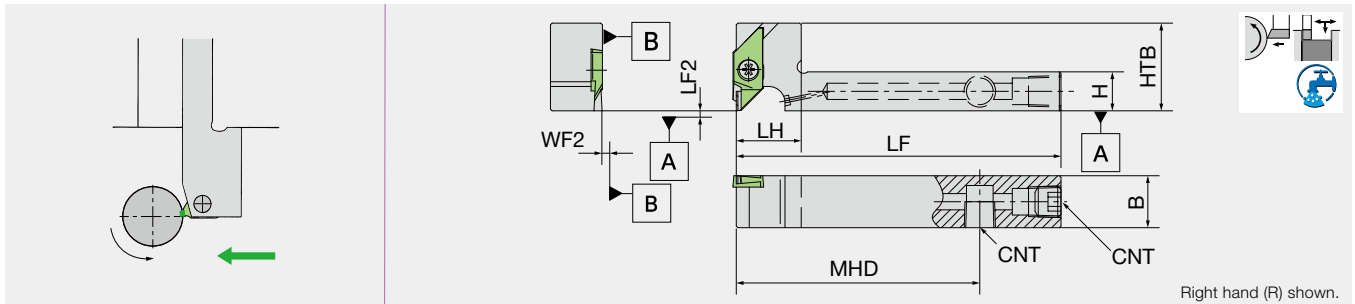
Designation	Clamp screw	Wrench (for Clamp screw)
GTPAR1010	LRIS-4*10PW	CLR-15S
GTPAR1212	LRIS-4*12PW	CLR-15S
GTPAR1616	LRIS-4*12PW	CLR-15S

Reference pages : Inserts → 6-67

Grade 1  
 Insert 2  
 Ext. Toolholder 3  
 Int. Toolholder 4  
 Threading 5  
 Grooving 6  
 Shaper 7  
 Endmill 8  
 Drilling Tool 9  
 Technical Reference 10

# Y-GTPA-OH

## Y-axis coolant through



Right hand (R) shown.

Metric	CW	H	B	LH	LF	HTB	LF2	MHD	WF2	CNT	Insert
Y-GTPAR1014FSS-OH	2 - 2.5	10	14	15	80	27	0	55	0.1	M6*1	GTPA..
Y-GTPAR1216HS-OH	2 - 2.5	12	16	20	100	27	0	75	0.1	Rc1/8	GTPA..
Y-GTPAR1616H-OH	2 - 2.5	16	16	25	100	27	0	75	0.1	Rc1/8	GTPA..

NOTE: Use a right-handed (R) insert.

NOTE: There is a risk of interference with the Y-axis holder depending on the combination of the maximum workpiece diameter and machining diameter. →10-1

### SPARE PARTS

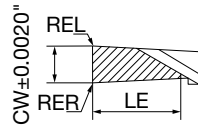
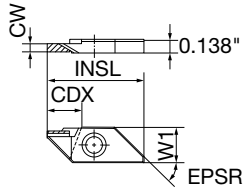


Designation	Clamp screw	Screw (for CNT)	Wrench (for Clamp screw)
Y-GTPAR1014FSS-OH	LRIS-4*12PW	SS0605SC	CLR-15S
Y-GTPAR1216HS-OH	LRIS-4*12PW	SPR1/8	CLR-15S
Y-GTPAR1616H-OH	LRIS-4*12PW	SPR1/8	CLR-15S

Reference pages : Inserts → 6-67



**INSERT**  
**GTPA.. PCD**



Right hand (R) shown.

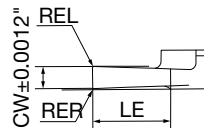
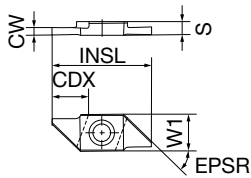
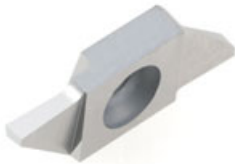
P	Steel		
M	Stainless		
N	Non-ferrous	★	
S	Superalloys		
H	Hard materials		

★ : First choice  
☆ : Second choice

Designation	HAND	PCD										
		PD1	CW (mm)	CW (in)	APMX (in)	CDX (in)	INSL (in)	W1 (in)	EPSR	LE (in)	REL (in)	RER (in)
GTPA20FRN01	R	●	2	0.079	0.236	0.362	(0.984)	0.370	45°	0.276	0.004MAX	0.004MAX
GTPA20FRN01-SH	R	●	2	0.079	0.118	0.362	1.012	0.370	45°	0.157	0.004MAX	0.004MAX
GTPA25FRN01	R	●	2.5	0.098	0.236	0.362	(0.984)	0.370	45°	0.276	0.004MAX	0.004MAX
GTPA25FRN01-081	R	●	2.5	0.098	0.118	0.362	1.012	0.370	45°	0.157	0.004MAX	0.004MAX

● : Line up

**GTPA.. Carbide**



Right hand (R) shown.

P	Steel		
M	Stainless		
N	Non-ferrous	★	
S	Superalloys		
H	Hard materials		

★ : First choice  
☆ : Second choice

Designation	HAND	Uncoated										
		KM1	CW (mm)	CW (in)	APMX (in)	CDX (in)	INSL (in)	W1 (in)	EPSR	LE (in)	REL (in)	RER (in)
GTPA20FRN01	R	●	2	0.079	0.236	0.362	(0.984)	0.370	45°	0.276	0.004MAX	0.004MAX
GTPA25FRN01	R	●	2.5	0.098	0.236	0.362	(0.984)	0.370	45°	0.276	0.004MAX	0.004MAX

● : Line up

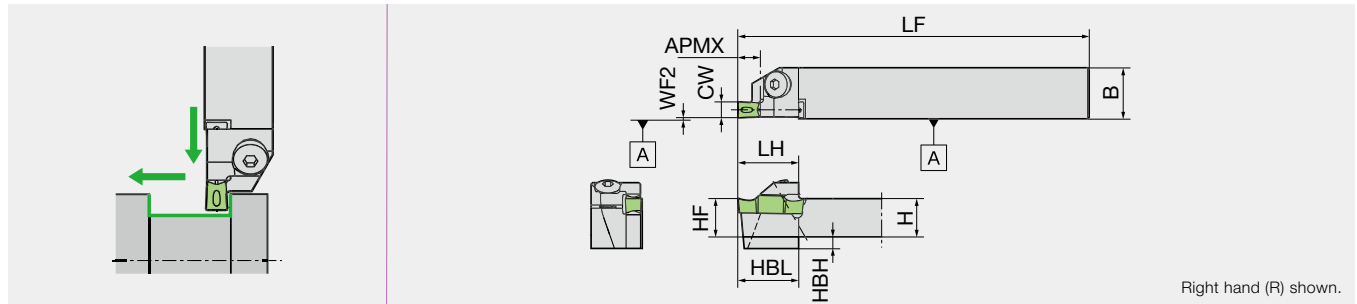
Reference pages : Toolholders → 6-65, 6-66

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



# SCRUM DUO GWPG(M).. series/Toolholder

## GTWP



Right hand (R) shown.



Inch	CW	H	B	LF	LH	APMX	HBH	HBL	HF	WF2	Insert
GTWPR08-IN-3D07	0.118	0.500	0.630	4.724	0.748	-	-	-	0.500	0.012	GWPG(M)300..
GTWPR08-IN-4E07	0.157	0.500	0.630	4.724	0.748	-	-	-	0.500	0.012	GWPG(M)300..
GTWPR10-IN-3D09	0.118	0.625	0.630	4.724	0.866	-	-	-	0.625	0.012	GWPG(M)300..
GTWPR10-IN-4E09	0.157	0.625	0.630	4.724	0.866	-	-	-	0.625	0.012	GWPG(M)400..
Metric	CW	H	B	LF	LH	APMX	HBH	HBL	HF	WF2	Insert
GTWPR1016-3D07	3	10	16	120	19	7	2	18	10	0.3	GWPG(M)300..
GTWPR1216-3D07	3	12	16	120	19.5	7	-	-	12	0.3	GWPG(M)300..
GTWPR1616-3D09	3	16	16	120	22	9	-	-	16	0.3	GWPG(M)300..
GTWPR1016-4E07	4	10	16	120	19	7	2	18	10	0.3	GWPG(M)400..
GTWPR1216-4E07	4	12	16	120	19.5	7	-	-	12	0.3	GWPG(M)400..
GTWPR1616-4E09	4	16	16	120	22	9	-	-	16	0.3	GWPG(M)400..
GTWPR1016-5F07	5	10	16	120	19	7	2	18	10	0.3	GWPG(M)500..
GTWPR1216-5F07	5	12	16	120	19.5	7	-	-	12	0.3	GWPG(M)500..
GTWPR1616-5F09	5	16	16	120	22	9	-	-	16	0.3	GWPG(M)500..
GTWPR1020-6G07	6	10	20	120	22	7	2	21	10	0.3	GWPG(M)600..
GTWPR1220-6G07	6	12	20	120	22.5	7	-	-	12	0.3	GWPG(M)600..
GTWPR1620-6G09	6	16	20	120	25	9	-	-	16	0.3	GWPG(M)600..
GTWPL1216-3D07	3	12	16	120	19.5	7	-	-	12	0.3	GWPG(M)300..
GTWPL1616-3D09	3	16	16	120	22	9	-	-	16	0.3	GWPG(M)300..
GTWPL1216-4E07	4	12	16	120	19.5	7	-	-	12	0.3	GWPG(M)400..
GTWPL1616-4E09	4	16	16	120	22	9	-	-	16	0.3	GWPG(M)400..
GTWPL1216-5F07	5	12	16	120	19.5	7	-	-	12	0.3	GWPG(M)500..
GTWPL1616-5F09	5	16	16	120	22	9	-	-	16	0.3	GWPG(M)500..
GTWPL1620-6G09	6	16	20	120	25	9	-	-	16	0.3	GWPG(M)600..

Note: Max. Bar Dia.  $\phi 42$

### SPARE PARTS

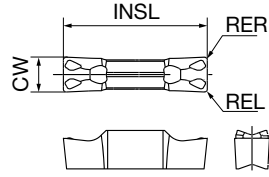


Designation	Clamp screw	Wrench (for Clamp screw)
GTWPR08-IN-3D07	AOB-5*14	LW-3S
GTWPR08-IN-4E07	AOB-5*14	LW-3S
GTWPR10-IN-3D09	AOB-5*16	LW-3S
GTWPR10-IN-4E09	AOB-5*16	LW-3S
GTWPR10**	AOB-5*14	LW-3S
GTWPR/12L**	AOB-5*16	LW-3S
GTWPR/L16**	AOB-5*16	LW-3S

# INSERT

## GWPG(M)-GW with chipbreaker

Best for side turning



<b>P</b>	Steel	★
<b>M</b>	Stainless	☆
<b>N</b>	Non-ferrous	☆
<b>S</b>	Superalloys	★
<b>H</b>	Hard materials	☆

★ : First choice  
☆ : Second choice

Designation	Coated	CW (mm)	CW (in)	INSL (in)	REL (in)	RER (in)
	DM4					
GWPG300N02D-GW	●	3	0.118	0.811	0.008	0.008
GWPG300N04D-GW	●	3	0.118	0.811	0.016	0.016
GWPG400N02E-GW	●	4	0.157	0.811	0.008	0.008
GWPG400N04E-GW	●	4	0.157	0.811	0.016	0.016
GWPG400N08E-GW	●	4	0.157	0.811	0.031	0.031
GWPG500N02F-GW	●	5	0.197	0.811	0.008	0.008
GWPG500N04F-GW	●	5	0.197	0.811	0.016	0.016
GWPG500N08F-GW	●	5	0.197	0.811	0.031	0.031
GWPG600N02G-GW	●	6	0.236	1.008	0.008	0.008
GWPG600N04G-GW	●	6	0.236	1.008	0.016	0.016
GWPG600N08G-GW	●	6	0.236	1.008	0.031	0.031
GWPM300N04D-GW	●	3	0.118	0.811	0.016	0.016
GWPM400N04E-GW	●	4	0.157	0.811	0.016	0.016
GWPM500N04F-GW	●	5	0.197	0.811	0.016	0.016
GWPM600N04G-GW	●	6	0.236	1.008	0.016	0.016

GWPG.. : Outside ground  
Width tolerance ±0.025  
GWPM.. : Full-molded  
Width tolerance ±0.05

● : Line up

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

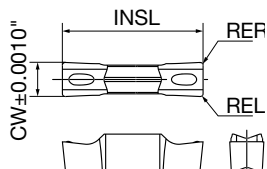
Drilling Tool

Technical Reference

**INSERT**

**GWPG-GV with chipbreaker**

Less tool pressure design



<b>P</b> Steel	★
<b>M</b> Stainless	☆
<b>N</b> Non-ferrous	
<b>S</b> Superalloys	★
<b>H</b> Hard materials	☆

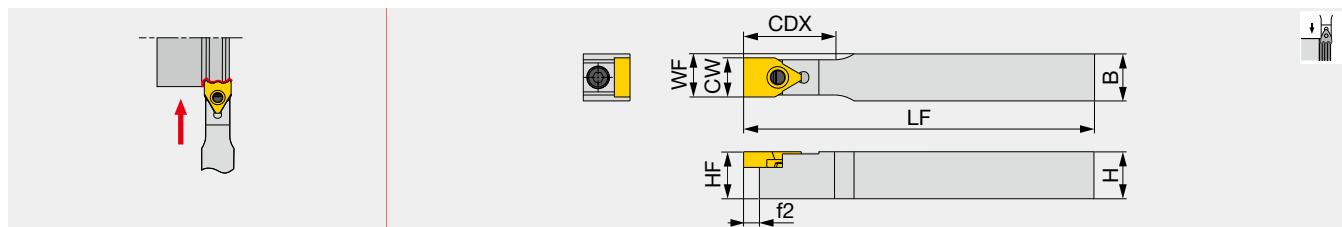
★ : First choice  
☆ : Second choice

Designation	Coated	CW (mm)	CW (in)	INSL (in)	REL (in)	RER (in)
	DM4					
GWPG300N02D-GV	●	3	0.118	0.811	0.008	0.008
GWPG300N04D-GV	●	3	0.118	0.811	0.016	0.016
GWPG400N02E-GV	●	4	0.157	0.811	0.008	0.008
GWPG400N04E-GV	●	4	0.157	0.811	0.016	0.016
GWPG500N02F-GV	●	5	0.197	0.811	0.008	0.008
GWPG500N04F-GV	●	5	0.197	0.811	0.016	0.016
GWPG600N02G-GV	●	6	0.236	1.008	0.008	0.008
GWPG600N04G-GV	●	6	0.236	1.008	0.016	0.016

● : Line up

**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)

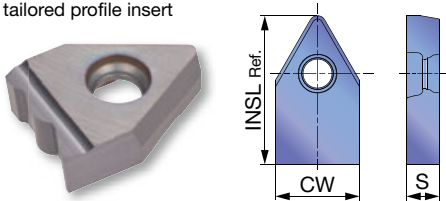
SPARE PARTS	Lever	Clamping screw	Spring	Wrench
Designation	FCL4	FCS3	BP-5	P-2.5
FPGN****-10T..., 15T...	FCL8	FCS6	BP-9	P-5
FPGN****-20T..., 25T...				

Reference pages : GWPG-GV with chipbreaker: Toolholders → 6-68

## INSERT

### PSGB (Blank for wide profile grooving inserts\*)

Specially tailored profile insert



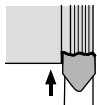
<b>P</b> Steel	☆	★					
<b>M</b> Stainless		★					
<b>K</b> Cast iron	★						
<b>N</b> Non-ferrous	★						
<b>S</b> Superalloys	☆						
<b>H</b> Hard materials							

★ : First choice  
☆ : Second choice

Designation	CW±0.025 (mm)	CW±0.001 (in)	Uncoated				INSL (in)	S (in)
			TH10	UX30				
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

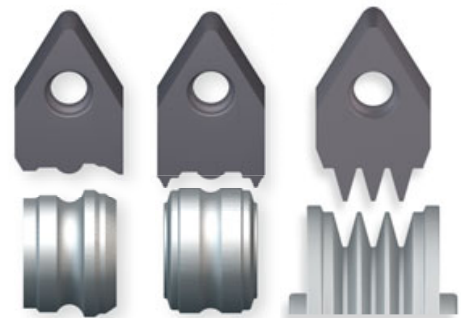
## STANDARD CUTTING CONDITIONS



Wide profile grooving

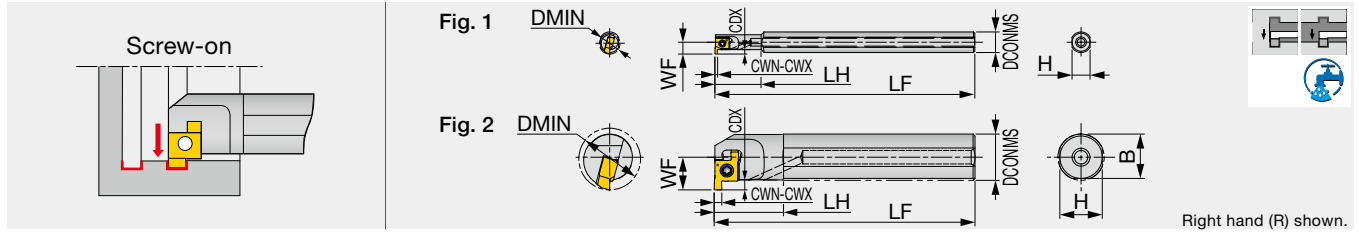
ISO	Workpiece material	Hardness (HB)	Grade	Cutting speed Vc (sfm)
<b>P</b>	Steel 1045, 1055, etc.	< 200	UX30	165 - 490
	Alloy steel 4140, 8620, etc.	< 300	UX30	165 - 390
<b>M</b>	Stainless steel 304SS, 316SS, 17-4 PH, etc.	< 200	UX30	165 - 390
<b>K</b>	Gray cast iron Class 25, Class 30, etc.	-	TH10	165 - 490
	Ductile cast iron 60-40-18, 60-55-06, etc.	-	TH10	165 - 390
<b>N</b>	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.



Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

Toolholders for internal grooving, with through coolant



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	1
A10K-SNGR07-D120	Steel	1	2	12	1.5	10	9	-	125	29	6.8	7GMR..., 7GR...	1	1
A10K-SNGR08-D140	Steel	1.5	3.5	14	2	10	9	-	125	15	7.6	8GMR..., 8GR...	1	2
A12M-SNGR08-D160	Steel	1.5	3.5	16	2	12	11	11.5	150	18	8.6	8GMR..., 8GR...	1	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	1
E10X-SNGR07-D120	Carbide	1	2	12	1.5	10	9	-	143.5	45	6.8	7GMR..., 7GR...	1	1
E10X-SNGR08-D140	Carbide	1.5	3.5	14	2	10	9	-	146	-	7.6	8GMR..., 8GR...	1	2
E12X-SNGR08-D160	Carbide	1.5	3.5	16	2	12	11	-	174.8	-	8.6	8GMR..., 8GR...	1	2
E16X-SNGR09-D200	Carbide	1.5	3.5	20	3	16	15	-	194.6	-	11.6	9GMR..., 9GR...	1.5	2

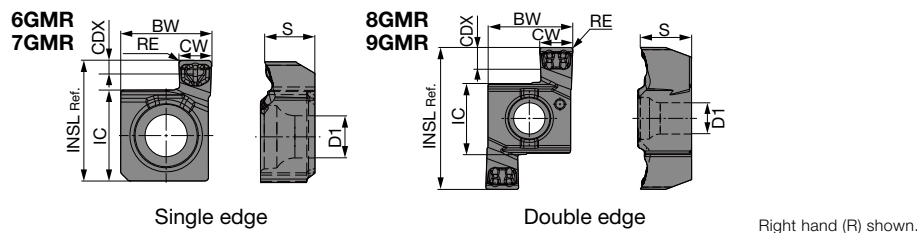
Note: Use the right-hand insert (□GR) with the right-hand holder (□NGR).  
Torque\*: Recommended clamping torque (N·m)

### 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

## INSERTS

\*\*GMR/L



	P	M	K	N	S	H
Steel	★					
Stainless	★					
Cast iron	★					
Non-ferrous						
Superalloys	★					
Hard materials						

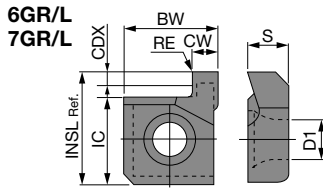
★ : First choice  
☆ : Second choice

Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Coated				CDX (mm)	BW (in)	S (in)	IC (in)	INSL (in)	D1 (in)
					AH7025									
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

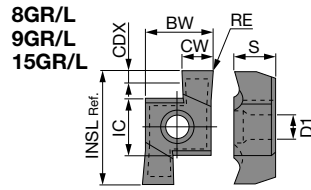
● : Line up

Reference pages: A/E-SNGR: Standard cutting conditions → 6-74

**\*\*GR/L**



Single edge



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)	Cermets		Uncoated		CDX (mm)	BW (in)	S (in)	IC (in)	INSL (in)	D1 (in)
					NS9530	TH10 UX30								
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



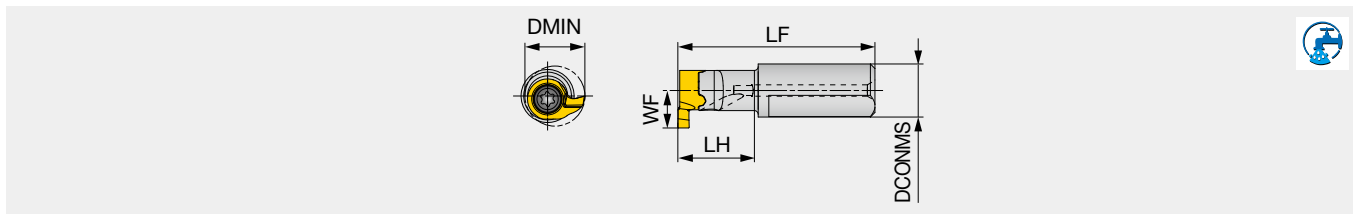
# STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed Vc (sfm)	Feed rate: f (ipr)	
				**GMR...	**GR/L...
<b>P</b>	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
<b>M</b>	Stainless steel 304SS, etc.	AH7025	164 - 394	0.0012 - 0.0047	-
		UX30	131 - 328	-	0.0012 - 0.0039
<b>K</b>	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
<b>S</b>	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



## TINYCUT<sup>INTERNAL</sup> A/E-SMR

### Screw-on boring bar



Metric	Material	DCONMS	LH	LF	Insert	Torque*
A07080-SMR4	Steel	7	8	24	M*R4...	0.5
E07120-SMR4	Carbide	7	12	29	M*R4...	0.5
A07100-SMR5	Steel	7	10	26	M*R5...	1.3
E07180-SMR5	Carbide	7	18	34	M*R5...	1.3

\*Torque: Recommended clamping torque (N-m)

For A/E-SMR4, the above LF and LH dimensions are true with MGR4100F000-D05 insert assembled.

For A/E-SMR5, the above LF and LH dimensions are true with MGR5150F003-D07 insert assembled.

The DMIN and WF sizes vary depending on the insert sizes used.

### SPARE PARTS



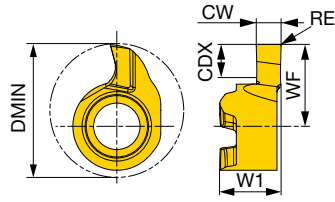
Designation	Clamping screw	Wrench
A/E07**-SMR4	CSPB-1.8L3.6	IP-6F
A/E07**-SMR5	CSTB-2.5L054DR	T-7F



# INSERT

## MGR

Grooving



P	Steel	★							
M	Stainless	★							
K	Cast iron	★							
N	Non-ferrous								
S	Superalloys	★							
H	Hard materials								

★ : First choice

Designation	CW (mm)	CW (in)	RE (in)	Coated					CDX (in)	DMIN (in)	WF (in)	W1 (in)
				SH7025								
MGR4100F000-D05	1	0.039	0	●					0.039	0.197	0.116	0.091
MGR5100F003-D07	1	0.039	0.001	●					0.039	0.276	0.156	0.146
MGR5150F003-D07	1.5	0.059	0.001	●					0.039	0.276	0.156	0.146
MGR5100F003-D08	1	0.039	0.001	●					0.079	0.315	0.195	0.146
MGR5150F010-D08	1.5	0.059	0.004	●					0.079	0.315	0.195	0.146
MGR5200F020-D08	2	0.079	0.008	●					0.079	0.315	0.195	0.146

● : Line up

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

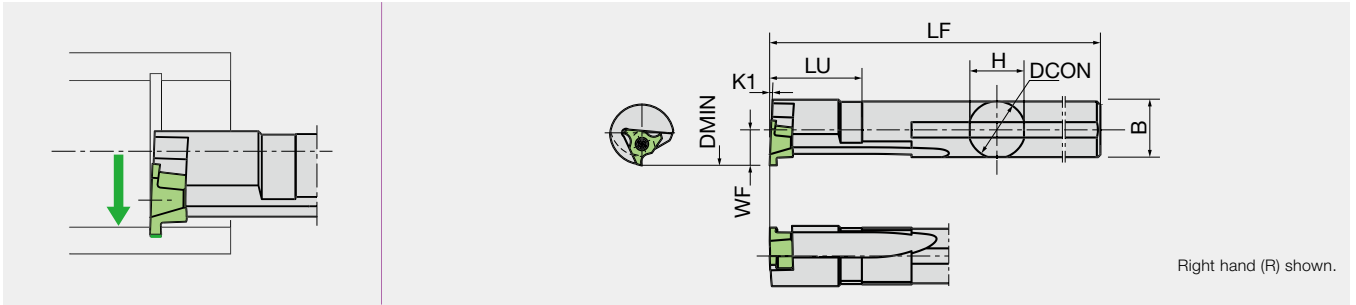
Endmill

Drilling Tool

Technical Reference

# S-BG

## Mogul Bar / Steel shank



Metric	CW	H	B	LF	DMIN	APMX	DCON	K1	LU	WF	Insert
S08H-BGR10D10	0.5 - 2	7.7	7.85	120	10	1	8	2°	20	5	GTG10..
S10K-BGR10D12	0.5 - 2	9.6	9.8	120	12	1	10	2°	25	6	GTG10..

NOTE: Use a left-handed insert.

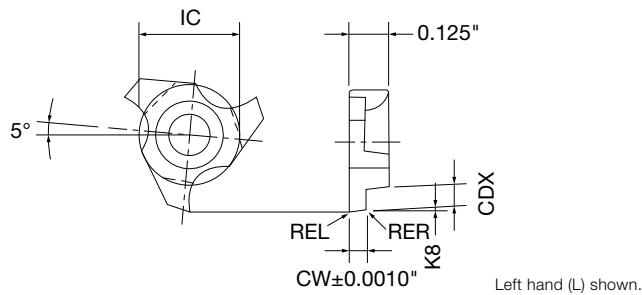
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
S**-BGR10**	LR-S-2.5*6.8	CLR-15S

## INSERT

GTG..005

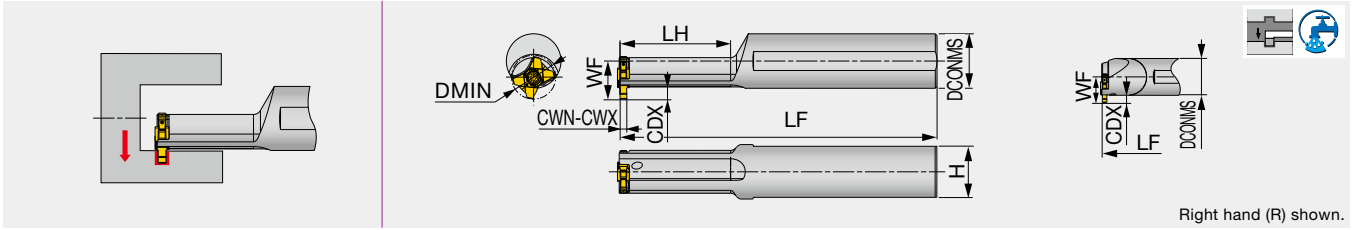


<b>P</b>	Steel	★	
<b>M</b>	Stainless	★	
<b>N</b>	Non-ferrous	★	
<b>S</b>	Superalloys		
<b>H</b>	Hard materials		

★ : First choice  
☆ : Second choice

Designation	HAND	Coated	CW (mm)	CW (in)	APMX (in)	CDX (in)	IC (in)	EPSR	K8	REL (in)	RER (in)
		TM4									
GTG10050FL005	L	●	0.5	0.020	0.039	0.047	0.219	60°	2°	0.002	0.002
GTG10075FL005	L	●	0.75	0.030	0.039	0.047	0.219	60°	2°	0.002	0.002
GTG10100FL005	L	●	1	0.039	0.039	0.047	0.219	60°	2°	0.002	0.002
GTG10150FL005	L	●	1.5	0.059	0.039	0.047	0.219	60°	2°	0.002	0.002
GTG10200FL005	L	●	2	0.079	0.039	0.047	0.219	60°	2°	0.002	0.002

● : Line up



Right hand (R) shown.

Inch	Material	CWN	CWX	Seat size	DMIN	DCONMS	LH	LF	WF	H	Insert	Torque
A08-STCIR/L10-D07U	Steel	0.020	0.118	10	0.438	0.500	0.984	4.000	0.339	0.475	TCIG10...	0.74
A08-STCIR/L10-D08U	Steel	0.020	0.118	10	0.500	0.500	1.220	4.000	0.339	0.475	TCIG10...	0.74
E08-STCIR/L10-D10U	Carbide	0.020	0.118	10	0.625	0.500	-	5.000	0.339	0.475	TCIG10...	0.74
A10-STCIR/L12-D09U	Steel	0.039	0.118	12	0.563	0.625	1.299	4.500	0.441	0.600	TCIG12...	0.96
A10-STCIR/L12-D11U	Steel	0.039	0.118	12	0.688	0.625	1.614	4.500	0.441	0.600	TCIG12...	0.96
E10-STCIR/L12-D13U	Carbide	0.039	0.118	12	0.813	0.625	-	6.000	0.441	0.600	TCIG12...	0.96

Metric	Material	CWN	CWX	Seat size	DMIN	DCONMS	LH	LF	WF	H	Insert	Torque*
A12H-STCIR/L10-D105	Steel	1.5	3	10	10.5	12	25	100	8.3	11	TCIG10...	1
A12H-STCIR/L10-D120	Steel	1.5	3	10	12	12	31	100	8.3	11	TCIG10...	1
E12K-STCIR/L10-D150	Carbide	1.5	3	10	15	12	-	125	8.3	11	TCIG10...	1
A16J-STCIR/L12-D130	Steel	1.5	3	12	13	16	33	110	11.3	15	TCIG12...	1.3
A16J-STCIR/L12-D160	Steel	1.5	3	12	16	16	41	110	11.3	15	TCIG12...	1.3
E16M-STCIR/L12-D200	Carbide	1.5	3	12	20	16	-	150	11.3	15	TCIG12...	1.3

Torque: Recommended clamping torque: lbs-ft (\*N-m)

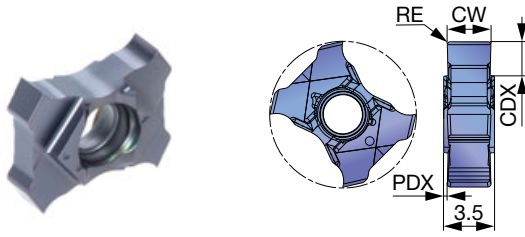
#### SPARE PARTS



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

# INSERTS

## TCIG



<b>P</b>	Steel	★				
<b>M</b>	Stainless	★				
<b>K</b>	Cast iron	★				
<b>N</b>	Non-ferrous					
<b>S</b>	Superalloys	★				
<b>H</b>	Hard materials					

★ : First choice

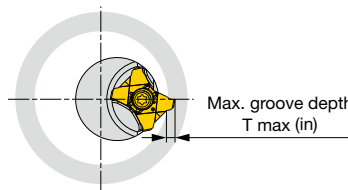
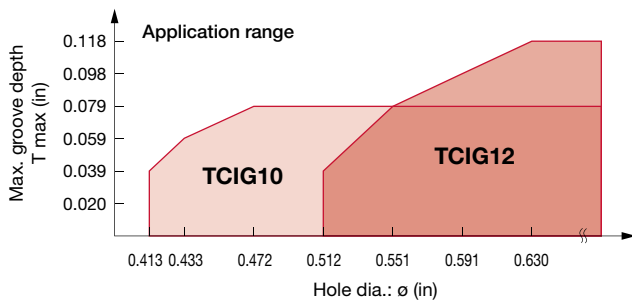
Designation	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated		CDX (in)	PDX (in)
				AH725			
TCIG10-050-005	0.5	0.020	0.0020	●		0.039	0.059
TCIG10-122-008	1.22	0.048	0.0031	●		0.079	0.045
TCIG10-142-008	1.42	0.056	0.0031	●		0.079	0.041
TCIG10-150-010	1.5	0.059	0.004	●		0.079	0.039
TCIG10-172-008	1.72	0.068	0.0031	●		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	0.0031	●		0.118	0.030
TCIG12-200-020	2	0.079	0.008	●		0.118	0.030
TCIG12-224-008	2.24	0.088	0.0031	●		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" ; and for TCIG12, when the bore diameter is < 0.63".

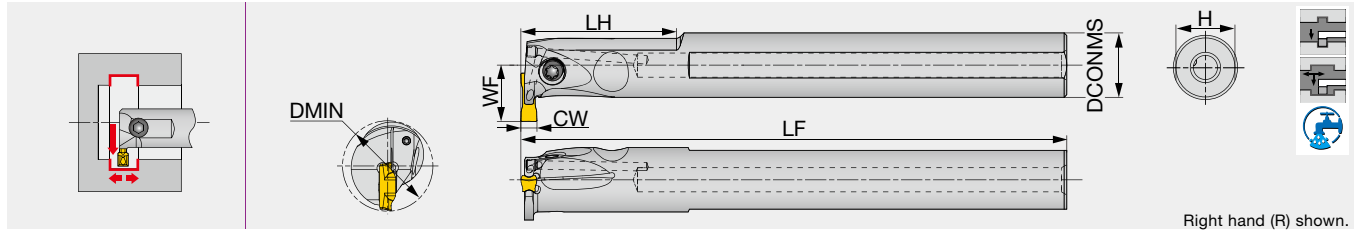
See the chart below for T max values in relation to the given bore diameter.



## STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Cutting speed Vc (sfm)	Feed f (ipr)
<b>P</b>	Steel 1045, 4140, etc.	< 300 HB	First choice	98 - 262	0.0004 - 0.002
<b>M</b>	Stainless steel 303SS, etc.	< 200 HB	First choice	98 - 164	0.0004 - 0.002
<b>S</b>	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	33 - 164	0.0004 - 0.002

Internal grooving and turning toolholder



Right hand (R) shown.

Inch	CW	DMIN	Seat size	CDX	DCONMS	H	LF <sup>(1)</sup>	LH	WF	Insert	Torque*
CTIR06S2T03-D08U	0.079	0.500	S2	0.118	0.375	0.350	4.000	0.875	0.319	D**2S...	0.96
CTIR08S2T04-D10U	0.079	0.625	S2	0.157	0.500	0.475	4.000	1.125	0.433	D**2S...	1.7
CTIR10S2T06-D12U	0.079	0.750	S2	0.236	0.625	0.591	4.500	1.438	0.571	D**2S...	2.58
CTIR08S3T04-D10U	0.118	0.625	S3	0.157	0.500	0.475	4.000	1.125	0.433	D**3S...	1.7
CTIR10S3T06-D12U	0.118	0.750	S3	0.236	0.625	0.591	4.500	1.438	0.571	D**3S...	2.58

Metric	CW	DMIN	Seat size	CDX	DCONMS	H	LF <sup>(1)</sup>	LH	WF	Insert	Torque*
CTIR10S2T03-D120	2	12	S2	3	10	9	100	22	8.4	D**2S...	1.3
CTIR12S2T04-D160	2	16	S2	4	12	11	100	28	10.5	D**2S...	2.3
CTIR16S2T06-D200	2	20	S2	6	16	15	110	36	14.5	D**2S...	3.5
CTIR12S3T04-D160	3	16	S3	4	12	11	100	28	10.5	D**3S...	2.3
CTIR16S3T06-D200	3	20	S3	6	16	15	110	36	14.5	D**3S...	3.5

(1) LF is calculated with the groove width CW in the above table.  
Torque: Recommended clamping torque: lbs-ft (\*N·m)

SPARE PARTS

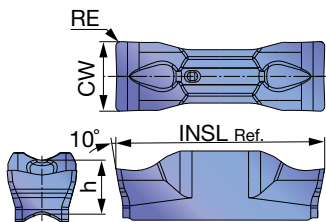


Designation	Clamping screw	Wrench
CTIR10S2T03-D120	CSTB-2.5L080	T-8F
CTIR12S2T04-D160	CSTB-3.5D	T-9F
CTIR16S2T06-D200	CSTB-4	T-15F

**INSERT**

DGS\*S

Internal grooving and parting



<b>P</b> Steel	★									
<b>M</b> Stainless	★									
<b>K</b> Cast iron	★									
<b>N</b> Non-ferrous										
<b>S</b> Superalloys	★									
<b>H</b> Hard materials										

★ : First choice

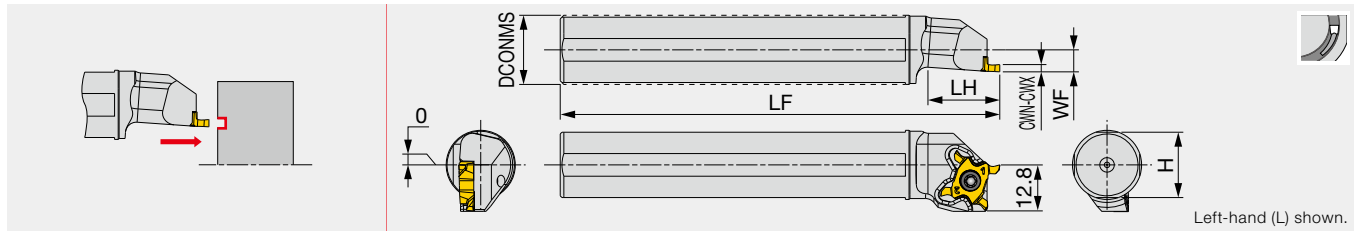
Designation	Seat size	CW±0.05 (mm)	CW±0.05 (in)	RE (in)	Coated						INSL (in)	h (in)	
					AH7025								
DGS2S-010	S2	2	0.079	0.004	●							0.354	0.087
DGS3S-020	S3	3	0.118	0.008	●							0.354	0.087

● : Line up

Reference pages: Standard cutting conditions → 6-80



### Face grooving toolholder with round shank

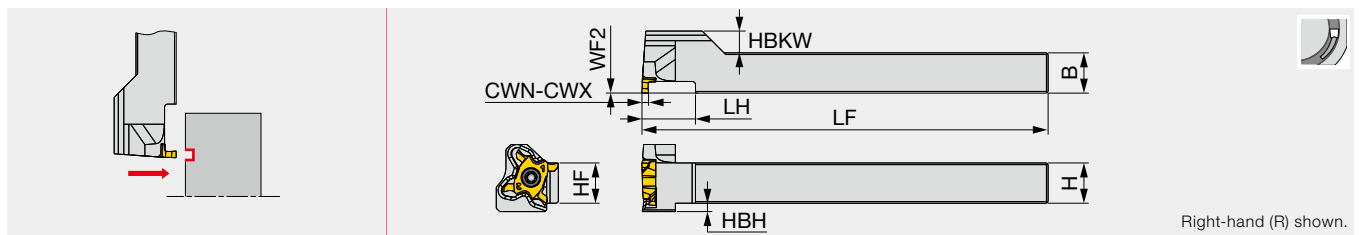


Metric	CWN	CWX	DCONMS	LF	LH	H	WF	Insert	Torque*
JS16F-STCFL18	0.5	2.5	16	85	20	15	6	TCF18L...	1.2
JS19G-STCFL18	0.5	2.5	19.05	90	20	18	6	TCF18L...	1.2
JS19X-STCFL18	0.5	2.5	19.05	120	20	18	6	TCF18L...	1.2
JS20G-STCFL18	0.5	2.5	20	90	20	19	6	TCF18L...	1.2
JS20X-STCFL18	0.5	2.5	20	120	20	19	6	TCF18L...	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



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	GSTC-4L100DR	T-1008/5

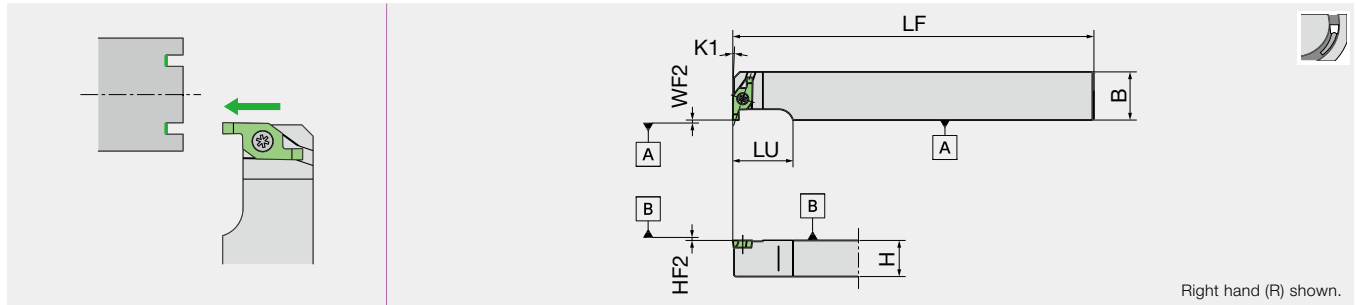
Threading pitch range: 0.8 - 3 mm





## FGV

For Gang-style machine



Metric	CW	H	B	LF	HF2	K1	LU	WF2	Insert
FGVR1016	1 - 2	10	16	120	0	1°	20	0	FGV..
FGVR1216	1 - 2	12	16	120	0	1°	20	0	FGV..
FGVR1616	1 - 2	16	16	120	0	1°	20	0	FGV..

NOTE: Use a left-handed insert.

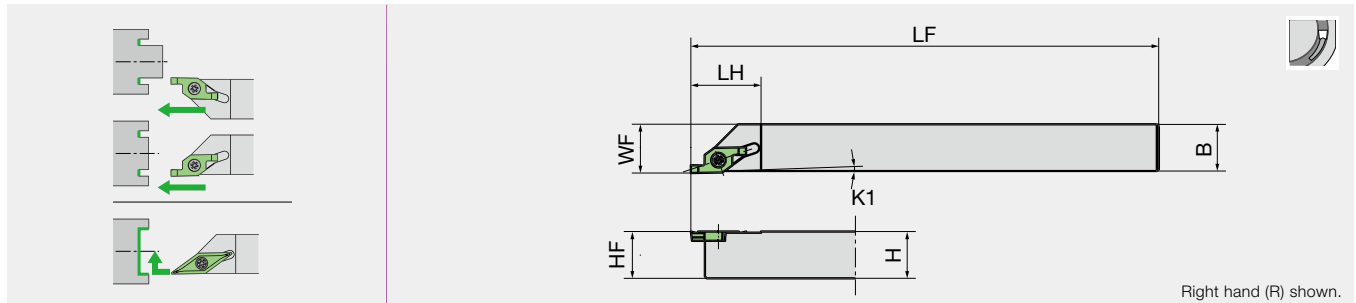
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
FGVR**	LRIS-2.5*7	CLR-15S

## CH-FGV

For horizontal gang style tool post



Metric	CW	H	B	LF	LH	K1	WF	Insert
CH-FGVR1010	1 - 2	10	10	120	18	1°	10.5	FGV.. FBV..
CH-FGVR1212	1 - 2	12	12	120	18	1°	12.5	FGV.. FBV..
CH-FGVR1616	1 - 2	16	16	120	18	1°	16.5	FGV.. FBV..
CH-FGVL1010	1 - 2	10	10	120	18	1°	10.5	FGV.. -
CH-FGVL1212	1 - 2	12	12	120	18	1°	12.5	FGV.. -
CH-FGVL1616	1 - 2	16	16	120	18	1°	16.5	FGV.. -

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CH-FGV**	LRIS-2.5*7	CLR-15S

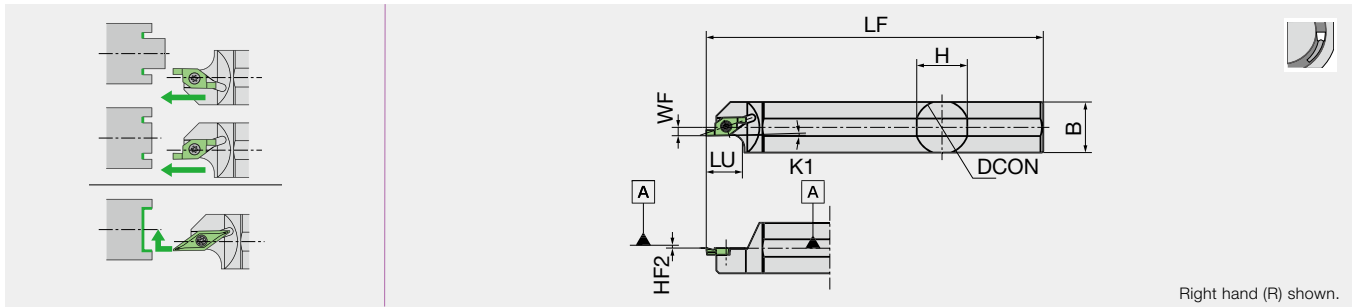
Reference pages: Inserts → 6-85

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

# DS-FGV

DS Toolholders / For sleeve tool post



Metric	CW	H	B	LF	DCON	HF2	K1	LU	WF	Insert	
DS-FGVR16-012	1 - 2	15	15	80	16	0	1°	11	3	FGV..	FBV..
DS-FGVR19	1 - 2	18	18	120	19.05	0	1°	11	3	FGV..	FBV..
DS-FGVR20	1 - 2	19	19	120	20	0	1°	11	3	FGV..	FBV..
DS-FGVR22	1 - 2	21	21	120	22	0	1°	11	3	FGV..	FBV..
DS-FGVR22M	1 - 2	21	21	150	22	0	1°	11	3	FGV..	FBV..
DS-FGVR25	1 - 2	24.5	24.5	120	25.4	0	1°	11	3	FGV..	FBV..
DS-FGVR25-MET	1 - 2	24	24	150	25	0	1°	11	3	FGV..	FBV..
DS-FGVL16-012	1 - 2	15	15	80	16	0	1°	11	3	FGV..	-
DS-FGVL19	1 - 2	18	18	120	19.05	0	1°	11	3	FGV..	-
DS-FGVL20	1 - 2	19	19	120	20	0	1°	11	3	FGV..	-
DS-FGVL22	1 - 2	21	21	120	22	0	1°	11	3	FGV..	-
DS-FGVL22M	1 - 2	21	21	150	22	0	1°	11	3	FGV..	-
DS-FGVL25	1 - 2	24.5	24.5	120	25.4	0	1°	11	3	FGV..	-
DS-FGVL25-MET	1 - 2	24	24	150	25	0	1°	11	3	FGV..	-

## SPARE PARTS

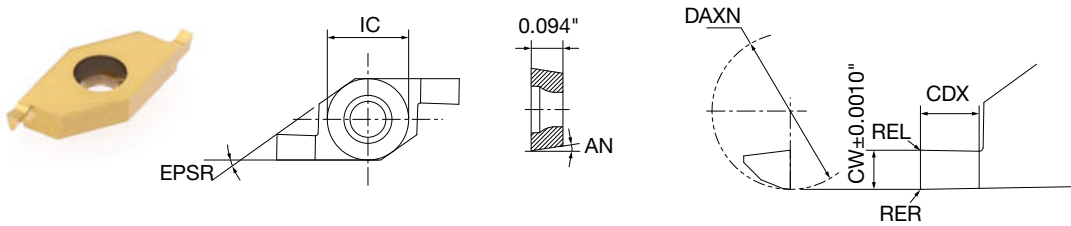


Designation	Clamp screw	Wrench (for Clamp screw)
DS-FGVR/L**	LRIS-2.5*7	CLR-15S

Reference pages: Inserts → [6-85](#)

# INSERT

## FGV with chipbreaker



Right hand (R) shown.

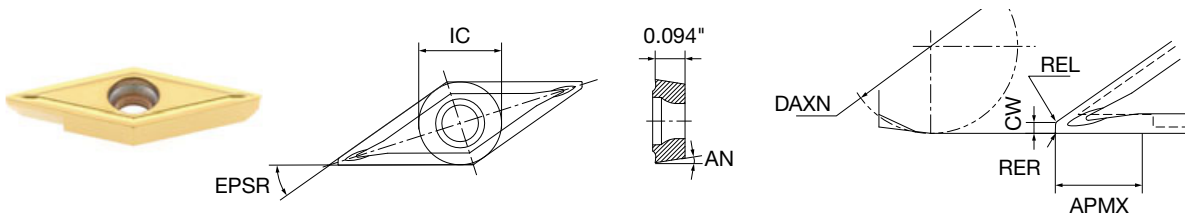
<b>P</b>	Steel	★
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	☆
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice

Designation	HAND	Coated	CW (mm)	CW (in)	APMX (in)	CDX (in)	DAXN (in)	IC (in)	AN	EPSR	REL (in)	RER (in)
		TM4										
FGV100RB00D6	R	●	1	0.039	0.059	0.069	0.236	0.250	7°	35°	0	0
FGV100RB05D6	R	●	1	0.039	0.059	0.071	0.236	0.250	7°	35°	0.002	0.002
FGV150RB00D6	R	●	1.5	0.059	0.079	0.087	0.236	0.250	7°	35°	0	0
FGV150RB05D6	R	●	1.5	0.059	0.079	0.091	0.236	0.250	7°	35°	0.002	0.002
FGV200RB00D6	R	●	2	0.079	0.118	0.126	0.236	0.250	7°	35°	0	0
FGV200RB05D6	R	●	2	0.079	0.118	0.130	0.236	0.250	7°	35°	0.002	0.002
FGV100LB00D6	L	●	1	0.039	0.059	0.069	0.236	0.250	7°	35°	0	0
FGV100LB05D6	L	●	1	0.039	0.059	0.071	0.236	0.250	7°	35°	0.002	0.002
FGV150LB00D6	L	●	1.5	0.059	0.079	0.087	0.236	0.250	7°	35°	0	0
FGV150LB05D6	L	●	1.5	0.059	0.079	0.091	0.236	0.250	7°	35°	0.002	0.002
FGV200LB00D6	L	●	2	0.079	0.118	0.126	0.236	0.250	7°	35°	0	0
FGV200LB05D6	L	●	2	0.079	0.118	0.130	0.236	0.250	7°	35°	0.002	0.002

● : Line up

## FBV with chipbreaker



Right hand (R) shown.

<b>P</b>	Steel	★
<b>M</b>	Stainless	★
<b>N</b>	Non-ferrous	☆
<b>S</b>	Superalloys	
<b>H</b>	Hard materials	

★ : First choice  
☆ : Second choice

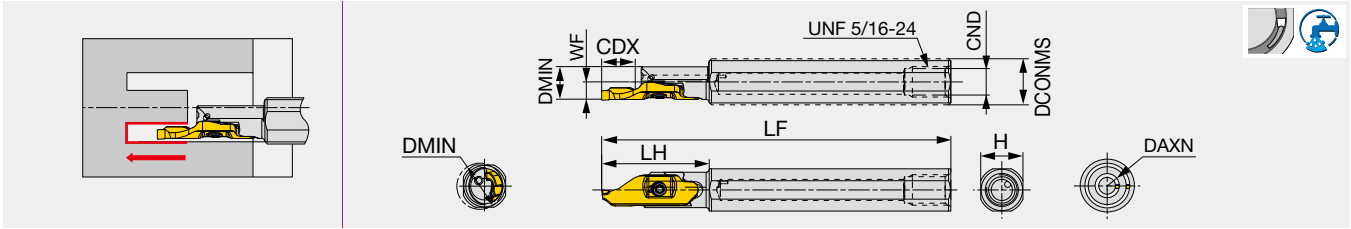
Designation	HAND	Coated	CW (mm)	CW (in)	APMX (in)	DAXN (in)	IC (in)	AN	EPSR	REL (in)	RER (in)
		TM4									
FBV40R05D8AM3	R	●	(0.5)	(0.020)	0.157	0.315	0.250	7°	35°	0.008	0.002
FBV40R15D8AM3	R	●	(0.5)	(0.020)	0.157	0.315	0.250	7°	35°	0.008	0.006

Note: Only CH-FGVR and DS-FGVR can take FBV Right hand insert.

● : Line up

Reference pages: Toolholders → [6-83](#), [6-84](#)

Face grooving toolholder with round shank



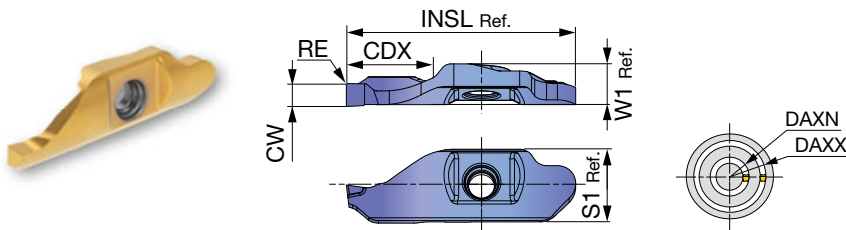
Inch	CDX	DAXN	DCONMS	DMIN	WF	LH	LF	CND	H	Insert	Torque
A127G-MFR10-D100	0.354	0.394	0.500	0.394	0.197	1.063	3.543	0.272	0.461	MFGR10...	0.89
A159F-MFR10-D100	0.354	0.394	0.625	0.394	0.197	1.063	3.346	0.272	0.591	MFGR10...	0.89
Metric	CDX	DAXN	DCONMS	DMIN	WF	LH	LF	CND	H	Insert	Torque*
A12G-MFR10-D100	9	10	12	10	5	27	90	6.9	11	MFGR10...	1.2
A127G-MFR10-D100	9	10	12.7	10	5	27	90	6.9	11.7	MFGR10...	1.2
A159F-MFR10-D100	9	10	15.875	10	5	27	85	6.9	15	MFGR10...	1.2
A16F-MFR10-D100	9	10	16	10	5	27	85	6.9	15	MFGR10...	1.2

### SPARE PARTS

Designation	Clamping screw	Wrench
A***-MFR10...	CSTB-2.5	T-8F

## INSERTS

### MFGR10



<b>P</b> Steel	★						
<b>M</b> Stainless	★						
<b>K</b> Cast iron							
<b>N</b> Non-ferrous							
<b>S</b> Superalloys							
<b>H</b> Hard materials							

★ : First choice

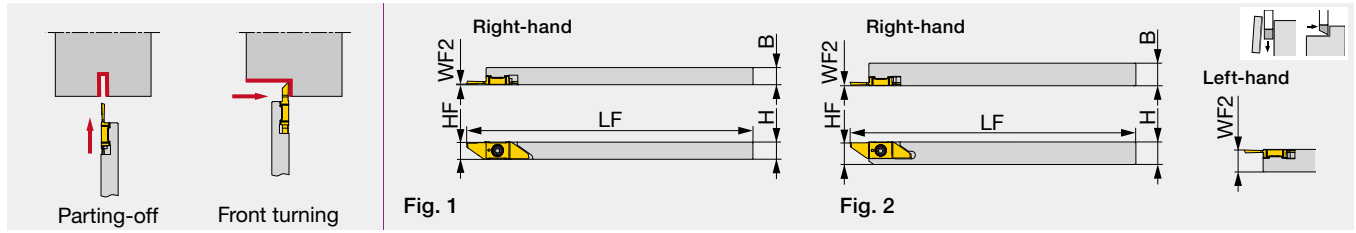
Designation	CW±0.025 (mm)	CW±0.025 (in)	RE (in)	Coated				CDX (in)	DAXN (in)	DAXX (in)	INSL (in)	W1 (in)	S1 (in)
				SH7025									
MFGR10-200-020	2	0.079	0.008	●				0.354	0.394	-	0.984	0.181	0.311
MFGR10-200-100	2	0.079	0.039	●				0.354	0.394	-	0.984	0.181	0.311
MFGR10-250-020	2.5	0.098	0.008	●				0.354	0.394	0.630	0.984	0.181	0.311
MFGR10-250-125	2.5	0.098	0.049	●				0.354	0.394	-	0.984	0.181	0.311

● : Line up

## STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed Vc (sfm)	Feed: f (ipr)
<b>P</b>	Low carbon steel 1015, 1020, etc.	SH7025	1.181 - 4.724	0.0004 - 0.0028
	Carbon steels, Alloy steel 1055, 4140, etc.	SH7025	1.181 - 4.724	0.0004 - 0.0028
	Prehardened steel NAK80, PX5, etc.	SH7025	1.181 - 4.724	0.0004 - 0.0028
<b>M</b>	Stainless steel 304SS, 316SS, etc.	SH7025	1.181 - 4.724	0.0004 - 0.0028

Parting-off and front turning toolholders



Metric	H	B	LF	HF	WF2 <sup>(1)</sup>	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.

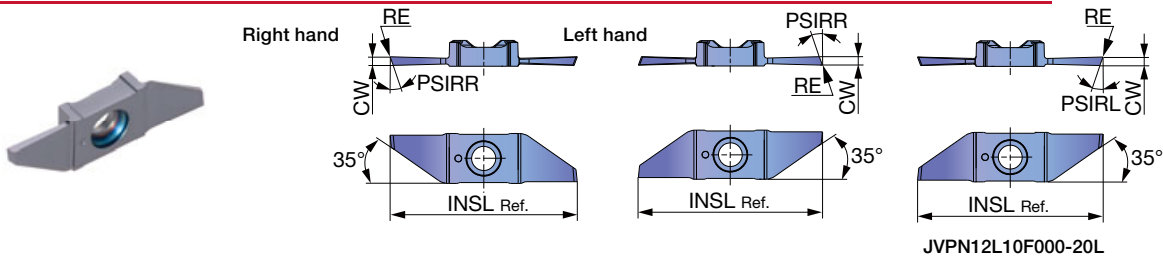
Use the right-hand insert (JV\*\*\*\*R...) for a right-hand holder (JSXXR...); the left-hand insert (JV\*\*\*\*L...) for a left-hand holder (JSXXL...).

SPARE PARTS

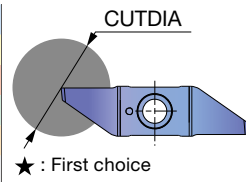
Designation	Clamping screw	Wrench
JSXXR...05	CSTB-2.5L054DL	T-7F
JSXXL...05	CSTB-2.5L054DR	T-7F

INSERTS

JVPN\*\*R/L (For parting-off)



	P	M	K	N	S	H
Steel	★					
Stainless	★					
Cast iron						
Non-ferrous	★					
Superalloys	★					
Hard materials						



Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated				CUTDIA (in)	INSL (in)	PSIRR	PSIRL
					SH725							
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

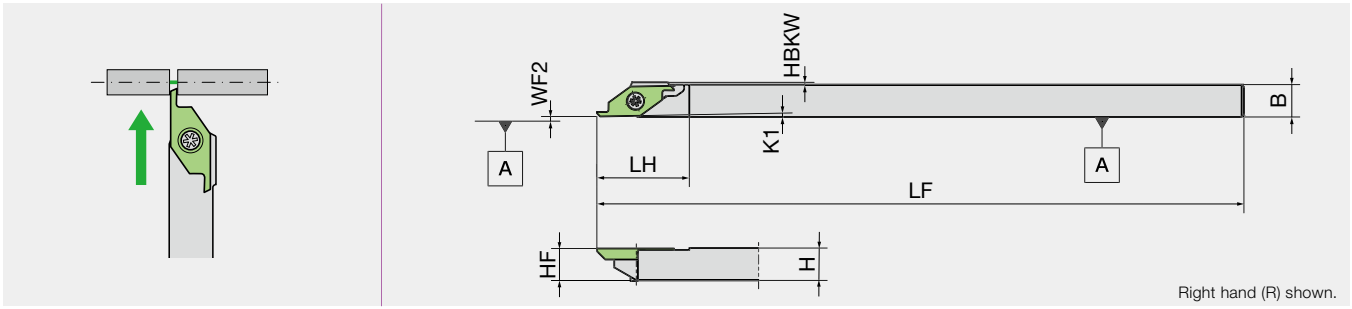
### Parting-off

ISO	Workpiece materials	Grade	Cutting speed Vc (sfm)	Feed f (ipr)
<b>P</b>	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
<b>M</b>	Stainless steels 304, etc.	SH725	164 - 394	0.00039 - 0.0020
<b>N</b>	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0020
	Copper alloys C2600, C280C, etc.	SH725	328 - 656	0.00039 - 0.0020
<b>S</b>	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.00039 - 0.0020
	Superalloys Inconel718, etc.	SH725	98 - 262	0.00039 - 0.0020



# CSV/L

For Cam-style machine



Inch	H	B	LF	LH	HBKW	HF	K1	WF2	Insert
CSV06-IN-NC	0.375	0.375	4.724	0.787	-	0.375	1°	0.004	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV08-IN-NC	0.500	0.500	4.724	0.787	-	0.500	1°	0.004	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSVL06-IN-NC	0.375	0.375	4.724	0.787	-	0.375	1°	0.004	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSVL08-IN-NC	0.500	0.500	4.724	0.787	-	0.500	1°	0.004	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
Metric	H	B	LF	LH	HBKW	HF	K1	WF2	Insert
CSV07	7	7	140	20	0.5	7	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV07GX	7	7	85	20	0.5	7	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV08	8	8	140	20	0	8	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV08GX	8	8	85	20	0	8	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV095	9.5	9.5	140	20	0	9.5	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV10	10	10	140	20	0	10	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV12	12	12	140	20	0	12	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV12GX	12	12	85	20	0	12	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSVL07	7	7	140	20	0.5	7	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSVL08	8	8	140	20	0	8	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSVL10	10	10	140	20	0	10	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV08NC	8	8	120	20	-	8	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV08NC-F	8	8	120	20	-	8	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV10GXNC	10	10	85	20	-	10	1°	0 - 0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV10NC	10	10	120	20	-	10	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSV12NC	12	12	120	20	-	12	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSVL08NC	8	8	120	20	-	8	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSVL10NC	10	10	120	20	-	10	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..
CSVL12NC	12	12	120	20	-	12	1°	0.1	CSV series, CSVF./CSVB../CSVC../CSVG../CSVT..

## SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CSV/L**	LRIS-2.5*7	CLR-15S

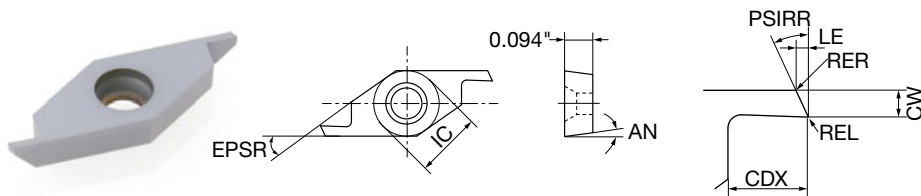
Reference pages : Inserts → 6-90

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



# INSERT

## CSVC-V without Chipbreaker



Right hand (R) shown.

P	Steel	★
M	Stainless	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

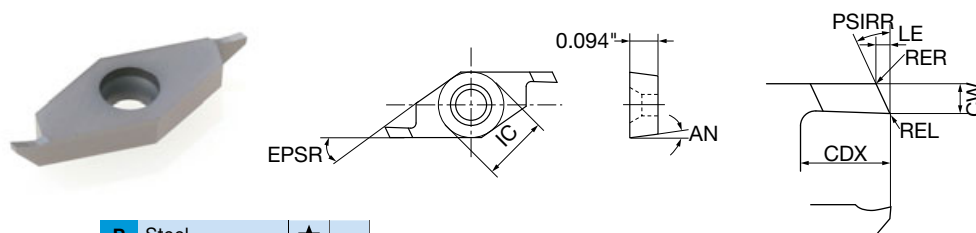
★ : First choice  
☆ : Second choice

Designation	HAND	Coated	Mirror finish	CUTDIA (in)	CW (mm)	CW (in)	IC (in)	AN	EPSR	CDX (in)	LE (in)	PSIRR	REL (in)	RER (in)
		VM1												
CSVC11FRV06	R	●	M	0.118	0.6	0.024	0.250	7°	35°	0.079	0.012	25°	0	0
CSVC11FRV07	R	●	M	0.157	0.7	0.028	0.250	7°	35°	0.098	0.014	25°	0	0
CSVC11FRV08	R	●	M	0.157	0.8	0.031	0.250	7°	35°	0.098	0.016	25°	0	0
CSVC11FRV09	R	●	M	0.157	0.9	0.035	0.250	7°	35°	0.098	0.018	25°	0	0
CSVC11FRV10	R	●	M	0.197	1	0.039	0.250	7°	35°	0.118	0.020	25°	0	0
CSVC11FRV13	R	●	M	0.197	1.3	0.051	0.250	7°	35°	0.118	0.026	25°	0	0
CSVC11FRV15	R	●	M	0.197	1.5	0.059	0.250	7°	35°	0.118	0.029	25°	0	0
CSVC11FLV07	L	●	M	0.157	0.7	0.028	0.250	7°	35°	0.098	0.014	25°	0	0
CSVC11FLV08	L	●	M	0.157	0.8	0.031	0.250	7°	35°	0.098	0.016	25°	0	0
CSVC11FLV10	L	●	M	0.197	1	0.039	0.250	7°	35°	0.118	0.020	25°	0	0
CSVC11FLV13	L	●	M	0.197	1.3	0.051	0.250	7°	35°	0.118	0.026	25°	0	0
CSVC11FLV15	L	●	M	0.197	1.5	0.059	0.250	7°	35°	0.118	0.029	25°	0	0

All angles shown are obtained when insert is set in the holder.

● : Line up

## CSVC-VB with Chipbreaker



Right hand (R) shown.

P	Steel	★
M	Stainless	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice  
☆ : Second choice

Designation	HAND	Coated	Mirror finish	CUTDIA (in)	CW (mm)	CW (in)	IC (in)	AN	EPSR	CDX (in)	LE (in)	PSIRR	REL (in)	RER (in)
		VM1												
CSVC11FRVB06	R	●	M	0.118	0.6	0.024	0.250	7°	35°	0.079	0.012	25°	0	0
CSVC11FRVB07	R	●	M	0.157	0.7	0.028	0.250	7°	35°	0.098	0.014	25°	0	0
CSVC11FRVB08	R	●	M	0.157	0.8	0.031	0.250	7°	35°	0.098	0.016	25°	0	0
CSVC11FRVB09	R	●	M	0.157	0.9	0.035	0.250	7°	35°	0.098	0.018	25°	0	0
CSVC11FRVB10	R	●	M	0.197	1	0.039	0.250	7°	35°	0.118	0.020	25°	0	0
CSVC11FRVB13	R	●	M	0.197	1.3	0.051	0.250	7°	35°	0.118	0.026	25°	0	0
CSVC11FRVB15	R	●	M	0.197	1.5	0.059	0.250	7°	35°	0.118	0.029	25°	0	0

All angles shown are obtained when insert is set in the holder.

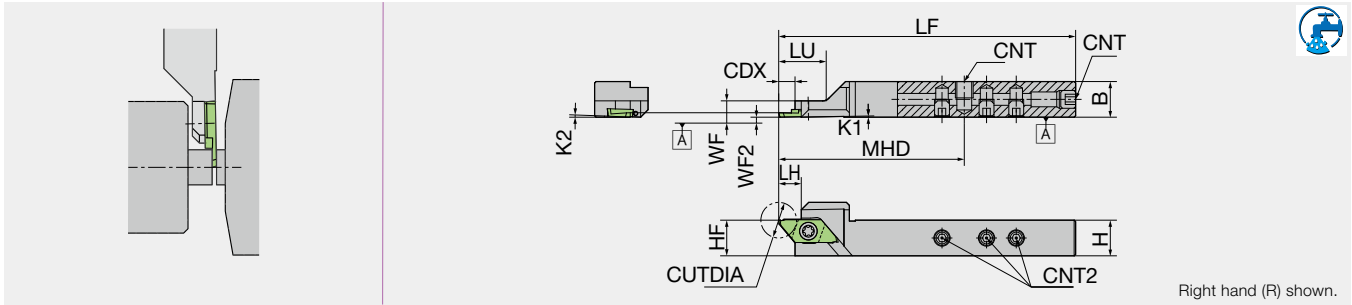
● : Line up



# CTP.. series/Toolholder

## CTPR-SUB-OH3

Coolant through (direct connect compatible) for Sub-Spindle



Right hand (R) shown.

Inch	CUTDIA	H	B	LF	LH	CDX	HF	K1	K2	LU	MHD	WF	WF2	CNT	CNT2	Insert
CTPR08-IN-SUB-OH3	0.472	0.500	0.500	3.937	0.299	0.217	0.500	1°	2°	0.630	2.461	0.217	0	M6*1	M5	CTP..
Metric	CUTDIA	H	B	LF	LH	CDX	HF	K1	K2	LU	MHD	WF	WF2	CNT	CNT2	Insert
CTPR12H-SUB-OH3	12	12	12	100	7.6	5.5	12	1°	2°	16	62.5	5.5	0	M6*1	M5	CTP..

NOTE: Reference Chart of OH3 Hole Position → 10-1

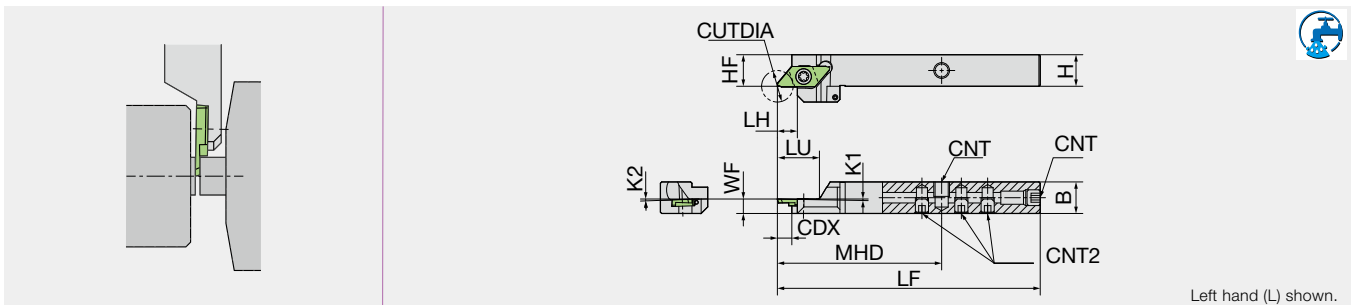
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CTPR08-IN-SUB-OH3	LRIS-4*5	LLR-25S
CTPR12H-SUB-OH3	LRIS-4*5	LLR-25S

## CTPL-SUB-OH3

Coolant through (direct connect compatible) for Sub-spindle



Left hand (L) shown.

Inch	CUTDIA	H	B	LF	LH	CDX	HF	K1	K2	LU	MHD	WF	WF2	CNT	CNT2	Insert
CTPL08-IN-SUB-OH3	0.472	0.500	0.500	3.937	0.299	0.217	0.500	1°	2°	0.630	2.461	0.217	0	M6*1	M5	CTP..
Metric	CUTDIA	H	B	LF	LH	CDX	HF	K1	K2	LU	MHD	WF	WF2	CNT	CNT2	Insert
CTPL12H-SUB-OH3	12	12	12	100	7.6	5.5	12	1°	2°	16	62.5	5.5	0	M6*1	M5	CTP..

NOTE: Reference Chart of OH3 Hole Position → 10-1

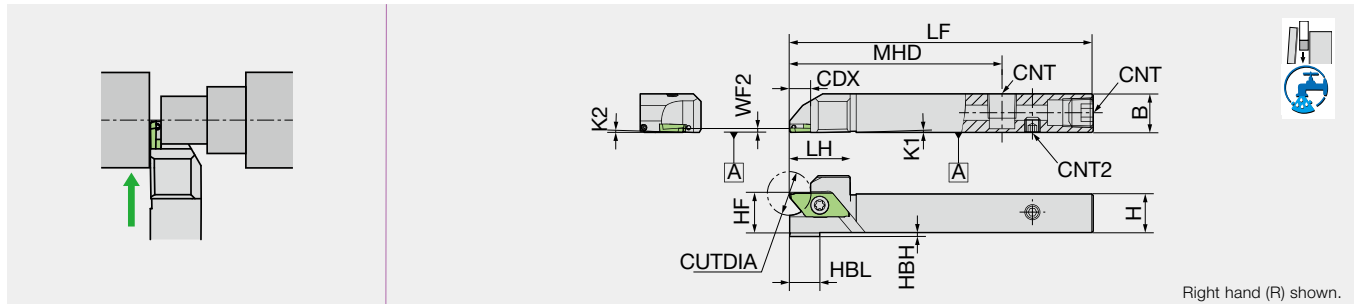
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CTPL08-IN-SUB-OH3	LRIS-4*5	LLR-25S
CTPL12H-SUB-OH3	LRIS-4*5	LLR-25S

## CTPR/L-OH2

Coolant through (direct connect compatible)



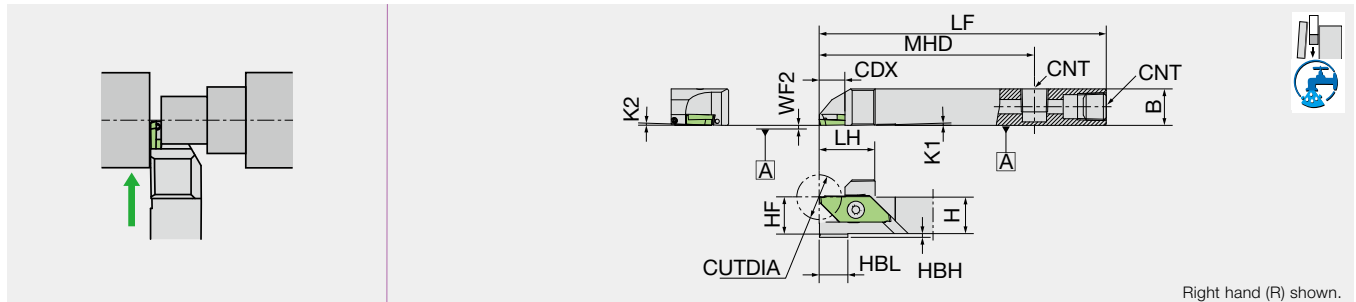
Inch	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
CTPR08H-IN-OH2	0.472	0.500	0.500	3.937	0.787	0.276	0.051	0.394	0.500	1°	2°	2.756	0.059	NPT1/8	M5	CTP..
CTPL08H-IN-OH2	0.472	0.500	0.500	3.937	0.787	0.276	0.051	0.394	0.500	1°	2°	2.756	0.059	NPT1/8	M5	CTP..
Metric	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert
CTPR12H-OH2	12	12	12	100	19.5	7	2	10	12	1°	2°	70	1.5	Rc1/8	M5	CTP..
CTPL12H-OH2	12	12	12	100	19.5	7	2	10	12	1°	2°	70	1.5	Rc1/8	M5	CTP..

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
CTPR/L08H-IN-OH2	LRIS-4*12PW	SPNPT1/8	SS0505SC	CLR-15S	LW-2.5
CTPR/L12H-OH2	LRIS-4*12PW	SPR1/8	SS0505SC	CLR-15S	LW-2.5

## CTPR/L-OH

Coolant through

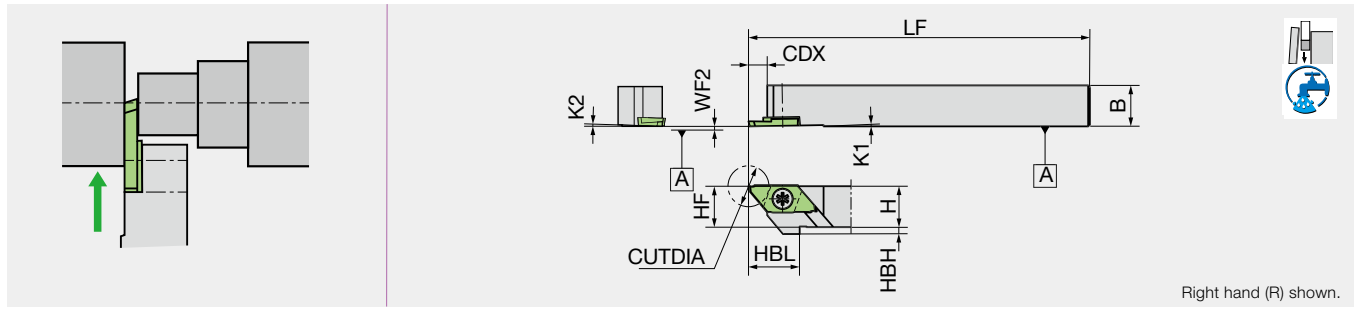


Inch	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	Insert
CTPR06H-IN-OH	0.472	0.375	0.375	3.937	0.768	0.276	0.176	0.748	0.375	1°	2°	2.953	0	M6*1	CTP..
CTPR08H-IN-OH	0.472	0.500	0.500	3.937	0.768	0.276	0.051	0.394	0.500	1°	2°	2.953	0	NPT1/8	CTP..
CTPL06H-IN-OH	0.472	0.375	0.375	3.937	0.768	0.276	0.176	0.748	0.375	1°	2°	2.953	0	M6*1	CTP..
CTPL08H-IN-OH	0.472	0.500	0.500	3.937	0.768	0.276	0.051	0.394	0.500	1°	2°	2.953	0	NPT1/8	CTP..
Metric	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	Insert
CTPR1012H-OH	12	10	12	100	19.5	7	4	19	10	1°	2°	75	0	M6*1	CTP..
CTPR12H-OH	12	12	12	100	19.5	7	2	10	12	1°	2°	75	0	Rc1/8	CTP..
CTPR16H-OH	12	16	16	100	19.5	7	-	-	16	1°	2°	75	0	Rc1/8	CTP..
CTPL1012H-OH	12	10	12	100	19.5	7	4	19	10	1°	2°	75	0	M6*1	CTP..
CTPL12H-OH	12	12	12	100	19.5	7	2	10	12	1°	2°	75	0	Rc1/8	CTP..
CTPL16H-OH	12	16	16	100	19.5	7	-	-	16	1°	2°	75	0	Rc1/8	CTP..

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Wrench (for Clamp screw)	Wrench (for CNT)
CTPR/L06H-IN-OH	LRIS-4*12PW	SS0605SC	CLR-15S	LW-3
CTPR/L08H-IN-OH	LRIS-4*12PW	SPNPT1/8	CLR-15S	-
CTPR/L1012H-OH	LRIS-4*12PW	SS0605SC	CLR-15S	LW-3
CTPR/L12H-OH	LRIS-4*12PW	SPR1/8	CLR-15S	-
CTPR/L16H-OH	LRIS-4*12PW	SPR1/8	CLR-15S	-

Reference pages : Inserts → 6-95 - 6-100



Right hand (R) shown.

Inch	CUTDIA	H	B	LF	CDX	HBH	HBL	HF	K1	K2	WF2	Insert
CTPR06-IN	0.472	0.375	0.375	4.724	0.217	0.078	0.591	0.375	1°	2°	0	CTP..
CTPR08-IN	0.472	0.500	0.500	4.724	0.217	-	-	0.500	1°	2°	0	CTP..
CTPR10-IN	0.472	0.625	0.625	4.724	0.217	-	-	0.625	1°	2°	0	CTP..
CTPL06-IN	0.472	0.375	0.375	4.724	0.217	0.078	0.591	0.375	1°	2°	0	CTP..
CTPL08-IN	0.472	0.500	0.500	4.724	0.217	-	-	0.500	1°	2°	0	CTP..
CTPL10-IN	0.472	0.625	0.625	4.724	0.217	-	-	0.625	1°	2°	0	CTP..
Metric	CUTDIA	H	B	LF	CDX	HBH	HBL	HF	K1	K2	WF2	Insert
CTPR08	12	8	10	120	5.5	4	15	8	1°	2°	0	CTP..
CTPR10	12	10	10	120	5.5	2	15	10	1°	2°	0	CTP..
CTPR10H	12	10	10	100	5.5	2	15	10	1°	2°	0	CTP..
CTPR12	12	12	12	120	5.5	-	-	12	1°	2°	0	CTP..
CTPR12GX	12	12	12	85	5.5	-	-	12	1°	2°	0	CTP..
CTPR16	12	16	16	120	5.5	-	-	16	1°	2°	0	CTP..
CTPR16H	12	16	16	100	5.5	-	-	16	1°	2°	0	CTP..
CTPL08	12	8	10	120	5.5	4	15	8	1°	2°	0	CTP..
CTPL10	12	10	10	120	5.5	2	15	10	1°	2°	0	CTP..
CTPL10H	12	10	10	100	5.5	2	15	10	1°	2°	0	CTP..
CTPL12	12	12	12	120	5.5	-	-	12	1°	2°	0	CTP..
CTPL12GX	12	12	12	85	5.5	-	-	12	1°	2°	0	CTP..
CTPL16	12	16	16	120	5.5	-	-	16	1°	2°	0	CTP..

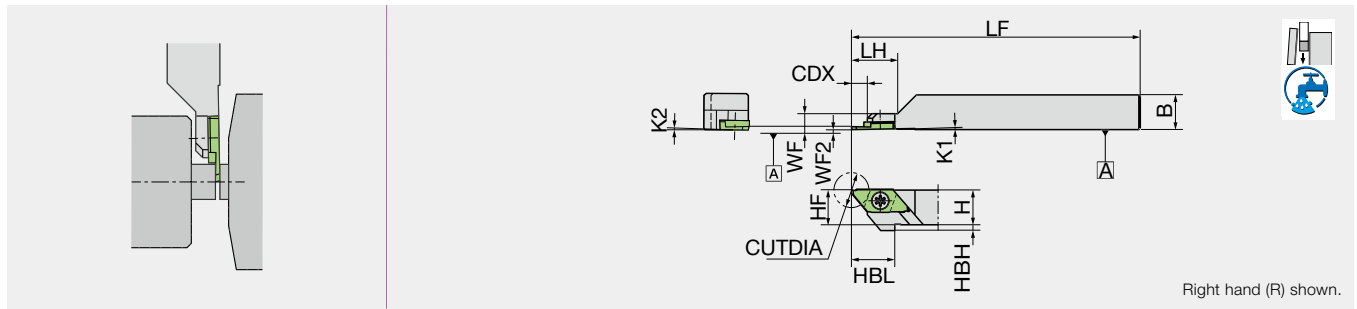
SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CTPR06-IN	LRIS-4*10PW	CLR-15S
CTPR08-IN	LRIS-4*12PW	CLR-15S
CTPR10-IN	LRIS-4*12PW	CLR-15S
CTPL06-IN	LRIS-4*10PW	CLR-15S
CTPL08-IN	LRIS-4*12PW	CLR-15S
CTPL10-IN	LRIS-4*12PW	CLR-15S
CTPR/L08	LRIS-4*10PW	CLR-15S
CTPR/L10**	LRIS-4*10PW	CLR-15S
CTPR/L12**	LRIS-4*12PW	CLR-15S
CTPR/L16**	LRIS-4*12PW	CLR-15S

## CTPR-SUB

For Sub-Spindle



Right hand (R) shown.

Inch	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	WF	WF2	Insert
CTPR06-IN-SUB	0.472	0.375	0.375	4.724	0.630	0.217	0.097	0.591	0.375	1°	2°	0.217	0	CTP..
CTPR08-IN-SUB	0.472	0.500	0.500	4.724	0.630	0.217	-	-	0.500	1°	2°	0.217	0	CTP..
CTPR10-IN-SUB	0.472	0.625	0.625	4.724	0.630	0.217	-	-	0.625	1°	2°	0.217	0	CTP..
Metric	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	WF	WF2	Insert
CTPR08J-SUB	12	8	8	110	16	5.5	4	15	8	1°	2°	5.5	0	CTP..
CTPR08-SUB	12	8	8	120	16	5.5	4	15	8	1°	2°	5.5	0	CTP..
CTPR10F-SUB	12	10	10	80	16	5.5	2	15	10	1°	2°	5.5	0	CTP..
CTPR10KX-SUB	12	10	10	120	16	5.5	2	15	10	1°	2°	5.5	0	CTP..
CTPR12GX-SUB	12	12	12	85	16	5.5	-	-	12	1°	2°	5.5	0	CTP..
CTPR12-SUB	12	12	12	120	16	5.5	-	-	12	1°	2°	5.5	0	CTP..

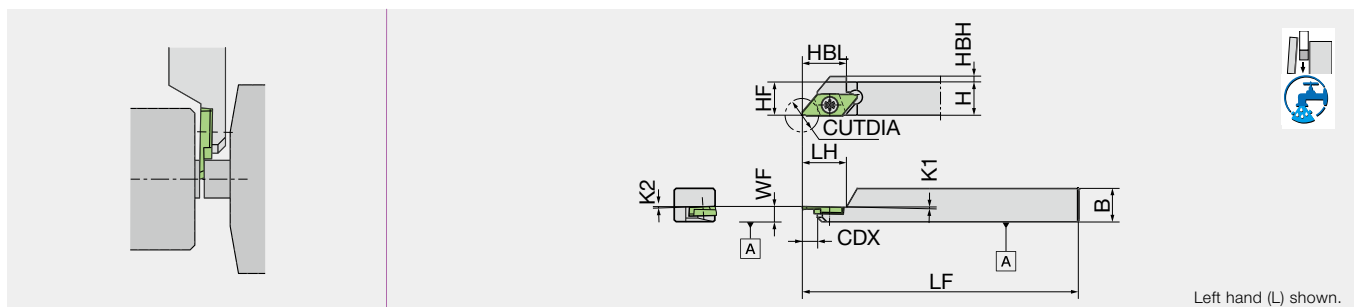
### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CTPR*-SUB	LRIS-4*5	LLR-25S

## CTPL-SUB

For Sub-Spindle



Left hand (L) shown.

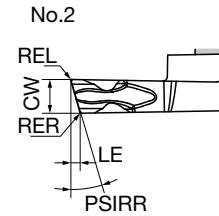
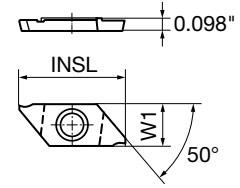
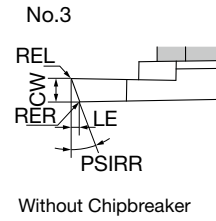
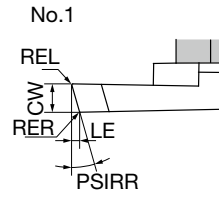
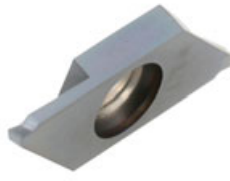
Metric	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	WF	WF2	Insert
CTPL08J-SUB	12	8	8	110	16	5.5	4	15	8	1°	2°	5.5	CTP..	CTP..
CTPL08-SUB	12	8	8	120	16	5.5	4	15	8	1°	2°	5.5	CTP..	CTP..
CTPL10GX-SUB	12	10	10	85	16	5.5	2	15	10	1°	2°	5.5	CTP..	CTP..
CTPL12GX-SUB	12	12	12	85	16	5.5	-	-	12	1°	2°	5.5	CTP..	CTP..

### SPARE PARTS



Designation	Clamp screw	Wrench (for Clamp screw)
CTPL*-SUB	LRIS-4*5	LLR-25S

Reference pages : Inserts → **6-95 - 6-100**



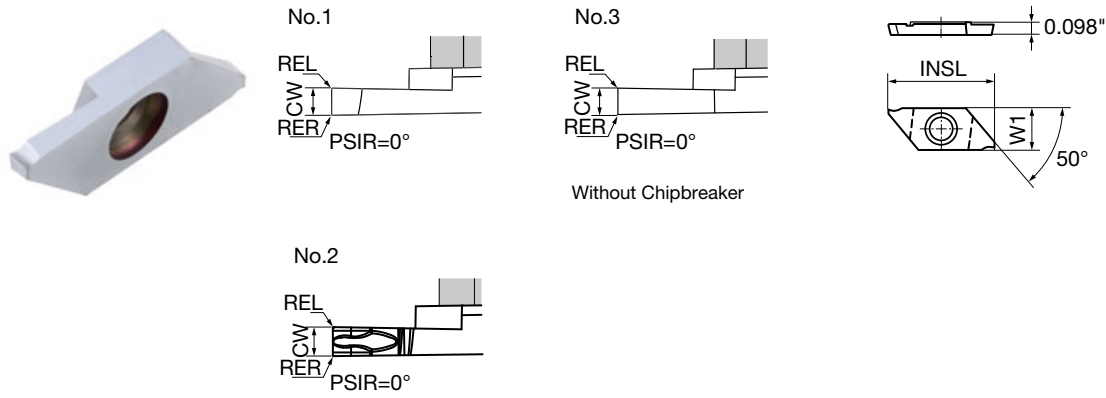
<b>P</b> Steel	☆	☆	★		★	☆		
<b>M</b> Stainless	★	☆	☆	★		☆		
<b>N</b> Non-ferrous						☆	★	
<b>S</b> Superalloys	★	☆	☆					
<b>H</b> Hard materials	☆		★					

★ : First choice  
☆ : Second choice

Designation	HAND	Coated						Uncoated	Mirror finish	CUTDIA (in)	CW (mm)	CW (in)	INSL (in)	W1 (in)	LE (in)	PSIRR	REL (in)	RER (in)	Figure
		DM4	DT4	QM3	ST4	VM1	ZM3	KM1											
CTP05FR-SH	R						●		0.197	0.5	0.020	0.787	0.315	0.007	16°	0.002	0.002	1	
CTP07FR	R		●				●		0.315	0.7	0.028	0.787	0.315	0.009	16°	0.002	0.002	1	
CTP10FR	R		●				●		0.472	1	0.039	0.787	0.315	0.013	16°	0.002	0.002	1	
CTP10FR-CX	R	●			●				0.472	1	0.039	0.787	0.315	0.013	16°	0.002	0.002	2	
CTP10FR-SH	R		●				●		0.276	1	0.039	0.787	0.315	0.013	16°	0.002	0.002	1	
CTP10FR-TH	R				●				0.472	1	0.039	0.787	0.315	0.013	16°	0.002	0.002	1	
CTP10FRV	R		●			●	●	Ⓜ	0.472	1	0.039	0.787	0.315	0.016	20°	0	-	3	
CTP13FR	R		●				●		0.472	1.3	0.051	0.787	0.315	0.016	16°	0.002	0.002	1	
CTP13FR-CX	R	●			●				0.472	1.3	0.051	0.787	0.315	0.016	16°	0.002	0.002	2	
CTP15FR	R				●	●			0.472	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	1	
CTP15FR-CX	R	●			●				0.472	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	2	
CTP15FR-TH	R				●				0.472	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	1	
CTP15FRV	R					●	●	Ⓜ	0.472	1.5	0.059	0.787	0.315	0.023	20°	0	-	3	
CTP15FRX	R						●		0.472	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	1	
CTP20FR	R					●	●		0.472	2	0.079	0.787	0.315	0.024	16°	0.002	0.002	1	
CTP20FR-TH	R				●				0.472	2	0.079	0.787	0.315	0.024	16°	0.002	0.002	1	
CTP20FRV	R					●	●	Ⓜ	0.472	2	0.079	0.787	0.315	0.03	20°	0	-	3	
CTP20FRX	R						●		0.472	2	0.079	0.787	0.315	0.024	16°	0.002	0.002	1	
CTPX15FR	R		●	●			●		0.472	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	1	
CTPX20FR	R		●	●			●		0.472	2	0.079	0.787	0.315	0.024	16°	0.002	0.002	1	

NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up



P	Steel	☆	☆	★		★	☆		
M	Stainless	★	☆	☆	★		☆		
N	Non-ferrous						☆	★	
S	Superalloys	★	☆	☆					
H	Hard materials	☆		★					

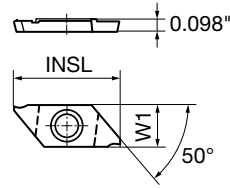
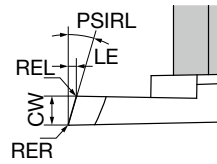
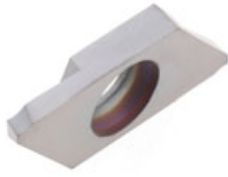
★ : First choice  
☆ : Second choice

Designation	HAND	Coated						Uncoated	Mirror finish	CUTDIA (in)	CW (mm)	CW (in)	INSL (in)	W1 (in)	PSIR	REL (in)	RER (in)	Figure
		DM4	DT4	QM3	ST4	VM1	ZM3	KM1										
CTP05FRN-SH	R						●		0.197	0.5	0.020	0.787	0.315	0°	0.002	0.002	1	
CTP10FRN	R		●				●		0.472	1	0.039	0.787	0.315	0°	0.002	0.002	1	
CTP10FRN-CX	R	●			●				0.472	1	0.039	0.787	0.315	0°	0.002	0.002	2	
CTP10FRN-SH	R		●				●		0.276	1	0.039	0.787	0.315	0°	0.002	0.002	1	
CTP10FRN-TH	R				●				0.472	1	0.039	0.787	0.315	0°	0.002	0.002	1	
CTP13FRN	R		●				●		0.472	1.3	0.051	0.787	0.315	0°	0.002	0.002	1	
CTP13FRN02-CX	R	●			●				0.472	1.3	0.051	0.787	0.315	0°	0.008	0.008	2	
CTP13FRN-CX	R	●			●				0.472	1.3	0.051	0.787	0.315	0°	0.002	0.002	2	
CTP15FRN	R					●	●		0.472	1.5	0.059	0.787	0.315	0°	0.002	0.002	1	
CTP15FRN02-CX	R	●			●				0.472	1.5	0.059	0.787	0.315	0°	0.008	0.008	2	
CTP15FRN-CX	R	●			●				0.472	1.5	0.059	0.787	0.315	0°	0.002	0.002	2	
CTP15FRN-TH	R				●				0.472	1.5	0.059	0.787	0.315	0°	0.002	0.002	1	
CTP15FRNV	R						●	Ⓜ	0.472	1.5	0.059	0.787	0.315	0°	0	0	3	
CTP15FRNX	R						●		0.472	1.5	0.059	0.787	0.315	0°	0.002	0.002	1	
CTP20FRN	R					●	●		0.472	2	0.079	0.787	0.315	0°	0.002	0.002	1	
CTP20FRN-TH	R				●				0.472	2	0.079	0.787	0.315	0°	0.002	0.002	1	
CTP20FRNV	R						●	Ⓜ	0.472	2	0.079	0.787	0.315	0°	0	0	3	
CTP20FRNX	R						●		0.472	2	0.079	0.787	0.315	0°	0.002	0.002	1	
CTPX15FRN	R		●	●					0.472	1.5	0.059	0.787	0.315	0°	0.002	0.002	1	
CTPX20FRN	R		●	●					0.472	2	0.079	0.787	0.315	0°	0.002	0.002	1	

NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up

## CTP-FRK with Chipbreaker



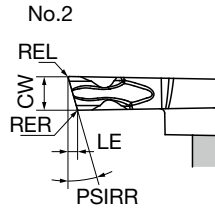
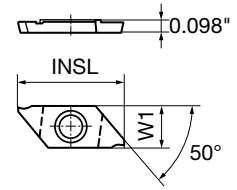
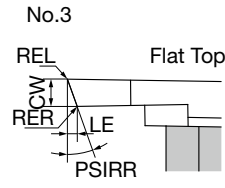
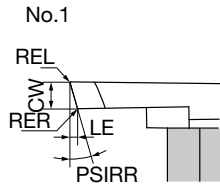
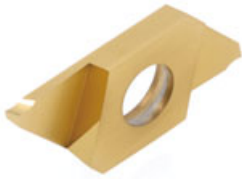
<b>P</b>	Steel	★	★
<b>M</b>	Stainless	★	☆
<b>N</b>	Non-ferrous	★	★
<b>S</b>	Superalloys	★	
<b>H</b>	Hard materials	★	

★ : First choice  
☆ : Second choice

Designation	HAND	Coated		CUTDIA (in)	CW (mm)	CW (in)	INSL (in)	W1 (in)	LE (in)	PSIRR	REL (in)	RER (in)	Figure
		DT4	ZM3										
CTP10FRK	R		●	0.433	1	0.039	0.787	0.315	0.013	16°	0.002	0.002	1
CTP13FRK	R	●	●	0.472	1.3	0.051	0.787	0.315	0.016	16°	0.002	0.002	1
CTP15FRK	R		●	0.433	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	1
CTP20FRK	R		●	0.433	2	0.079	0.787	0.315	0.024	16°	0.002	0.002	2

NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up



Without Chipbreaker

P	Steel	☆	☆	★	★	☆		
M	Stainless	★	☆	☆	★	☆		
N	Non-ferrous					☆	★	
S	Superalloys	★	☆	☆				
H	Hard materials	☆		★				

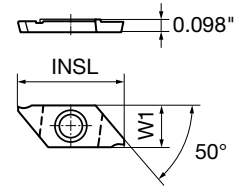
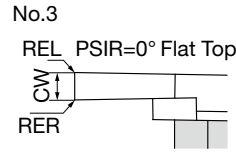
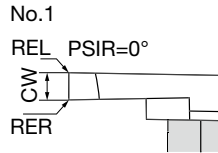
★ : First choice  
☆ : Second choice

Designation	HAND	Coated						Uncoated	Mirror finish	CUTDIA (in)	CW (mm)	CW (in)	INSL (in)	W1 (in)	LE (in)	PSIRR	REL (in)	RER (in)	Figure
		DM4	DT4	QM3	ST4	VM1	ZM3	KM1											
CTP05FLK-SH	L						●		0.197	0.5	0.020	0.787	0.315	0.007	16°	0.002	0.002	1	
CTP10FLK	L		●				●		0.433	1	0.039	0.787	0.315	0.013	16°	0.002	0.002	1	
CTP10FLK-CX	L	●			●				0.433	1	0.039	0.787	0.315	0.013	16°	0.002	0.002	2	
CTP10FLK-SH	L		●				●		0.276	1	0.039	0.787	0.315	0.013	16°	0.002	0.002	1	
CTP10FLK-TH	L				●				0.433	1	0.039	0.787	0.315	0.013	16°	0.002	0.002	1	
CTP13FLK	L		●				●		0.433	1.3	0.051	0.787	0.315	0.016	16°	0.002	0.002	1	
CTP13FLK-CX	L	●			●				0.433	1.3	0.051	0.787	0.315	0.016	16°	0.002	0.002	2	
CTP15FLK	L					●	●		0.433	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	1	
CTP15FLKB	L						●		0.433	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	1	
CTP15FLK-CX	L	●			●				0.433	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	2	
CTP15FLK-TH	L				●				0.433	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	1	
CTP15FLKV	L					●	●	Ⓜ	0.433	1.5	0.059	0.787	0.315	0.023	20°	0	0	3	
CTP20FLK	L					●	●		0.433	2	0.079	0.787	0.315	0.024	16°	0.002	0.002	1	
CTP20FLK-TH	L				●				0.433	2	0.079	0.787	0.315	0.024	16°	0.002	0.002	1	
CTP20FLKV	L					●		Ⓜ	0.433	2	0.079	0.787	0.315	0.03	20°	0	0	3	
CTPX15FLK	L		●	●					0.433	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	1	
CTPX20FLK	L		●	●					0.433	2	0.079	0.787	0.315	0.024	16°	0.002	0.002	1	

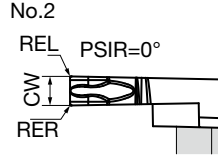
NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up





Without Chipbreaker



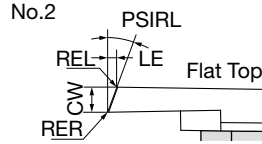
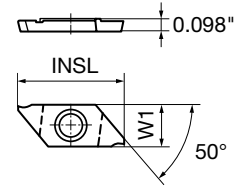
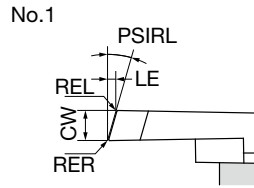
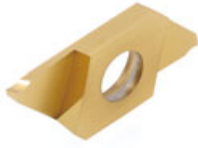
P	Steel	☆	☆	★	☆	★	☆		
M	Stainless	★	☆	☆	★	☆	☆		
N	Non-ferrous	☆	☆	☆	☆	☆	☆	★	
S	Superalloys	★	☆	☆	☆	☆	☆	☆	
H	Hard materials	☆	☆	★	☆	☆	☆	☆	

★ : First choice  
☆ : Second choice

Designation	HAND	Coated						Uncoated	Mirror finish	CUTDIA (in)	CW (mm)	CW (in)	INSL (in)	W1 (in)	REL (in)	RER (in)	Figure
		DM4	DT4	QM3	ST4	VM1	ZM3	KM1									
CTP05FLN-SH	L								0.197	0.5	0.020	0.787	0.315	0.002	0.002	1	
CTP10FLN	L		●						0.472	1	0.039	0.787	0.315	0.002	0.002	1	
CTP10FLN-CX	L	●			●				0.472	1	0.039	0.787	0.315	0.002	0.002	2	
CTP10FLN-SH	L		●						0.276	1	0.039	0.787	0.315	0.002	0.002	1	
CTP10FLN-TH	L				●				0.472	1	0.039	0.787	0.315	0.002	0.002	1	
CTP13FLN	L		●						0.472	1.3	0.051	0.787	0.315	0.002	0.002	1	
CTP13FLN02-CX	L	●			●				0.472	1.3	0.051	0.787	0.315	0.008	0.008	2	
CTP13FLN-CX	L	●			●				0.472	1.3	0.051	0.787	0.315	0.002	0.002	2	
CTP15FLN	L					●	●		0.472	1.5	0.059	0.787	0.315	0.002	0.002	1	
CTP15FLN02-CX	L	●			●				0.472	1.5	0.059	0.787	0.315	0.008	0.008	2	
CTP15FLN-CX	L	●			●				0.472	1.5	0.059	0.787	0.315	0.002	0.002	2	
CTP15FLN-TH	L				●				0.472	1.5	0.059	0.787	0.315	0.002	0.002	1	
CTP15FLNV	L						●	M	0.472	1.5	0.059	0.787	0.315	0	0	3	
CTP20FLN	L					●	●		0.472	2	0.079	0.787	0.315	0.002	0.002	1	
CTP20FLN-TH	L				●				0.472	2	0.079	0.787	0.315	0.002	0.002	1	
CTP20FLNV	L						●	M	0.472	2	0.079	0.787	0.315	0	0	3	
CTPX15FLN	L		●	●					0.472	1.5	0.059	0.787	0.315	0.002	0.002	1	
CTPX20FLN	L		●	●					0.472	2	0.079	0.787	0.315	0.002	0.002	1	

NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up



Without Chipbreaker

<b>P</b>	Steel	☆	★	★
<b>M</b>	Stainless	★	☆	☆
<b>N</b>	Non-ferrous	☆	☆	★
<b>S</b>	Superalloys	★	☆	☆
<b>H</b>	Hard materials	☆	☆	☆

★ : First choice  
☆ : Second choice

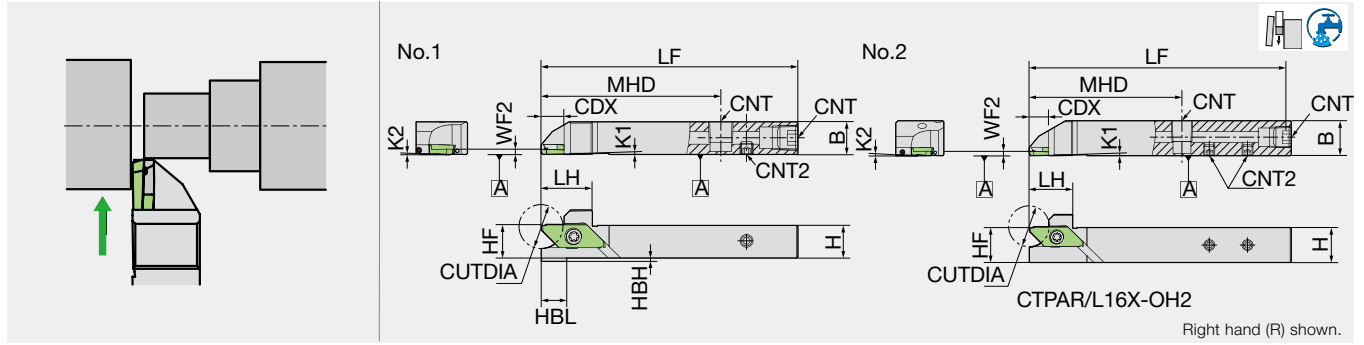
Designation	HAND	Coated			Mirror finish	CUTDIA (in)	CW (mm)	CW (in)	INSL (in)	W1 (in)	LE (in)	PSIRL	REL (in)	RER (in)	Figure
		DT4	VM1	ZM3											
CTP07FL	L			●		0.315	0.7	0.028	0.787	0.315	0.009	16°	0.002	0.002	1
CTP10FL	L			●		0.472	1	0.039	0.787	0.315	0.013	16°	0.002	0.002	1
CTP10FLV	L		●	●	Ⓜ	0.472	1	0.039	0.787	0.315	0.016	20°	0	0	2
CTP13FL	L	●		●		0.472	1.3	0.051	0.787	0.315	0.016	16°	0.002	0.002	1
CTP15FL	L			●		0.472	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	1
CTP15FLV	L		●	●	Ⓜ	0.472	1.5	0.059	0.787	0.315	0.023	20°	0	0	2
CTP20FL	L			●		0.472	2	0.079	0.787	0.315	0.024	16°	0.002	0.002	1
CTP20FLV	L		●	●	Ⓜ	0.472	2	0.079	0.787	0.315	0.030	20°	0	0	2
CTPX15FL	L	●				0.472	1.5	0.059	0.787	0.315	0.018	16°	0.002	0.002	1
CTPX20FL	L	●				0.472	2	0.079	0.787	0.315	0.024	16°	0.002	0.002	1

NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up

# CTPA-OH2

Coolant through (direct connect compatible)



Inch	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert	Figure
CTPAR08H-IN-OH2	0.630	0.500	0.500	3.937	0.787	0.354	0.051	0.394	0.500	1°	2°	2.756	0.079	NPT1/8	M5	CTPA.. TBPA..	1
CTPAR10X-IN-OH2	0.630	0.625	0.625	4.724	0.787	0.354	-	-	0.625	1°	2°	2.756	0.079	NPT1/8	M5	CTPA.. TBPA..	2
CTPAL08H-IN-OH2	0.630	0.500	0.500	3.937	0.787	0.354	0.051	0.394	0.500	1°	2°	2.756	0.079	NPT1/8	M5	CTPA.. TBPA..	1
CTPAL10X-IN-OH2	0.630	0.625	0.625	4.724	0.787	0.354	-	-	0.625	1°	2°	2.756	0.079	NPT1/8	M5	CTPA.. TBPA..	2

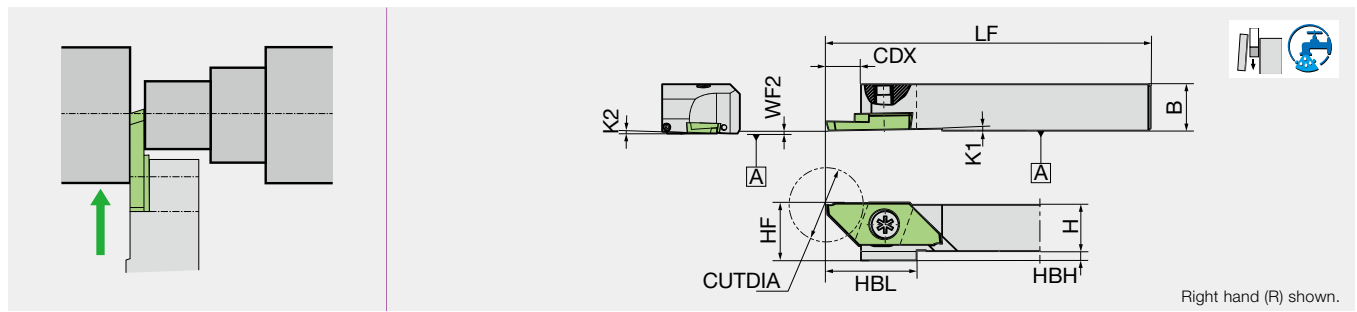
Metric	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	CNT	CNT2	Insert	Figure
CTPAR12H-OH2	16	12	12	100	19.5	9	2	10	12	1°	2°	70	2	Rc1/8	M5	CTPA.. TBPA..	1
CTPAR16X-OH2	16	16	16	120	19.5	9	-	-	16	1°	2°	70	2	Rc1/8	M5	CTPA.. TBPA..	2
CTPAL12H-OH2	16	12	12	100	19.5	9	10	10	12	1°	2°	70	2	Rc1/8	M5	CTPA.. TBPA..	1
CTPAL16X-OH2	16	16	16	120	19.5	9	-	-	16	1°	2°	70	2	Rc1/8	M5	CTPA.. TBPA..	2

**SPARE PARTS**

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
CTPAR/L08H-IN-OH2	LRIS-4*12PW	SPNPT1/8	SS0505SC	CLR-15S	LW-2.5
CTPAR/L10X-IN-OH2	LRIS-4*12PW	SPNPT1/8L	SS0505SC	CLR-15S	LW-2.5
CTPAR**-OH2	LRIS-4*12PW	SPR1/8	SS0505SC	CLR-15S	LW-2.5

Grade 1  
 Insert 2  
 Ext. Toolholder 3  
 Int. Toolholder 4  
 Threading 5  
 Grooving 6  
 Shaper 7  
 Endmill 8  
 Drilling Tool 9  
 Technical Reference 10

## CTPAR/L



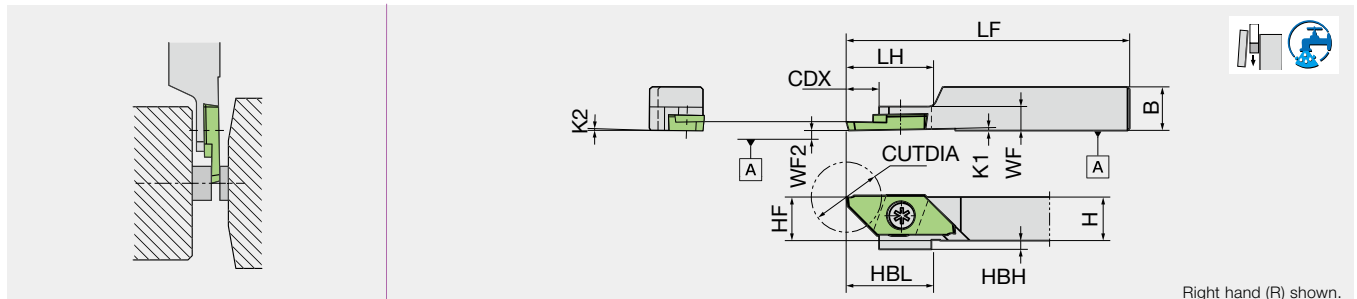
Inch	CUTDIA	H	B	LF	CDX	HBH	HBL	HF	K1	K2	WF2	Insert	
CTPAR06-IN	0.630	0.375	0.375	4.724	0.295	0.078	0.768	0.375	1°	2°	0	CTPA..	TBPA..
CTPAR08-IN	0.630	0.500	0.500	4.724	0.295	-	-	0.500	1°	2°	0	CTPA..	TBPA..
CTPAR10-IN	0.630	0.625	0.625	4.724	0.295	-	-	0.625	1°	2°	0	CTPA..	TBPA..
CTPAL06-IN	0.630	0.375	0.375	4.724	0.295	0.078	0.768	0.375	1°	2°	0	CTPA..	TBPA..
CTPAL08-IN	0.630	0.500	0.500	4.724	0.295	-	-	0.500	1°	2°	0	CTPA..	TBPA..
CTPAL10-IN	0.630	0.625	0.625	4.724	0.295	-	-	0.625	1°	2°	0	CTPA..	TBPA..
Metric	CUTDIA	H	B	LF	CDX	HBH	HBL	HF	K1	K2	WF2	Insert	
CTPAR10	16	10	10	120	7.5	2	19.5	10	1°	2°	0	CTPA..	TBPA..
CTPAR12	16	12	12	120	7.5	-	-	12	1°	2°	0	CTPA..	TBPA..
CTPAR12GX	16	12	12	85	7.5	-	-	12	1°	2°	0	CTPA..	TBPA..
CTPAR16	16	16	16	120	7.5	-	-	16	1°	2°	0	CTPA..	TBPA..
CTPAR20F	16	20	20	80	7.5	-	-	20	1°	2°	0	CTPA..	TBPA..
CTPAL10	16	10	10	120	7.5	2	19.5	10	1°	2°	0	CTPA..	TBPA..
CTPAL12	16	12	12	120	7.5	-	-	12	1°	2°	0	CTPA..	TBPA..
CTPAL12GX	16	12	12	85	7.5	-	-	12	1°	2°	0	CTPA..	TBPA..
CTPAL16	16	16	16	120	7.5	-	-	16	1°	2°	0	CTPA..	TBPA..
CTPAL20F	16	20	20	80	7.5	-	-	20	1°	2°	0	CTPA..	TBPA..

### SPARE PARTS

Designation	Clamp screw	Wrench (for Clamp screw)
CTPAR/L06-IN, CTPAR/L10	LRIS-4*10PW	CLR-15S
CTPAR/L08-IN, CTPAR/L10-IN, CTPAR/L12**, CTPAR/L16	LRIS-4*12PW	CLR-15S
CTPAR/L20F	LRIS-4*10	LLR-25S

## CTPAR-SUB

For Sub-Spindle



Inch	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	Insert
CTPAR06-IN-SUB	0.630	0.375	0.375	4.724	0.787	0.295	0.078	0.768	0.375	1°	2°	-	0.217	CTPA..
CTPAR08-IN-SUB	0.630	0.500	0.500	4.724	0.787	0.295	-	-	0.500	1°	2°	-	0.217	CTPA..
CTPAR10-IN-SUB	0.630	0.625	0.625	4.724	0.787	0.295	-	-	0.625	1°	2°	-	0.217	CTPA..
Metric	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	MHD	WF2	Insert
CTPAR10GX-SUB	16	10	10	85	20	7.5	2	19.5	10	1°	2°	5.5	0	CTPA..
CTPAR12GX-SUB	16	12	12	85	20	7.5	-	-	12	1°	2°	5.5	0	CTPA..
CTPAR12KX-SUB	16	12	12	120	20	7.5	-	-	12	1°	2°	5.5	0	CTPA..

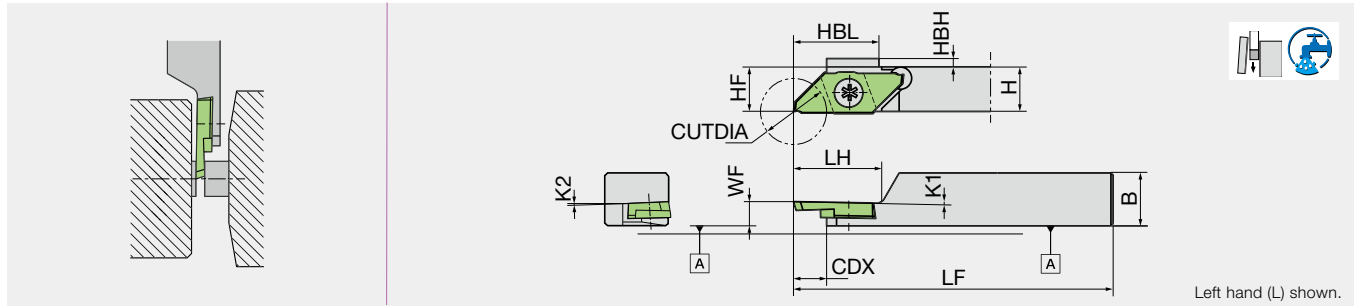
### SPARE PARTS

Designation	Clamp screw	Wrench (for Clamp screw)
CTPAR**-IN-SUB, CTPAR**-SUB	LRIS-4*5	LLR-25S

Reference pages : Inserts → 6-103 - 6-106, 3-118 - 3-119

# CTPAL-SUB

For Sub-Spindle

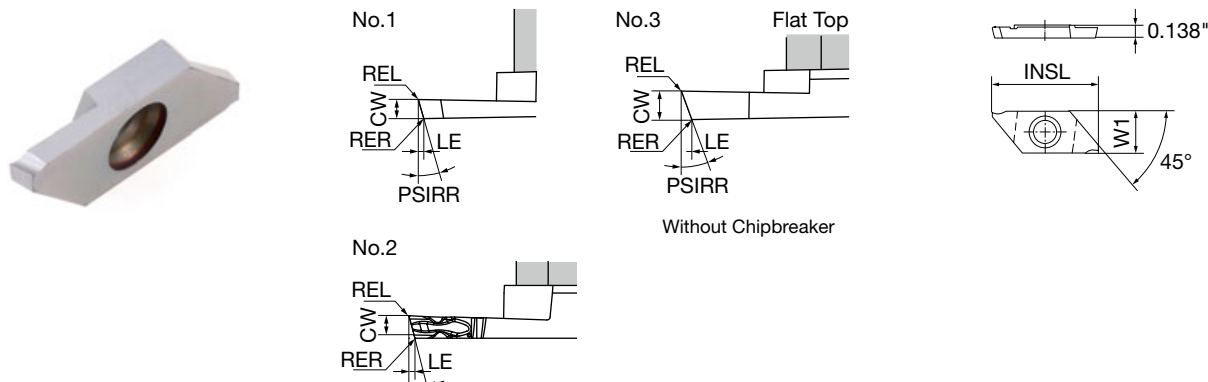


Inch	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	WF	Insert
CTPAL06-IN-SUB	0.630	0.375	0.375	4.724	0.787	0.295	0.078	0.768	0.375	1°	2°	0.217	CTPA..
CTPAL08-IN-SUB	0.630	0.500	0.500	4.724	0.787	0.295	-	-	0.500	1°	2°	0.217	CTPA..
CTPAL10-IN-SUB	0.630	0.625	0.625	4.724	0.787	0.295	-	-	0.625	1°	2°	0.217	CTPA..
Metric	CUTDIA	H	B	LF	LH	CDX	HBH	HBL	HF	K1	K2	WF	Insert
CTPAL10GX-SUB	16	10	10	85	20	7.5	2	19.5	10	1°	2°	5.5	CTPA..
CTPAL12GX-SUB	16	12	12	85	20	7.5	-	-	12	1°	2°	5.5	CTPA..
CTPAL12KX-SUB	16	12	12	120	20	7.5	-	-	12	1°	2°	5.5	CTPA..
CTPAL16GX-SUB	16	16	16	85	28	7.5	-	-	16	1°	2°	5.5	CTPA..
CTPAL16KX-SUB	16	16	16	120	28	7.5	-	-	16	1°	2°	5.5	CTPA..

**SPARE PARTS**

Designation	Clamp screw	Wrench (for Clamp screw)
CTPAL*-IN-SUB, CTPAL*-SUB	LRIS-4*5	LLR-25S

## INSERT CTPA-FR



P Steel	☆	☆	★	☆	☆	☆	☆
M Stainless	★	☆	☆	★	☆	☆	☆
N Non-ferrous	☆	☆	☆	☆	☆	☆	☆
S Superalloys	★	☆	☆	☆	☆	☆	☆
H Hard materials	☆	☆	★	☆	☆	☆	☆

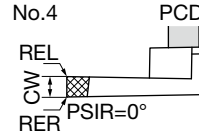
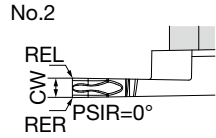
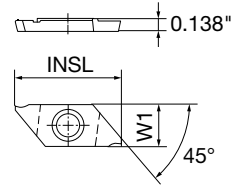
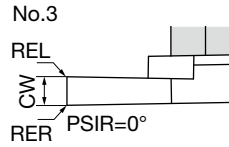
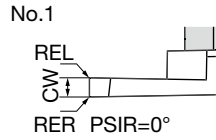
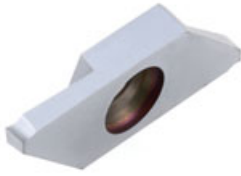
★ : First choice  
☆ : Second choice

Designation	HAND	Coated						Uncoated	Mirror finish	CUTDIA (in)	CW (mm)	CW (in)	INSL (in)	W1 (in)	LE (in)	PSIRR	REL (in)	RER (in)	Figure
		DM4	DT4	QM3	ST4	VM1	ZM3	KM1											
CTPA07FR	R								0.315	0.7	0.028	0.984	0.370	0.009	16°	0.002	0.002	1	
CTPA10FR	R								0.472	1	0.039	0.984	0.370	0.013	16°	0.002	0.002	1	
CTPA15FR	R		●	●		●	●		0.630	1.5	0.059	0.984	0.370	0.018	16°	0.002	0.002	1	
CTPA15FR-CX	R	●			●				0.630	1.5	0.059	0.984	0.370	0.018	16°	0.002	0.002	2	
CTPA15FR-TH	R				●				0.630	1.5	0.059	0.984	0.370	0.018	16°	0.002	0.002	1	
CTPA20FR	R		●	●		●	●		0.630	2	0.079	0.984	0.370	0.024	16°	0.002	0.002	1	
CTPA20FR-TH	R				●				0.630	2	0.079	0.984	0.370	0.024	16°	0.002	0.002	1	
CTPA20FRV	R					●	●	Ⓜ	0.630	2	0.079	0.984	0.370	0.030	20°	0	0	3	

NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up

Reference pages : Toolholders → 6-101 - 6-103



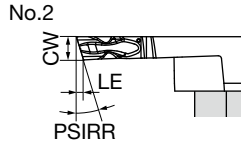
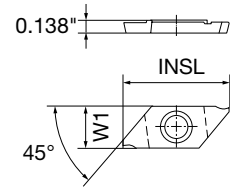
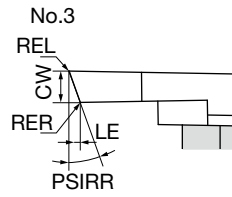
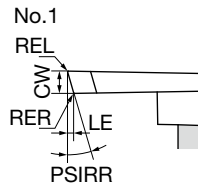
<b>P</b>	Steel	☆	☆	★	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
<b>M</b>	Stainless	★	☆	☆	★	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
<b>N</b>	Non-ferrous	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
<b>S</b>	Superalloys	★	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
<b>H</b>	Hard materials	☆	☆	★	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆

★ : First choice  
☆ : Second choice

Designation	HAND	Coated						Uncoated	PCD	Mirror finish	CUTDIA (in)	CW (mm)	CW (in)	INSL (in)	W1 (in)	PSIR	REL (in)	RER (in)	Figure
		DM4	DT4	QM3	ST4	VM1	ZM3	KM1	PD1										
CTPA07FRN	R									0.315	0.7	0.028	0.984	0.370	0°	0.002	0.002	1	
CTPA10FRN	R									0.472	1	0.039	0.984	0.370	0°	0.002	0.002	1	
CTPA15FRN	R		●	●		●	●			0.630	1.5	0.059	0.984	0.370	0°	0.002	0.002	1	
CTPA15FRN-CX	R	●			●					0.630	1.5	0.059	0.984	0.370	0°	0.002	0.002	2	
CTPA15FRN-TH	R				●					0.630	1.5	0.059	0.984	0.370	0°	0.002	0.002	1	
CTPA20FRN	R		●	●		●	●			0.630	2	0.079	0.984	0.370	0°	0.002	0.002	1	
CTPA20FRN-P	R								●	0.630	2	0.079	0.984	0.370	0°	0.004	0.004	4	
CTPA20FRN-TH	R				●					0.630	2	0.079	0.984	0.370	0°	0.002	0.002	1	
CTPA20FRNV	R						●		Ⓜ	0.630	2	0.079	0.984	0.370	0°	0	0	3	
CTPA20FRS	R						●			0.630	2	0.079	0.984	0.370	0°	0.002	0.002	3	
CTPA30FRN	R			●						0.630	3	0.118	0.984	0.370	0°	0.002	0.002	1	

NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up



Without Chipbreaker

<b>P</b>	Steel	☆	☆	★	★	☆	
<b>M</b>	Stainless	★	☆	☆	★	☆	
<b>N</b>	Non-ferrous					☆	
<b>S</b>	Superalloys	★	☆	☆			★
<b>H</b>	Hard materials	☆		★			

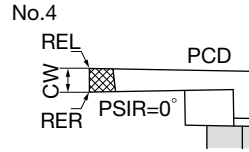
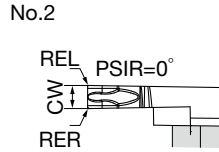
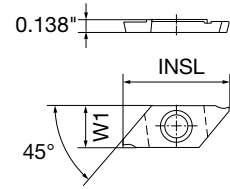
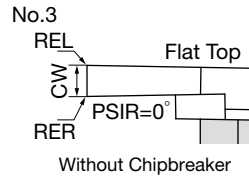
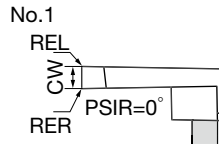
★ : First choice  
☆ : Second choice

Designation	HAND	Coated						Uncoated	Mirror finish	CUTDIA (in)	CW (mm)	CW (in)	INSL (in)	W1 (in)	LE (in)	PSIRR	REL (in)	RER (in)	Figure
		DM4	DT4	QM3	ST4	VM1	ZM3	KM1											
CTPA07FLK	L								0.256	0.7	0.028	0.984	0.370	0.009	16°	0.002	0.002	1	
CTPA10FLK	L								0.433	1	0.039	0.984	0.370	0.013	16°	0.002	0.002	1	
CTPA10FLKD	L								0.630	1	0.039	0.984	0.370	0.013	16°	0.002	0.002	1	
CTPA15FLK	L		●	●		●	●		0.571	1.5	0.059	0.984	0.370	0.018	16°	0.002	0.002	1	
CTPA15FLK-CX	L	●			●				0.571	1.5	0.059	0.984	0.370	0.018	16°	0.002	0.002	2	
CTPA15FLK-TH	L				●				0.571	1.5	0.059	0.984	0.370	0.018	16°	0.002	0.002	1	
CTPA20FLK	L		●	●		●	●		0.571	2	0.079	0.984	0.370	0.024	16°	0.002	0.002	1	
CTPA20FLK-TH	L				●				0.571	2	0.079	0.984	0.370	0.024	16°	0.002	0.002	1	
CTPA20FLKV	L					●	●	Ⓜ	0.571	2	0.079	0.984	0.370	0.030	20°	0	0	3	

NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up

# CTPA-FLN



<b>P</b> Steel	☆	☆	★		★	☆							
<b>M</b> Stainless	★	☆	☆	★		☆							
<b>N</b> Non-ferrous						☆	★						
<b>S</b> Superalloys	★	☆	☆										
<b>H</b> Hard materials	☆		★										

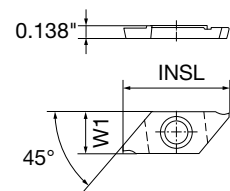
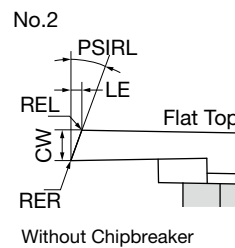
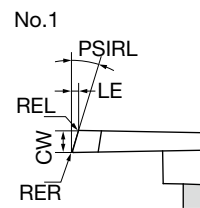
★ : First choice  
☆ : Second choice

Designation	HAND	Coated						Uncoated	PCD	Mirror finish	CUTDIA (in)	CW (mm)	CW (in)	INSL (in)	W1 (in)	PSIR	REL (in)	RER (in)	Figure
		DM4	DT4	QM3	ST4	VM1	ZM3	KM1	PD1										
CTPA10FLN	L										0.472	1	0.039	0.984	0.370	0°	0.002	0.002	1
CTPA10FLND	L										0.630	1	0.039	0.984	0.370	0°	0.002	0.002	1
CTPA15FLN	L		●	●		●	●				0.630	1.5	0.059	0.984	0.370	0°	0.002	0.002	1
CTPA15FLN-CX	L	●				●					0.630	1.5	0.059	0.984	0.370	0°	0.002	0.002	2
CTPA15FLN-TH	L					●					0.630	1.5	0.059	0.984	0.370	0°	0.002	0.002	1
CTPA20FLN	L		●	●		●	●				0.630	2	0.079	0.984	0.370	0°	0.002	0.002	1
CTPA20FLN-P	L								●		0.630	2	0.079	0.984	0.370	0°	0.004	0.004	4
CTPA20FLN-TH	L					●					0.630	2	0.079	0.984	0.370	0°	0.002	0.002	1
CTPA20FLNV	L							●		M	0.630	2	0.079	0.984	0.370	0°	0	0	3
CTPA20FLS	L							●			0.630	2	0.079	0.984	0.370	0°	0.002	0.002	3
CTPA30FLN	L			●							0.630	3	0.118	0.984	0.370	0°	0.002	0.002	1

NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up

# CTPA-FL



<b>P</b> Steel	☆	★	★
<b>M</b> Stainless	★	☆	☆
<b>N</b> Non-ferrous			★
<b>S</b> Superalloys	☆		
<b>H</b> Hard materials	☆		

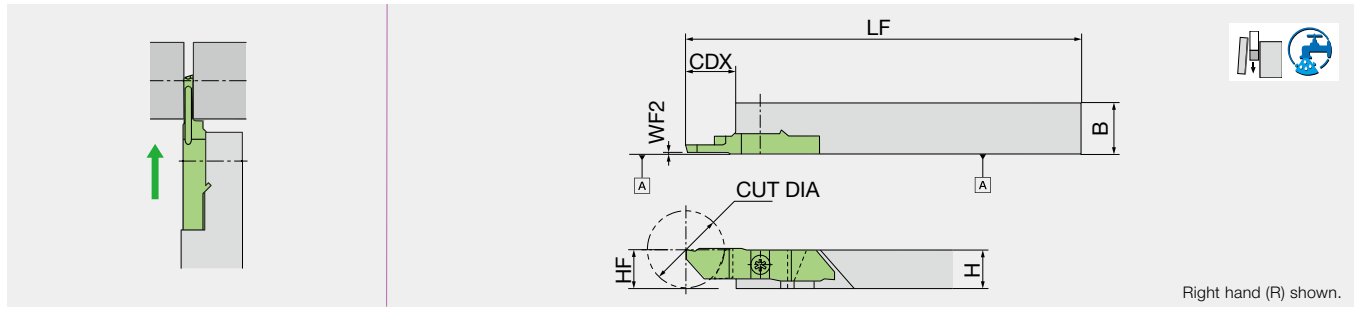
★ : First choice  
☆ : Second choice

Designation	HAND	Coated			Mirror finish	CUTDIA (in)	CW (mm)	CW (in)	INSL (in)	W1 (in)	LE (in)	PSIRL	REL (in)	RER (in)	Figure
		DT4	VM1	ZM3											
CTPA07FL	L			●		0.315	0.7	0.028	0.984	0.370	0.009	16°	0.002	0.002	1
CTPA10FL	L			●		0.472	1	0.039	0.984	0.370	0.013	16°	0.002	0.002	1
CTPA15FL	L	●		●		0.630	1.5	0.059	0.984	0.370	0.018	16°	0.002	0.002	1
CTPA20FL	L	●		●		0.630	2	0.079	0.984	0.370	0.024	16°	0.002	0.002	1
CTPA20FLV	L		●		M	0.630	2	0.079	0.984	0.370	0.030	20°	0	0	2

NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up





Right hand (R) shown.

Inch	CUTDIA	H	B	LF	CDX	HF	WF2	Insert
CTPWR08-IN	0.787	0.500	0.630	4.724	0.591	0.498	0.024	CTPW..
CTPWR10-IN	0.787	0.625	0.630	4.724	0.591	0.623	0.024	CTPW..
CTPWL08-IN	0.787	0.500	0.630	4.724	0.591	0.498	0.024	CTPW..
CTPWL10-IN	0.787	0.625	0.630	4.724	0.591	0.623	0.024	CTPW..
Metric	CUTDIA	H	B	LF	CDX	HF	WF2	Insert
CTPWR10	20	10	16	120	15	9.95	0.6	CTPW..
CTPWR12	20	12	16	120	15	11.95	0.6	CTPW..
CTPWR16	20	16	16	120	15	15.95	0.6	CTPW..
CTPWR20	20	20	20	120	15	19.95	0.6	CTPW..
CTPWL10A	20	10	12	120	15	9.95	0.6	CTPW..
CTPWL12A	20	12	12	120	15	11.95	0.6	CTPW..
CTPWL16	20	16	16	120	15	15.95	0.6	CTPW..
CTPWL20	20	20	20	120	15	19.95	0.6	CTPW..

SPARE PARTS



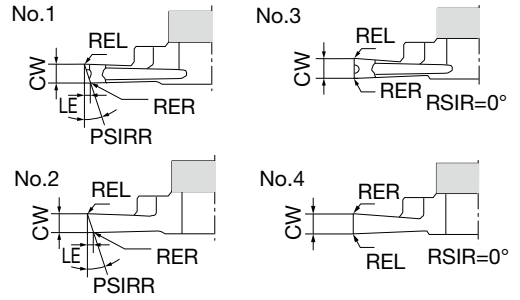
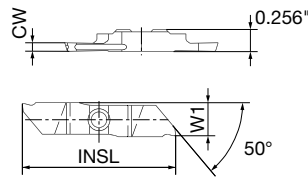
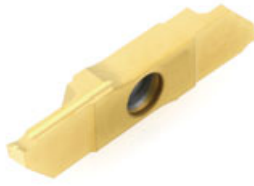
Designation	Clamp screw	Wrench (for Clamp screw)
CTPWR/L**	LRIS-4*10	LLR-25S

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

# INSERT

## CTPW25-R



P	Steel	★	
M	Stainless	★	
N	Non-ferrous	★	
S	Superalloys		
H	Hard materials		

★ : First choice  
☆ : Second choice

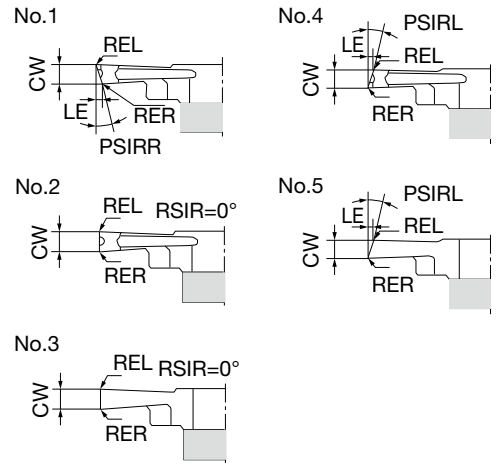
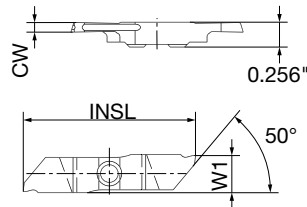


Designation	Coated	Mirror finish	CUTDIA (in)	Chip-breaker	CW (mm)	CW (in)	INSL (in)	W1 (in)	LE (in)	PSIR	PSIRL	PSIRR	REL (in)	RER (in)	Figure
	ZM3														
CTPW25FR	●		0.787	Yes	2.5	0.098	(1.772)	0.382	0.032	-	-	17°	0.008	0.002	1
CTPW25FRP	●	Ⓜ	0.787	No	2.5	0.098	(1.772)	0.382	0.032	-	-	17°	0.008	0.002	2
CTPW25FRN	●		0.787	Yes	2.5	0.098	(1.772)	0.382	-	0°	-	-	0.002	0.002	3
CTPW25FRNV	●	Ⓜ	0.787	No	2.5	0.098	(1.772)	0.382	-	0°	-	-	0	0	4

NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up

## CTPW25-L



P	Steel	★	
M	Stainless	★	
N	Non-ferrous	★	
S	Superalloys		
H	Hard materials		

★ : First choice  
☆ : Second choice

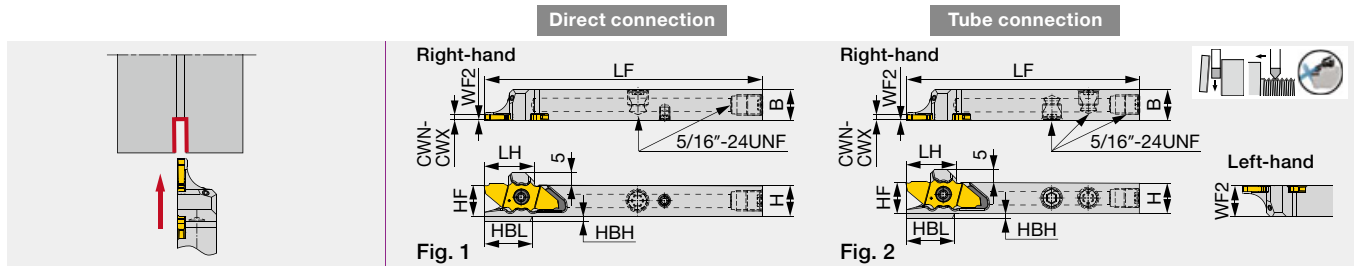
Designation	Coated	Mirror finish	CUTDIA (in)	Chip-breaker	CW (mm)	CW (in)	INSL (in)	W1 (in)	LE (in)	PSIR	PSIRL	PSIRR	REL (in)	RER (in)	Figure
	ZM3														
CTPW25FLK	●		0.787	Yes	2.5	0.098	(1.772)	0.382	0.032	-	-	17°	0.008	0.002	1
CTPW25FLN	●		0.787	Yes	2.5	0.098	(1.772)	0.382	-	0°	-	-	0.002	0.002	2
CTPW25FLNV	●	Ⓜ	0.787	No	2.5	0.098	(1.772)	0.382	-	0°	-	-	0	0	3
CTPW25FL	●		0.787	Yes	2.5	0.098	(1.772)	0.382	0.032	-	17°	-	0.008	0.002	4
CTPW25FLP	●	Ⓜ	0.787	No	2.5	0.098	(1.772)	0.382	0.032	-	17°	-	0.008	0.002	5

NOTE: All angles shown are obtained when insert is set in the holder.

● : Line up

Reference pages : Toolholders → **6-107**

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

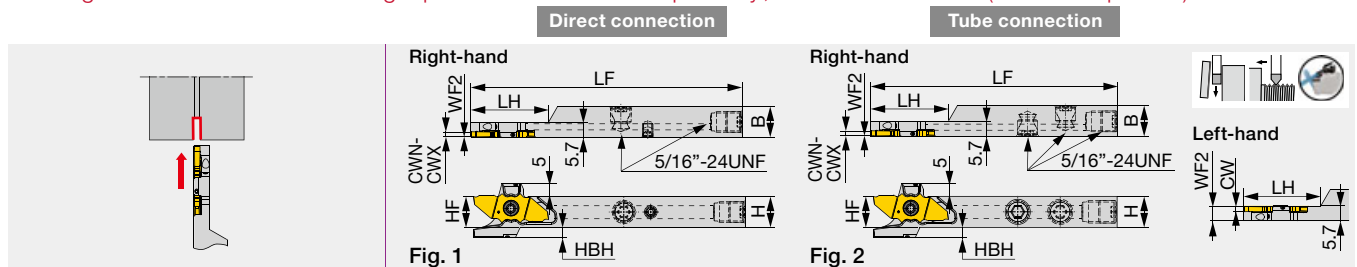
  

Metric	CWN	CWX	H	B	LF <sup>(1)</sup>	LH <sup>(1)</sup>	HF	WF2 <sup>(2)</sup>	HBL <sup>(1)</sup>	HBH	Insert	Torque*	Fig.
JSXXR/L1012H09-CHP <sup>(3)</sup>	0.6	2.5	10	12	102	19.2	10	0.2/11.8	18.7	3	JX**06...,12...,16...,20...	1.2	1
JSXXR/L1212F09-CHP	0.6	2.5	12	12	85	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16...,20...	1.2	2
JSXXR/L1212X09-CHP <sup>(3)</sup>	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 <sup>(3)</sup>	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 <sup>(1)</sup>	LH <sup>(1)</sup>	HF	WF2 <sup>(2)</sup>	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 <sup>(1)</sup>	LH <sup>(1)</sup>	HF	WF2 <sup>(2)</sup>	HBH	Insert	Torque*	Fig.
JSXXR/L1212F09-S-CHP <sup>(4)</sup>	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 <sup>(3),(4)</sup>	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 <sup>(3)</sup>	0.6	2.5	12	12	120	30	12	0.2/5.5	2	JX**06...,12...,16...,20...	1.2	1
JSXXR/L1616X09-S-CHP <sup>(3),(4)</sup>	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 <sup>(3)</sup>	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...).

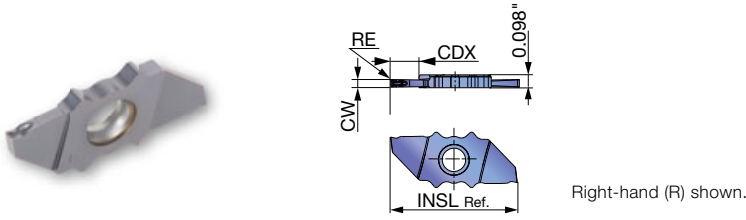
**SPARE PARTS**

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 → 6-110, 6-111  
 Standard cutting conditions → 6-112, 6-113

# INSERT

## JXPS\*\*R/L-F (with 3D chipbreaker, sharp edge)



P	Steel	★					
M	Stainless	★					
K	Cast iron	★					
N	Non-ferrous						
S	Superalloys	★					
H	Hard materials						

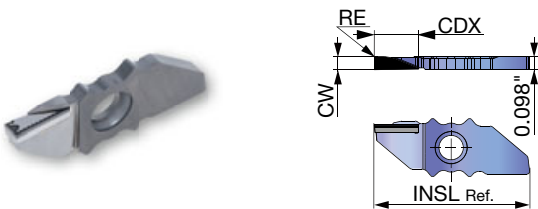
★ : First choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated					CUTDIA (in)	CDX* (in)	INSL (in)
					SH725							
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						

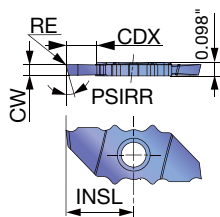
★ : First choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	PCD					CDX (in)	INSL (in)
					DX110						
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 → 6-109, Standard cutting conditions → 6-112, 6-113

# JXPG\*\*R/L-F (sharp edge)



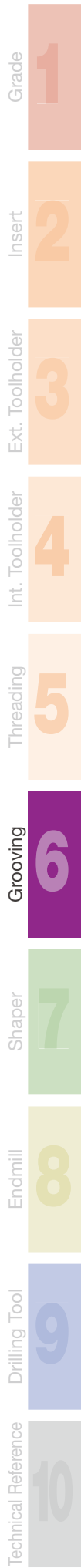
Right hand (R) shown.

<b>P</b>	Steel	★					
<b>M</b>	Stainless	★					
<b>K</b>	Cast iron	★					
<b>N</b>	Non-ferrous	★					
<b>S</b>	Superalloys	★					
<b>H</b>	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	0.002	●					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°

● : Line-up  
CUTDIA: Max. parting-off dia.  
Packing quantity = 5 pcs.



# STANDARD CUTTING CONDITIONS

## Parting, Grooving

ISO	Workpiece materials	Grades	Cutting speed Vc (sfm)	Feed f (ipr)
<b>P</b>	Low carbon steels 1015, etc.	SH725	164 - 656	0.00039 - 0.0020
	Carbon steels, Alloy steels 1055, etc.	SH725	164 - 656	0.00039 - 0.0020
	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 656	0.00039 - 0.0020
<b>M</b>	Stainless steels 304, etc.	SH725	164 - 656	0.00039 - 0.0020
<b>N</b>	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0020
	Copper alloy C2600, C280C, etc.	SH725	328 - 656	0.00039 - 0.0020
<b>S</b>	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.00039 - 0.0020
	Superalloys Inconel718, etc.	SH725	98 - 262	0.00039 - 0.0020



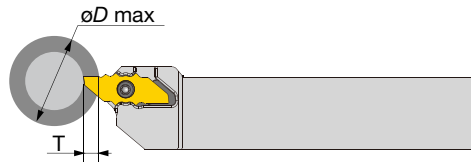
## For aluminium and non-ferrous metal PCD insert

ISO	Workpiece materials	Grades	Operation	Cutting speed Vc (sfm)	Feed f (ipr)	Depth of cut ap (in)
<b>N</b>	Aluminum alloys 5056, 6061, etc.	DX110	Grooving	328 - 984	0.0012 - 0.0059	-
		DX110	Turning	328 - 984	0.0012 - 0.0059	< 0.236"



## Maximum grooving depths (T) in relation to workpiece diameters (øD max) without interference

Maximum grooving depth (T) is limited relative to workpiece diameter (øD max) to avoid interference between workpiece and insert.

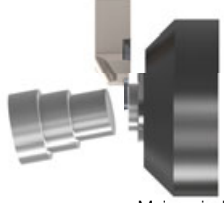
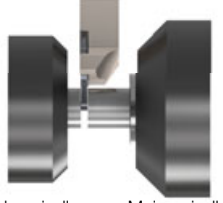
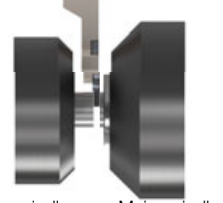
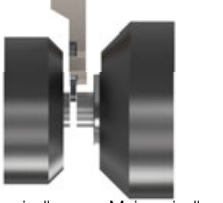


Grooving depths (T) and workpiece diameters (øD max) for each insert

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)

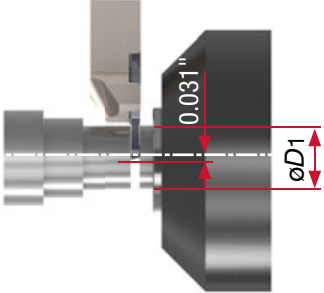
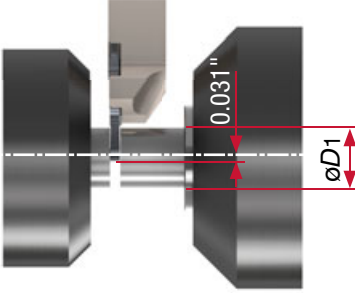
## HOW TO SELECT TOOLS

Application	Large-diameter machining of workpiece with rigidity		Small-diameter machining of workpiece with short overhang	
	Main-spindle tooling	Sub-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
 <p>Main spindle</p> <p>Position of parting-off is at the side of the main spindle</p>	 <p>Sub-spindle Main spindle</p> <p>Position of parting-off is at the side of the sub-spindle</p>	 <p>Sub-spindle Main spindle</p> <p>Position of parting-off is at the side of the main spindle</p>	 <p>Sub-spindle Main spindle</p> <p>Position of parting-off is at the side of the sub-spindle</p>	
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

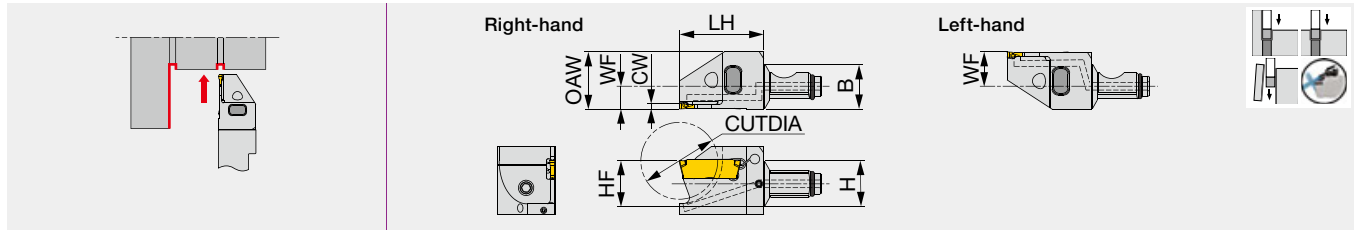
## MAX. PARTING-OFF DIA. & DEPTH

Main-spindle tooling	Sub-spindle tooling
 <p>Main spindle</p>	 <p>Sub-spindle Main spindle</p>

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.

Grade  
1  
Insert  
2  
Ext. Toolholder  
3  
Int. Toolholder  
4  
Threading  
5  
Grooving  
6  
Shaper  
7  
Endmill  
8  
Drilling Tool  
9  
Technical Reference  
10

Modular head for external grooving and parting, with high pressure coolant capability



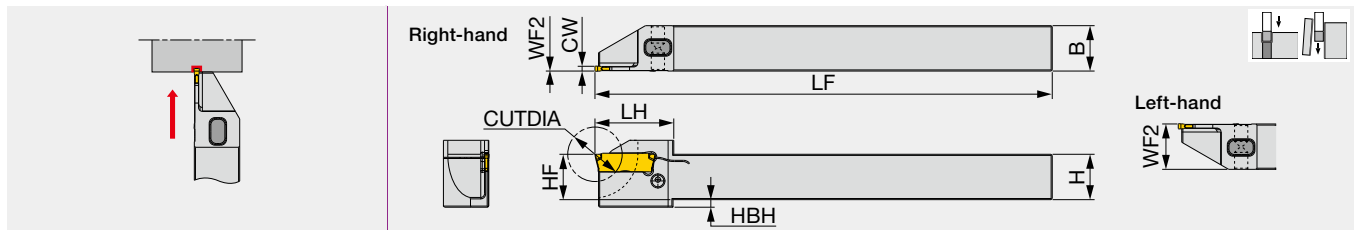
Metric	CW	Seat size	CUTDIA	H	B	LH	HF	WF <sup>(1)</sup>	OAW	Torque*
QC10-JTTER/L1.2D20-CHP	1.2 (0.047")	0.9	12 (0.472")	10 (0.625")	10 (0.625")	17/19 (0.669"/0.748")	10 (0.394")	5/8 (0.197"/0.315")	13 (0.512")	1.5 (1.11)
QC10-JTTER/L1.4D20-CHP	1.4 (0.055")	1	16 (0.630")	10 (0.625")	10 (0.625")	19 (0.748")	10 (0.394")	5/8 (0.197"/0.315")	13 (0.512")	1.5 (1.11)
QC12-JTTER/L1.2D20-CHP	1.2 (0.047")	0.9	20 (0.787")	12 (0.750")	12 (0.750")	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 (0.750")	12 (0.750")	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 (0.750")	12 (0.750")	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: lbs-ft (\*N·m)

### JTTER/L

External grooving and parting toolholder, for Swiss lathes



Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2 <sup>(1)</sup>	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)

### SPARE PARTS

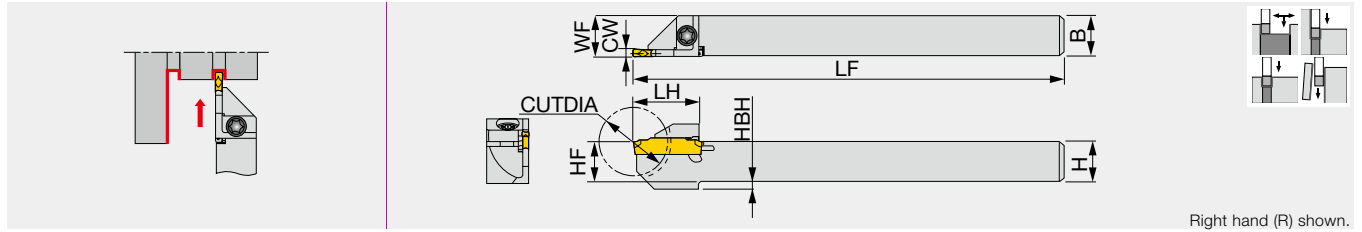
Designation	Clamping screw	Clamping pin	Wrench	O-ring
QC10-JTTER/L...	SSM3.5x0.35	PIN-SL-TC	P-2F	ORSS-0353.5X1.0NBR70
QC12-JTTER/L...	SSM3.5x0.35	PIN-SL-TC	P-2F	ORSS-0454.5X1.0NBR70
JTTER/L1010, 1212...	SSM3.5x0.35	PIN-SL-TC	P-2F	-
JTTER/L1616...	SRM5-24145-RL	PIN-32121	P-2.5F	-

Reference pages: QC12-JTTER/L-CHP, JCTER/L: Inserts → **6-116 - 6-123**  
Shank, Accessory → **3-130 - 3-132**, Standard cutting conditions → **6-124**



## JCTER/L

External grooving and parting toolholder, for Swiss lathes



Inch	CW (in)	CW (mm)	Seat size	CUTDIA	H	B	LF	LH	HF	WF <sup>(1)</sup>	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

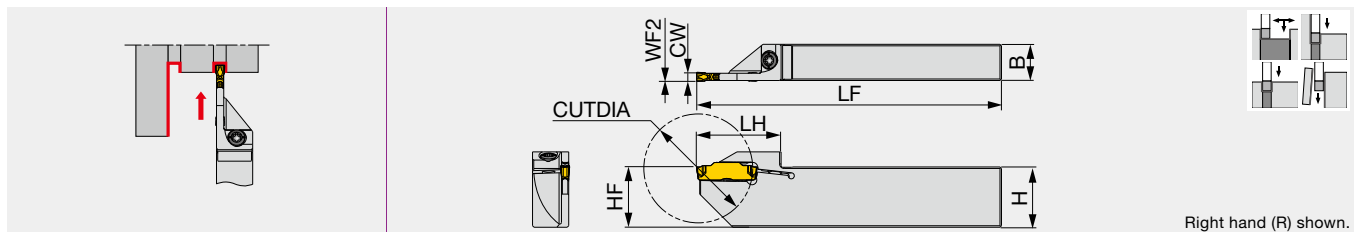
  

Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF <sup>(1)</sup>	HBH	Torque*
JCTER/L1010X1.4T10	1.4	1	20	10	10	120	18	10	10.2	-	3
JCTER/L1212F1.4T12	1.4	1	24	12	12	85	19.5	12	12.2	-	3
JCTER/L1212X1.4T12	1.4	1	24	12	12	120	19.5	12	12.2	-	3
JCTER/L1414-1.4T12	1.4	1	24	14	14	125	19.5	14	14.2	-	3
JCTER/L1616X1.4T16	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



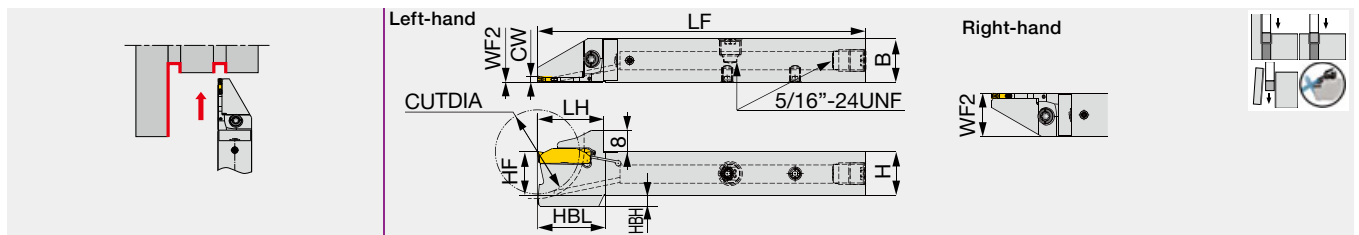
Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2 <sup>(1)</sup>	Torque*
JCTER/L2012H2T18	2	2	36	20	12	100	25	20	0.1	3
JCTER/L2012H3T21	3	3	42	20	12	100	28	20	0.3	3

(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

External grooving and parting-off toolholder, high pressure coolant compatible



Inch	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF2 <sup>(1)</sup>	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 <sup>(1)</sup>	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


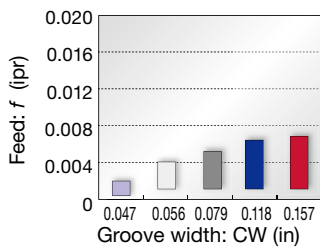
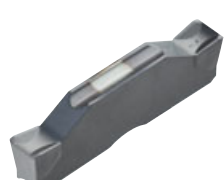
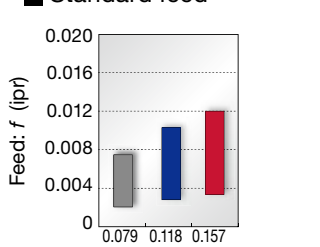
(1) "WF2" value is calculated with groove width "CW" shown in the table. The first value before "/" indicates the WF2 for the right-hand holder and the second value after "/" for the left-hand holder.  
 Torque: Recommended clamping torque: lbs-ft (\*N-m)

**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	-

## CHIPBREAKER GUIDE

### External grooving and parting

<p><b>DGS type (2 corners)</b> <b>SGS type (1 corner)</b></p>  <p>6-118, 6-121</p>	<p><b>For Swiss lathes</b></p> <p>Unique-designed edge and chipbreaker                      Handed insert available                      CW = 0.047" - 0.157"</p>	<p>Standard feed</p>  <p>Feed: f (ipr)</p> <p>Groove width: CW (in)</p>
<p><b>DGM type (2 corners)</b> <b>SGM type (1 corner)</b></p>  <p>6-119, 6-120</p>	<p><b>High fracture resistance</b></p> <p>Smooth chip evacuation                      Well-designed edge with high strength                      Handed insert available                      CW = 0.079" - 0.157"</p>	<p>Standard feed</p>  <p>Feed: f (ipr)</p> <p>Groove width: CW (in)</p>

Reference pages: JCTER/L-CHP: Inserts → **6-116 - 6-123**  
 Standard cutting conditions → **6-119**

**DGL type (2 corners)**

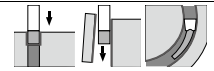
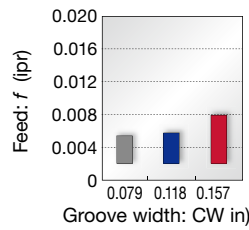
6-123

**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"

## ■ Standard feed

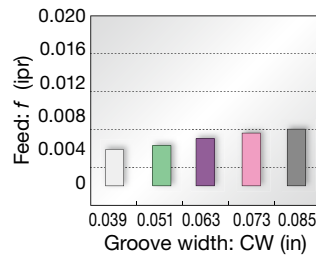
**External grooving****DGE type (2 corners)**

6-122

**For shallow grooves with high accuracy**

Excellent chip control  
CW = 1 - 2.15 mm  
(0.039" - 0.085")

## ■ Standard feed

**DGG type (2 corners)**

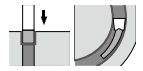
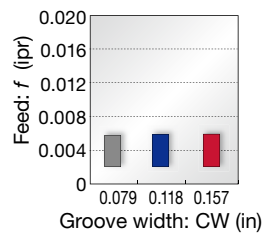
6-122

**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)**

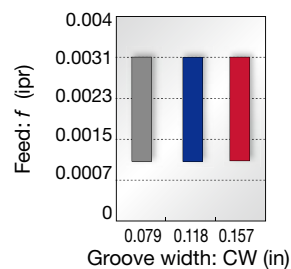
6-123

**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"

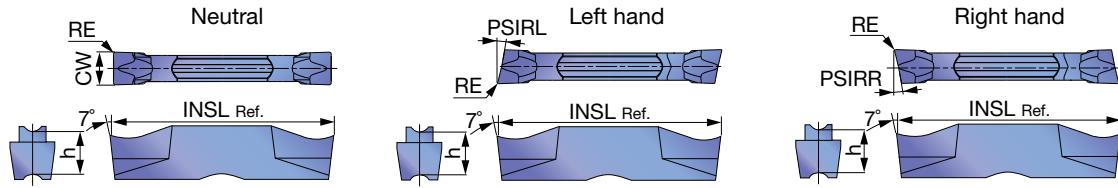
## ■ Standard feed



# INSERT

## DGS

### External grooving and parting



<b>P</b> Steel	★	★	☆	★	☆	★	★						
<b>M</b> Stainless		★	☆	★	★	★							
<b>K</b> Cast iron		★		★	☆	★		☆			☆		
<b>N</b> Non-ferrous											☆		
<b>S</b> Superalloys		★	☆	★							★		
<b>H</b> Hard materials													

★ : First choice  
☆ : Second choice

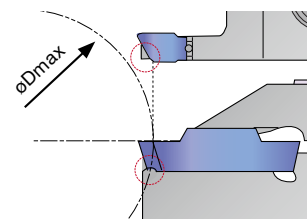
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated					Cermet	Uncoated	INSL (in)	h (in)	PSIRL	PSIRR	
						T9225	AH7025	AH725	AH8005	GH130	AH6235	NS9530					KS05F
DGS1.2-003	0.9	N	1.2	0.047	0.001			●						0.630	0.185	0°	0°
DGS1.4-005	1	N	1.4	0.055	0.002			●						0.630	0.169	0°	0°
DGS1.4-010	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  $\phi D_{max}$ .

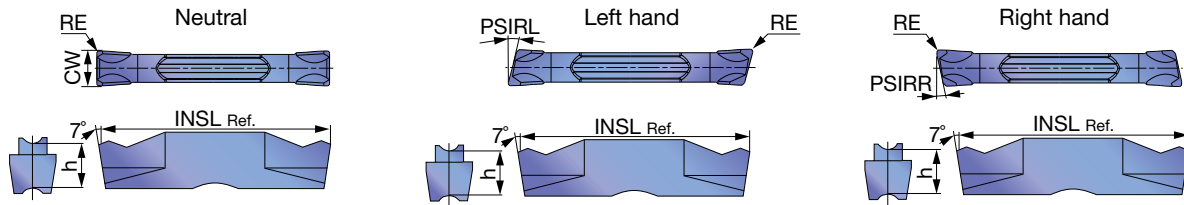
Designation	$\phi D_{max}$ (in)	Designation	$\phi D_{max}$ (in)
DGM2-002-15R/L	1.102	DGS2-002-15R/L	1.102
DGM3-002-15R/L	1.142	DGS3-002-15R/L	1.142
DGM4-030-15R/L	1.181	SGS3-020-15R/L	4.055
SGM3-020-15R/L	4.055	SGS3-002-15R/L	1.339



Reference pages: Toolholders → [6-114](#) - [6-116](#), Standard cutting conditions → [6-124](#)

# DGM

## External grooving and parting



<b>P</b> Steel	★	★	☆	★	☆	★	★						
<b>M</b> Stainless		★	☆	★	★	★	★						
<b>K</b> Cast iron		★		★	☆	☆	★	☆				☆	
<b>N</b> Non-ferrous												☆	
<b>S</b> Superalloys		★	☆	★	★							★	
<b>H</b> Hard materials													

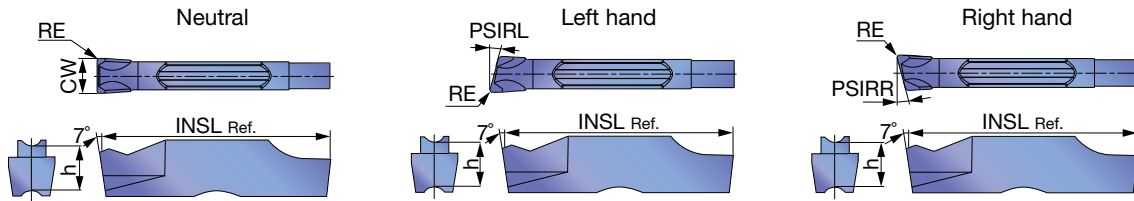
★ : First choice  
☆ : Second choice

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

# SGM

## External deep grooving and parting



<b>P</b> Steel	★	☆	★	☆	☆								
<b>M</b> Stainless	★	☆	★	★	★								
<b>K</b> Cast iron	★		★	☆	☆			☆					
<b>N</b> Non-ferrous									☆				
<b>S</b> Superalloys	★	☆	★					★					
<b>H</b> Hard materials													

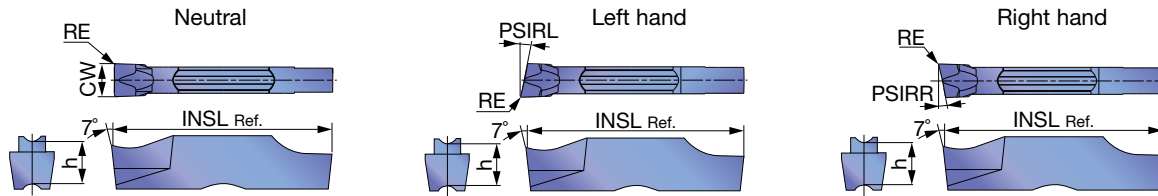
★ : First choice  
☆ : Second choice

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 → [6-114](#) - [6-116](#), Standard cutting conditions → [6-124](#)

External deep grooving and parting



P	Steel	★	☆	★	☆	★							
M	Stainless	★	☆	★	★	★							
K	Cast iron	★		★	☆	★		☆					
N	Non-ferrous							☆					
S	Superalloys	★	☆	★				★					
H	Hard materials												

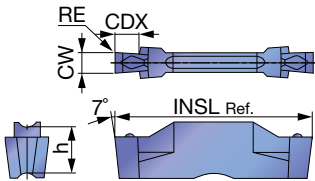
★ : First choice  
☆ : Second choice

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

## DGE

External grooving (for high precision)



<b>P</b>	Steel	★	☆	☆				★			
<b>M</b>	Stainless	★	☆	★							
<b>K</b>	Cast iron	★		☆				☆			
<b>N</b>	Non-ferrous										
<b>S</b>	Superalloys	★	☆								
<b>H</b>	Hard materials										

★ : First choice  
☆ : Second choice

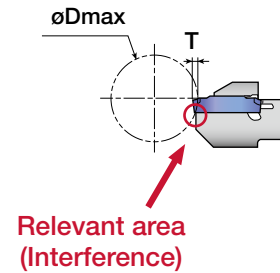
Designation	Seat size	CW±0.05 (mm)	CW±0.0008 (in)	RE (in)	Coated			Cermet	CDX (in)	INSL (in)	h (in)
					AH7025	AH725	GH130	NS9530			
DGE100-000	2	1	0.039	0	●	●		●	0.098	0.787	0.197
DGE130-000	2	1.3	0.051	0	●	●		●	0.098	0.787	0.197
DGE160-010	2	1.6	0.063	0.004	●	●	●	●	0.098	0.787	0.197
DGE185-010	2	1.85	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

### 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

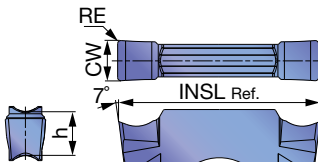
● : Line up

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)



<b>P</b>	Steel	★		★						
<b>M</b>	Stainless	★								
<b>K</b>	Cast iron	★		☆		☆				
<b>N</b>	Non-ferrous					★				
<b>S</b>	Superalloys	★				☆				
<b>H</b>	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 → 6-114 - 6-116, Standard cutting conditions → 6-124





## STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed Vc (sfm)
<b>P</b>	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
<b>M</b>	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
<b>K</b>	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
<b>N</b>	Aluminum alloys Si < 12%	-	First choice	TH10	328 - 1640
		-	First choice	KS05F	328 - 1969
<b>S</b>	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
<b>H</b>	Hardened steel 4137, etc.	> HRC 50	First choice	BX360	262 - 492



External



Internal



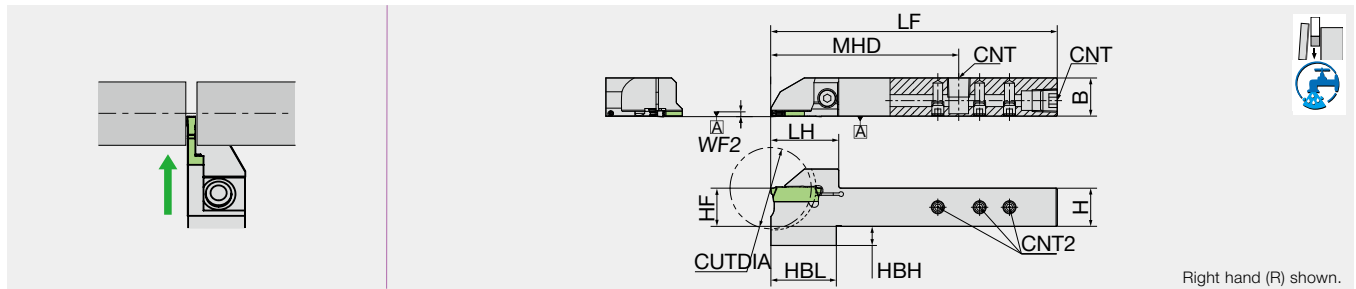
Face



Parting

## CTDPR/L-OH3 CUT DUO SPLASH

Direct connect coolant port 3-hole type



Right hand (R) shown.

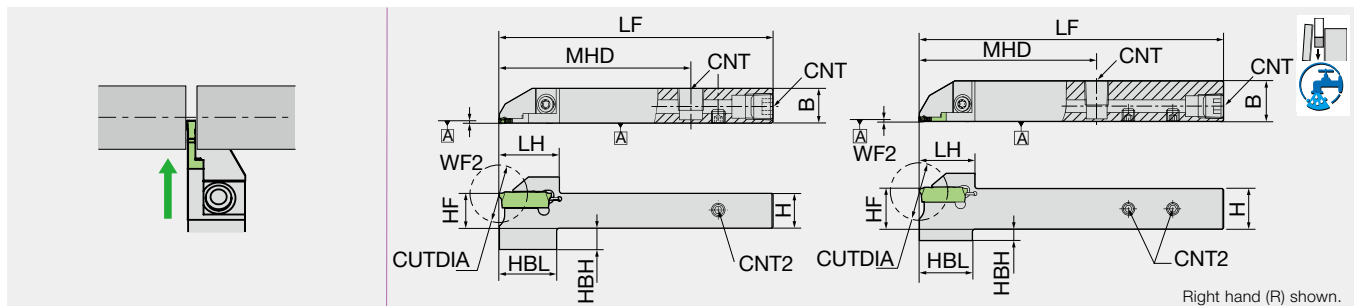
Inch	CUTDIA	H	B	LF	LH	HBH	HBL	HF	MHD	WF2	CNT	CNT2	Insert
CTDPR10-IN-20D25-OH3	1.000	0.625	0.625	4.724	0.866	0.182	0.866	0.605	3.100	0.008	NPT1/8	M5	CTDP20..
CTDPR10-IN-25D34A-OH3	1.339	0.625	0.625	4.724	1.122	0.319	1.083	0.605	3.102	0.008	NPT1/8	M5	CTDP25..
CTDPL10-IN-20D25-OH3	1.000	0.625	0.625	4.724	0.866	0.182	0.866	0.605	3.100	0.008	NPT1/8	M5	CTDP20..
CTDPL10-IN-25D34A-OH3	1.339	0.625	0.625	4.724	1.122	0.319	1.083	0.605	3.102	0.008	NPT1/8	M5	CTDP25..
Metric	CUTDIA	H	B	LF	LH	HBH	HBL	HF	MHD	WF2	CNT	CNT2	Insert
CTDPR16-20D25-OH3	25.4	16	16	120	22	4.5	21	15.5	78.75	0.2	Rc1/8	M5	CTDP20..
CTDPR16-25D34A-OH3	34	16	16	120	28.5	8	27.5	15.5	78.8	0.2	Rc1/8	M5	CTDP25..
CTDPL16-20D25-OH3	25.4	16	16	120	22	4.5	21	16	78.75	0.2	Rc1/8	M5	CTDP20..
CTDPL16-25D34A-OH3	34	16	16	120	28.5	8	27.5	16	78.8	0.2	Rc1/8	M5	CTDP25..

### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
CTDPR/L10-IN-20D25-OH3	LRIS-4*12	SPNPT1/8	SS0505SC	LLR-25S	LW-2.5
CTDPR/L10-IN-25D34A-OH3	CS0516LSH	SPNPT1/8	SS0505SC	LW-3	LW-2.5
CTDPR/L16-20D25-OH3	LRIS-4*12	SPR1/8L	SS0505SC	LLR-25S	LW-2.5
CTDPR/L16-25D34A-OH3	CS0516LSH	SPR1/8L	SS0505SC	LW-3	LW-2.5

## CTDPR/L-OH2 CUT DUO SPLASH

Direct connect coolant port 1~2-hole type



Right hand (R) shown.

Inch	CUTDIA	H	B	LF	LH	HBH	HBL	HF	MHD	WF2	CNT	CNT2	Figure	Insert
CTDPR08-IN-20D25-OH2	1.000	0.500	0.500	3.937	0.866	0.307	0.827	0.500	2.756	0.008	NPT1/8	M5	1	CTDP20..
CTDPR10-IN-20D25-OH2	1.000	0.625	0.625	4.724	0.866	0.182	1.083	0.625	2.756	0.008	NPT1/8	M5	2	CTDP20..
CTDPR12-IN-25D32-OH2	1.260	0.750	0.750	4.724	1.122	0.157	1.083	0.750	2.953	0.008	-	-	1	CTDP25..
CTDPL08-IN-20D25-OH2	1.000	0.500	0.500	3.937	0.866	0.307	0.827	0.500	2.756	0.008	NPT1/8	M5	1	CTDP20..
CTDPL10-IN-20D25-OH2	1.000	0.625	0.625	4.724	0.866	0.182	1.083	0.625	2.756	0.008	NPT1/8	M5	2	CTDP20..
CTDPL12-IN-25D32-OH2	1.260	0.750	0.750	4.724	1.122	0.157	1.083	0.750	2.953	0.008	-	M5	1	CTDP25..
Metric	CUTDIA	H	B	LF	LH	HBH	HBL	HF	MHD	WF2	CNT	CNT2	Figure	Insert
CTDPR12-20D25-OH2	25.4	12	12	100	22	8.5	21	12	70	0.2	Rc1/8	M5	1	CTDP20..
CTDPR16-20D25-OH2	25.4	16	16	120	22	4.5	21	16	70	0.2	Rc1/8	M5	2	CTDP20..
CTDPR20-25D34A-OH2	34	20	20	120	28.5	4	27.5	20	75	0.2	Rc1/8	M5	1	CTDP25..
CTDPL12-20D25-OH2	25.4	12	12	100	22	8.5	21	12	70	0.2	Rc1/8	M5	1	CTDP20..
CTDPL16-20D25-OH2	25.4	16	16	120	22	4.5	21	16	70	0.2	Rc1/8	M5	2	CTDP20..
CTDPL20-25D34A-OH2	34	20	20	120	28.5	4	27.5	20	75	0.2	Rc1/8	M5	1	CTDP25..

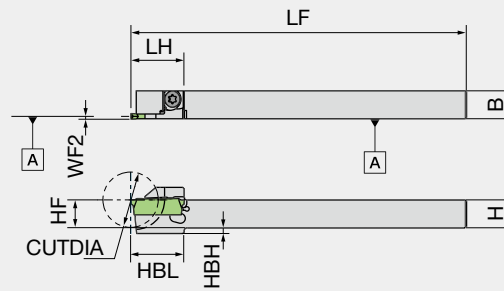
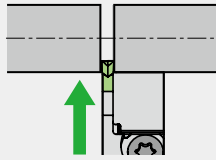
### SPARE PARTS

Designation	Clamp screw	Screw (for CNT)	Screw (for CNT2)	Wrench (for Clamp screw)	Wrench (for CNT2)
CTDPR/L08-IN-20D25-OH2	LRIS-4*12	SPNPT1/8	SS0505SC	LLR-25S	LW-2.5
CTDPR/L10-IN-20D25-OH2	LRIS-4*12	SPNPT1/8	SS0505SC	LLR-25S	LW-2.5
CTDPR/L12-IN-25D32-OH2	CS0516LSH	SPNPT1/8	SS0505SC	LW-3	LW-2.5
CTDPR/L12-20D25-OH2	LRIS-4*12	SPR1/8	SS0505SC	LLR-25S	LW-2.5
CTDPR/L16-20D25-OH2	LRIS-4*12	SPR1/8L	SS0505SC	LLR-25S	LW-2.5
CTDPR/L20-25D34A-OH2	CS0516LSH	SPR1/8	SS0505SC	LW-3	LW-2.5

Reference pages: Inserts → 6-127



# CTDR/LP CUT DUO



Right hand (R) shown.

Inch	CUTDIA	H	B	LF	LH	HBH	HBL	HF	WF2	Insert
CTDPR06-IN-20D20	0.787	0.375	0.394	4.724	0.748	0.019	0.748	0.375	0.008	CTDP20..
CTDPR08-IN-20D25	1.000	0.500	0.500	4.724	0.866	-	-	0.500	0.008	CTDP25..
CTDPR10-IN-20D32	1.260	0.625	0.625	4.724	1.083	-	-	0.625	0.008	CTDP20..
CTDPR12-IN-20D32	1.260	0.750	0.750	4.724	1.083	-	-	0.750	0.008	CTDP25..
CTDPL06-IN-20D20	0.787	0.375	0.394	4.724	0.748	0.019	0.748	0.375	0.008	CTDP20..
CTDPL08-IN-20D25	1.000	0.500	0.500	4.724	0.866	-	-	0.500	0.008	CTDP20..
CTDPL10-IN-20D32	1.260	0.625	0.625	4.724	1.083	-	-	0.625	0.008	CTDP20..
CTDPL12-IN-20D32	1.260	0.750	0.750	4.724	1.083	-	-	0.750	0.008	CTDP20..
Metric	CUTDIA	H	B	LF	LH	HBH	HBL	HF	WF2	Insert
CTDPR10-20D20	20	10	10	120	19	2	19	10	0.2	CTDP20..
CTDPR12-20D20	20	12	12	120	19	-	-	12	0.2	CTDP20..
CTDPR12-20D25	25.4	12	12	120	22	-	-	12	0.2	CTDP20..
CTDPR16-20D25	25.4	16	16	120	22	-	-	16	0.2	CTDP20..
CTDPR16-20D32A	32	16	16	120	27.5	-	-	16	0.2	CTDP20..
CTDPR16-25D34A	34	16	16	120	28.5	-	-	16	0.2	CTDP25..
CTDPR2012-20D32A	32	20	12	120	29.5	-	-	20	0.2	CTDP20..
CTDPR2012-25D34A	34	20	12	120	29.5	-	-	20	0.2	CTDP25..
CTDPR20-20D32A	32	20	20	120	29.5	-	-	20	0.2	CTDP20..
CTDPR20-25D34A	34	20	20	120	29.5	-	-	20	0.2	CTDP25..
CTDPL10-20D20	20	10	10	120	19	2	19	10	0.2	CTDP20..
CTDPL12-20D20	20	12	12	120	19	-	-	12	0.2	CTDP20..
CTDPL12-20D25	25.4	12	12	120	22	-	-	12	0.2	CTDP20..
CTDPL16-20D25	25.4	16	16	120	22	-	-	16	0.2	CTDP20..
CTDPL16-20D32A	32	16	16	120	27.5	-	-	16	0.2	CTDP20..
CTDPL16-25D34A	34	16	16	120	28.5	-	-	16	0.2	CTDP25..
CTDPL2012-20D32A	32	20	12	120	29.5	-	-	20	0.2	CTDP20..
CTDPL2012-25D34A	34	20	12	120	29.5	-	-	20	0.2	CTDP25..
CTDPL20-20D32A	32	20	20	120	29.5	-	-	20	0.2	CTDP20..
CTDPL20-25D34A	34	20	20	120	29.5	-	-	20	0.2	CTDP25..



## SPARE PARTS

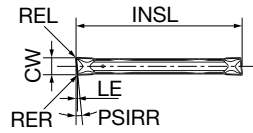


Designation	Clamp screw	Wrench (for Clamp screw)
CTDPR/L06-IN-20D20	LRIS-4*12	LLR-25S
CTDPR/L08-IN-20D25	LRIS-4*12	LLR-25S
CTDPR/L10-IN-20D32	LRIS-5*10	LLR-28S
CTDPR/L12-IN-20D32	LRIS-5*10	LLR-28S
CTDPR/L10-20D20	LRIS-4*12	LLR-25S
CTDPR/L12-20D20	LRIS-4*12	LLR-25S
CTDPR/L12-20D25	LRIS-4*12	LLR-25S
CTDPR/L16-20D25	LRIS-4*12	LLR-25S
CTDPR/L**D32A	LRIS-5*10	LLR-28S
CTDPR/L**D34A	CS0516LSH	LW-3

Reference pages: Inserts → **6-127**

**INSERT**

**CTDP20/25 CUT DUO**



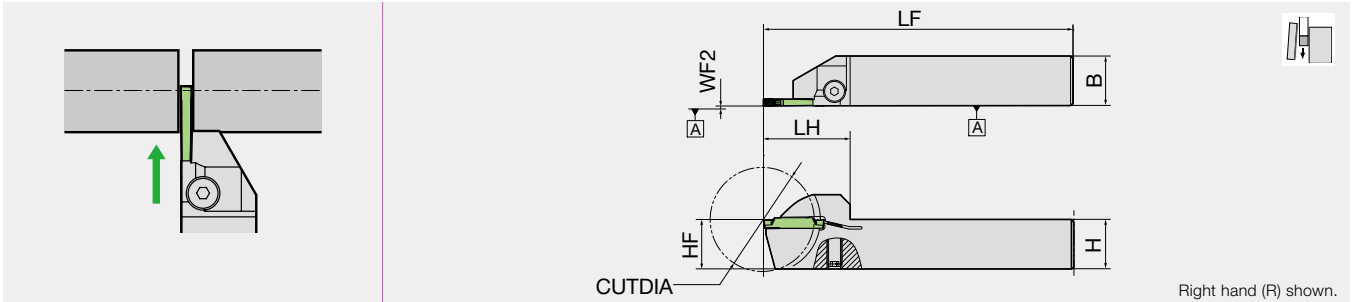
<b>P</b>	Steel	☆	★	★	☆
<b>M</b>	Stainless	★	☆	☆	☆
<b>N</b>	Non-ferrous	☆	☆	☆	★
<b>S</b>	Superalloys	★	☆	☆	☆
<b>H</b>	Hard materials	☆	★	☆	☆

★ : First choice  
☆ : Second choice

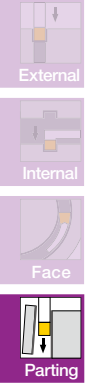
Designation	Coated				CW (mm)	CW (in)	INSL (in)	PSIRR	REL (in)	RER (in)	LE (in)
	DM4	QM3	ST4	TM4							
CTDP20N	●	●	●	●	2	0.079	0.752	-	0.002	0.002	-
CTDP20N02	●	●	●	●	2	0.079	0.752	-	0.008	0.008	-
CTDP25N	●	●	●	●	2.5	0.098	0.835	-	0.002	0.002	-
CTDP25N02	●	●	●	●	2.5	0.098	0.835	-	0.008	0.008	-
CTDP20R6	●	●	●	●	2	0.079	0.752	6°	0.002	0.002	0.009
CTDP25R6	●	●	●	●	2.5	0.098	0.835	6°	0.002	0.002	0.011
CTDP20R15	●	●	●	●	2	0.079	0.752	15°	0.002	0.002	0.022
CTDP25R15	●	●	●	●	2.5	0.098	0.835	15°	0.002	0.002	0.028

● : Line up

# CTWPR/L CUT DUO EXTRA



Inch	CUTDIA	H	B	LF	LH	HF	WF2	Insert
CTWPR12-IN-3D42	1.654	0.750	0.750	5.000	1.378	0.750	0.010	GWPFM300..
CTWPR16-IN-3D42	1.654	1.000	1.000	6.000	1.378	1.000	0.010	GWPFM300..
CTWPL12-IN-3D42	1.654	0.750	0.750	5.000	1.378	0.750	0.010	GWPFM300..
CTWPL16-IN-3D42	1.654	1.000	1.000	6.000	1.378	1.000	0.010	GWPFM300..
Metric	CUTDIA	H	B	LF	LH	HF	WF2	Insert
CTWPR2012K-3D42	42	20	12	125	35	20	0.25	GWPFM300..
CTWPR2020K-3D42	42	20	20	125	35	20	0.25	GWPFM300..
CTWPL2012K-3D42	42	20	12	125	35	20	0.25	GWPFM300..
CTWPL2020K-3D42	42	20	20	125	35	20	0.25	GWPFM300..

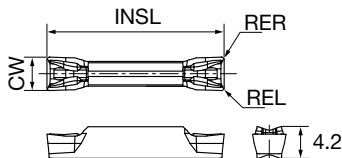


## SPARE PARTS

Designation	Clamp screw	Wrench (for Clamp screw)
CTWPR/L12-IN-3D42	CS0619LSHW	LW-3
CTWPR/L16-IN-3D42	CS0623LSHW	LW-4
CTWPR20**-3D42	CS0623LSHW	LW-3

## INSERT

### GWPFM



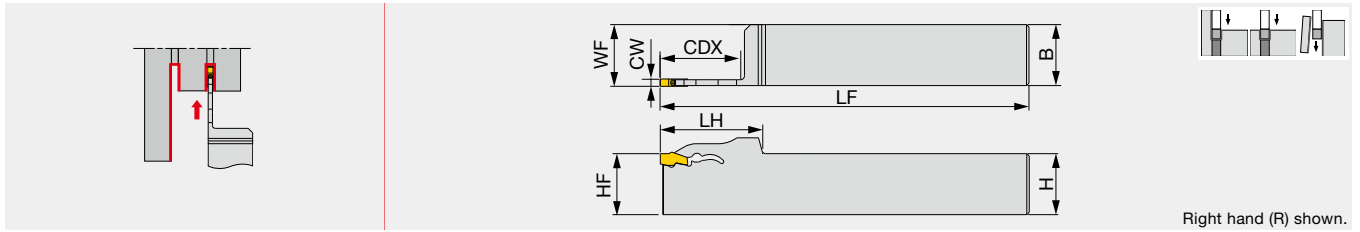
P	Steel	★
M	Stainless	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	☆

★ : First choice  
☆ : Second choice

Designation	Coated	CW (in)	CW (mm)	INSL (in)	REL (in)	RER (in)
	DM4					
GWPFM300N02-GT	●	3	0.118	0.965	0.008	0.008
GWPFM300N04-GT	●	3	0.118	0.965	0.016	0.016

● : Line up

## External toolholders for grooving and parting



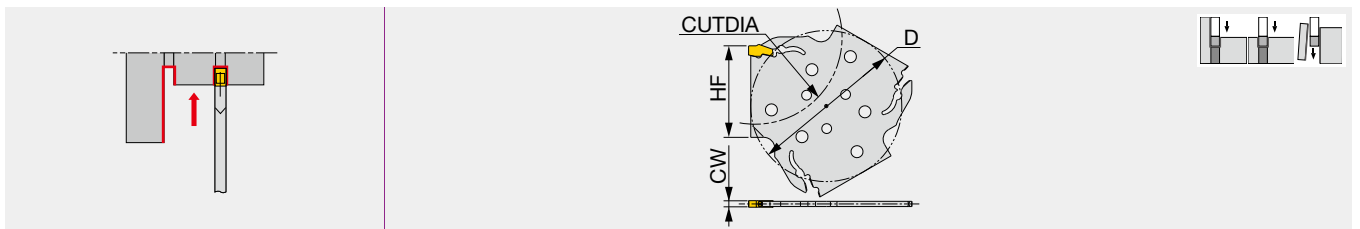
Inch	CW	CDX	Seat size	H	B	LF	LH	HF	WF
QSER/L12-2T26	0.079	1.024	2	0.750	0.750	5.000	1.417	0.750	0.756
QSER/L12-2T33	0.079	1.299	2	0.750	0.750	5.000	1.654	0.750	0.756
QSER/L16-2T26	0.079	1.024	2	1.000	1.000	6.000	1.417	1.000	1.004
QSER/L16-2T33	0.079	1.299	2	1.000	1.000	6.000	1.654	1.000	1.004
QSER/L12-3T26	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

## QSG

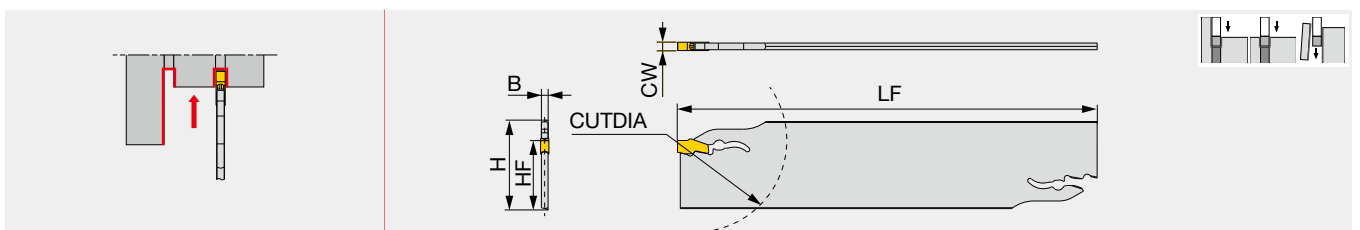
### Parting-off and external grooving blade



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

## 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

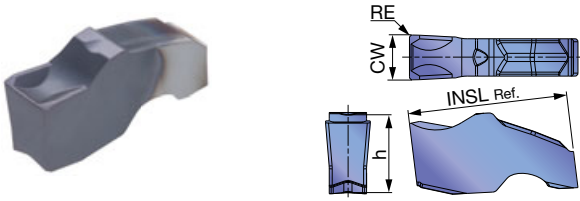
Designation	Wrench
QSER/L..., QSG..., QSP...	QL-39

Reference pages: Inserts → 6-130, Standard cutting conditions → 6-131

# INSERTS

## QGM

External deep grooving and parting



<b>P</b>	Steel	★							
<b>M</b>	Stainless	★							
<b>K</b>	Cast iron	★							
<b>N</b>	Non-ferrous								
<b>S</b>	Superalloys	★							
<b>H</b>	Hard materials								

★ : First choice

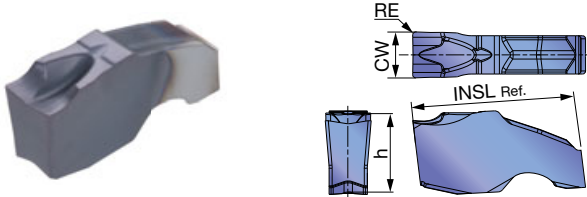
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							INSL (in)	h (in)	
					AH7025									
QGM2-020	2	2	0.079	0.008	●								0.433	0.209
QGM3-020	3	3	0.118	0.008	●								0.433	0.209
QGM4-030	4	4	0.157	0.012	●								0.512	0.287
QGM5-030	5	5	0.197	0.012	●								0.512	0.287

●: Line up



## QGS

External deep grooving and parting



<b>P</b>	Steel	★							
<b>M</b>	Stainless	★							
<b>K</b>	Cast iron	★							
<b>N</b>	Non-ferrous								
<b>S</b>	Superalloys	★							
<b>H</b>	Hard materials								

★ : First choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							INSL (in)	h (in)	
					AH7025									
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: Toolholders → [6-129](#)



## STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Grade	Cutting speed Vc (sfm)
<b>P</b>	Steels 1045, 4140, etc.	< 300 HB	AH7025	164 - 591
<b>M</b>	Stainless steel 304, etc.	< 200 HB	AH7025	164 - 394
<b>K</b>	Gray cast iron No.250B, etc.	-	AH7025	164 - 591
	Ductile cast irons 65-45-12, etc.	-	AH7025	164 - 394
<b>S</b>	Superalloys Inconel718, etc.	< HRC 40	AH7025	66 - 197
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	AH7025	66 - 262

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

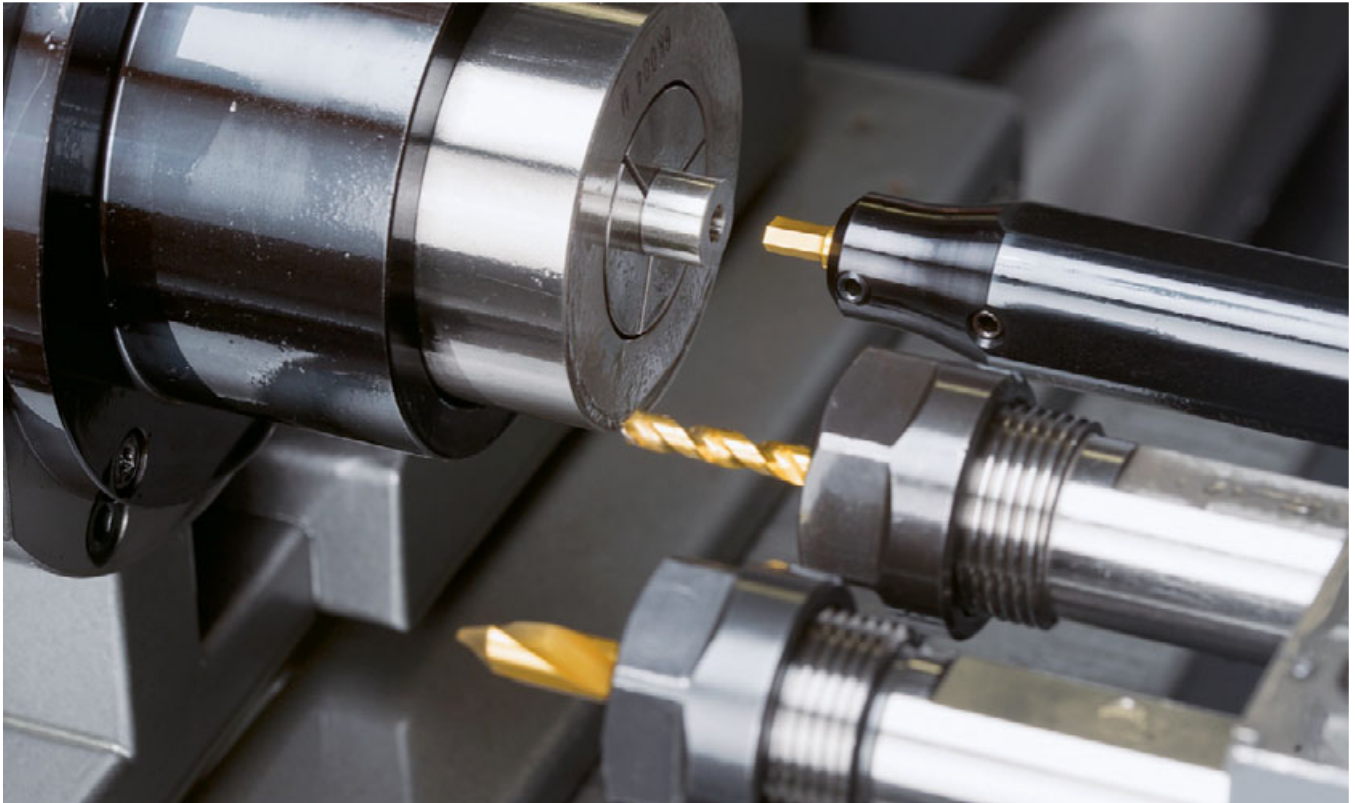
Technical Reference

# 7. Shaper

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# SHAPER DUO



For socket hole machining on CNC automatic lathes

**Hexagon, square and hexalobular socket machining can be achieved at a low cost and without any special equipment.**

Wide range of socket styles and sizes can be machined by using the sub-spindle of automatic lathes.

## Features

- Machine square, hexagon, and hexalobular socket holes
- Less tool pressure than Rotary-Broaching. Ideal for machining small diameter work pieces
- Wide range of socket dimensions can be machined with one size of SHAPER DUO
- Special workpieces and small quantity part runs can be machined with less tool costs

### Hexalobular Socket



### Hexagon Socket



### Square Socket



Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9

Technical Reference

10

## Features

### Comparison Chart of Hexalobular Socket Machining

	Tool Pressure	Cycle Time	Tool Cost	High speed spindle	Programming	
<b>SHAPER DUO</b>	◎	◎	◎	Not necessary	Simple	<ul style="list-style-type: none"> <li>No high speed spindle needed</li> <li>A lot less cycle time</li> </ul>
<b>End mill</b>	○	×	△	Necessary	Complicated	<ul style="list-style-type: none"> <li>Need high speed spindle</li> <li>Time consuming process</li> </ul>

\*Small diameter end mill driven by high-speed spindle is popular way to create Hexalobular(6-lobe) socket. It has some flexibility but needs high speed spindle unit and it is a time consuming process.

\*SHAPER DUO can make Hexalobular(6-lobe) socket faster and simpler.

### Comparison Chart of HEX Socket Machining

	Tool Pressure	Cycle Time	Tool Cost	High speed spindle	
<b>SHAPER DUO</b>	◎	△ ※ Can be off-set by over-lapping operation	○	◎	<ul style="list-style-type: none"> <li>Less tool pressure-especially on small diameter parts</li> <li>One size can cover several socket sizes</li> </ul>
<b>Rotary-broaching</b>	△	○	×	○	<ul style="list-style-type: none"> <li>Need to have tools for each socket size</li> </ul>

\*Rotary-broaching is an efficient way to machine a Hexagon socket. But tool pressure is high and often times it pushes part too hard.

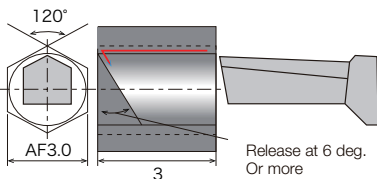
\*SHAPER DUO system enables less tool pressure and provides better tolerance with less cost.

## Example of machining Hexagon socket

SHAPER DUO has better tool life compared to the competitor which has an immediate worn and rounded cutting edge.

NTK's special grinding process and TM4 grade enable to:

- ① Keep good corner edge sharpness and long tool life
- ② Provide better tolerance and accuracy
- ③ Provide better surface quality

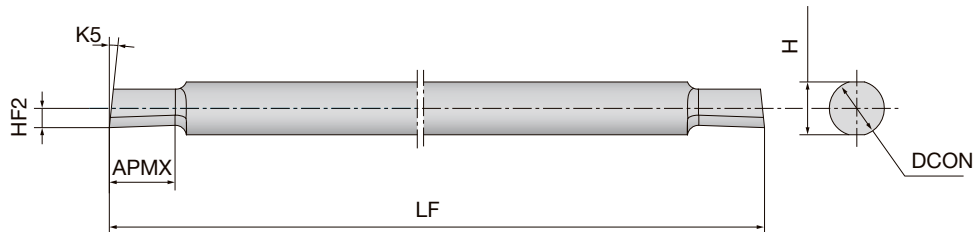
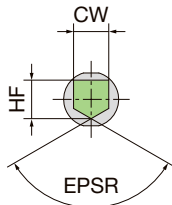
Work materials	SUS303		<b>TM4 SSP030N1940H</b>	<b>10,000 pcs / corner</b>
Feed	2,000 mm/min		Competitor's carbide inserts	300 pcs / corner
Depth of cut (ap)	Roughing 0.025mm			
	Finishing 0.005mm			
Coolant	WET			

# SHAPER DUO

## INSERT BAR

### SSP-H

#### Hexagon Socket



#### Inch

P	Steel	★
M	Stainless	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice  
☆ : Second choice

Designation	Coated	Base AF L4 (in)	AF range L5 (in)	EPSR (in)	DCON (in)	APMX (in)	H (in)	LF (in)	CW (in)	HF (in)	HF2 (in)	K5
	TM4											
SSP020N06515H	●	0.039	0.039 - 0.043	120°	0.079	0.059	0.071	1.969	0.026	0.028	0.014	15°
SSP020N07018H	●	0.043	0.043 - 0.047	120°	0.079	0.071	0.071	1.969	0.028	0.031	0.016	15°
SSP020N07518H	●	0.047	0.047 - 0.051	120°	0.079	0.071	0.071	1.969	0.030	0.035	0.018	15°
SSP020N08020H	●	0.051	0.051 - 0.055	120°	0.079	0.079	0.071	1.969	0.031	0.039	0.020	15°
SSP020N1130H	●	0.059	0.055 - 0.075	120°	0.079	0.118	0.071	1.969	0.043	0.035	0.018	6°
SSP020N1430H	●	0.079	0.071 - 0.098	120°	0.079	0.118	0.071	1.969	0.055	0.047	0.024	6°
SSP030N1940H	●	0.118	0.091 - 0.138	120°	0.118	0.157	0.110	1.969	0.075	0.059	0.030	6°
SSP040N2450H	●	0.157	0.130 - 0.177	120°	0.157	0.197	0.150	2.362	0.094	0.098	0.049	6°
SSP050N3260H	●	0.197	0.169 - 0.240	120°	0.197	0.236	0.189	2.756	0.126	0.130	0.065	6°
SSP060N42120H	●	0.236	0.209 - 0.319	120°	0.236	0.472	0.220	3.150	0.165	0.157	0.079	6°
SSP080N62160H	●	0.315	0.287 - 0.476	120°	0.315	0.630	0.299	3.150	0.244	0.193	0.096	6°

#### Metric

P	Steel	★
M	Stainless	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice  
☆ : Second choice

● : Line up

Designation	Coated	Base AF (mm) L4	AF range (mm) L5	EPSR (mm)	DCON (mm)	APMX (mm)	H (mm)	LF (mm)	CW (mm)	HF (mm)	HF2 (mm)	K5
	TM4											
SSP020N06515H	●	1	1 - 1.1	120°	2	1.5	1.8	50	0.65	0.7	0.35	15°
SSP020N07018H	●	1.1	1.1 - 1.2	120°	2	1.8	1.8	50	0.7	0.8	0.4	15°
SSP020N07518H	●	1.2	1.2 - 1.3	120°	2	1.8	1.8	50	0.75	0.9	0.45	15°
SSP020N08020H	●	1.3	1.3 - 1.4	120°	2	2	1.8	50	0.8	1	0.5	15°
SSP020N1130H	●	1.5	1.4 - 1.9	120°	2	3	1.8	50	1.1	0.9	0.45	6°
SSP020N1430H	●	2	1.8 - 2.5	120°	2	3	1.8	50	1.4	1.2	0.6	6°
SSP030N1940H	●	3	2.3 - 3.5	120°	3	4	2.8	50	1.9	1.5	0.75	6°
SSP040N2450H	●	4	3.3 - 4.5	120°	4	5	3.8	60	2.4	2.5	1.25	6°
SSP050N3260H	●	5	4.3 - 6.1	120°	5	6	4.8	70	3.2	3.3	1.65	6°
SSP060N42120H	●	6	5.3 - 8.1	120°	6	12	5.6	80	4.2	4	2	6°
SSP080N62160H	●	8	7.3 - 12.1	120°	8	16	7.6	80	6.2	4.9	2.45	6°

Reference pages: Toolholders → 4-47 - 4-53

● : Line up

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

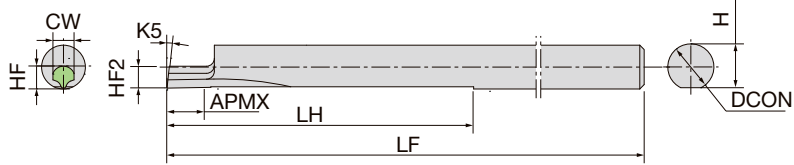
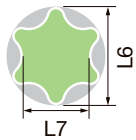
Endmill

Drilling Tool

Technical Reference



Hexalobular Socket



Inch

P	Steel	★	
M	Stainless	★	
N	Non-ferrous	★	
S	Superalloys	★	
H	Hard materials	★	

★ : First choice  
☆ : Second choice

Designation	Coated	Socket size	Socket number	L6 (in)	L7 (in)	Recommended Pilot bore Dia. (in)	DCON (in)	APMX (in)	H (in)	LF (in)	LH (in)	CW (in)	HF (in)	HF2 (in)	K5
	TM4														
SSP050N25T06	●	T6	6	0.069	0.050	0.045	0.197	0.098	0.187	2.756	1.378	0.047	0.043	0.094	6°
SSP050N31T07	●	T7	-	-	-	0.054	0.197	0.122	0.187	2.756	1.378	0.055	0.051	0.094	6°
SSP050N36T08	●	T8	8	0.094	0.069	0.064	0.197	0.142	0.187	2.756	1.378	0.063	0.059	0.094	6°
SSP050N41T10	●	T10	10	0.110	0.081	0.076	0.197	0.161	0.187	2.756	1.378	0.071	0.067	0.094	6°
SSP050N43T15	●	T15	15	0.132	0.094	0.091	0.197	0.169	0.187	2.756	1.378	0.087	0.083	0.094	6°
SSP050N46T20	●	T20	20	0.156	0.112	0.107	0.197	0.181	0.187	2.756	1.378	0.102	0.098	0.094	6°
SSP050N50T25	●	T25	25	0.177	0.128	0.123	0.197	0.197	0.187	2.756	1.378	0.118	0.114	0.094	6°
SSP050N55T27	●	T27	-	-	-	0.139	0.197	0.217	0.187	2.756	1.378	0.134	0.130	0.094	6°
SSP050N55T30	●	T30	30	0.220	0.159	0.154	0.197	0.217	0.187	2.756	1.378	0.150	0.146	0.094	6°

● : Line up

Metric

P	Steel	★	
M	Stainless	★	
N	Non-ferrous	★	
S	Superalloys	★	
H	Hard materials	★	

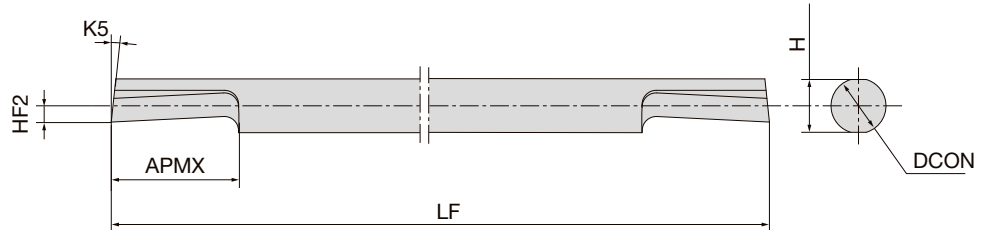
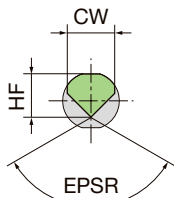
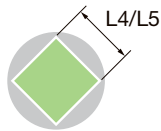
★ : First choice  
☆ : Second choice

Designation	Coated	Socket size	Socket number	L6 (mm)	L7 (mm)	Recommended Pilot bore Dia. (mm)	DCON (mm)	APMX (mm)	H (mm)	LF (mm)	LH (mm)	CW (mm)	HF (mm)	HF2 (mm)	K5
	TM4														
SSP050N25T06	●	T6	6	1.75	1.27	1.15	5	2.5	4.75	70	35	1.2	1.09	2.4	6°
SSP050N31T07	●	T7	-	-	-	1.38	5	3.1	4.75	70	35	1.4	1.29	2.4	6°
SSP050N36T08	●	T8	8	2.4	1.75	1.62	5	3.6	4.75	70	35	1.6	1.5	2.4	6°
SSP050N41T10	●	T10	10	2.8	2.05	1.92	5	4.1	4.75	70	35	1.8	1.7	2.4	6°
SSP050N43T15	●	T15	15	3.35	2.4	2.3	5	4.3	4.75	70	35	2.2	2.1	2.4	6°
SSP050N46T20	●	T20	20	3.95	2.85	2.71	5	4.6	4.75	70	35	2.6	2.5	2.4	6°
SSP050N50T25	●	T25	25	4.5	3.25	3.13	5	5	4.75	70	35	3	2.9	2.4	6°
SSP050N55T27	●	T27	-	-	-	3.52	5	5.5	4.75	70	35	3.4	3.3	2.4	6°
SSP050N55T30	●	T30	30	5.6	4.05	3.91	5	5.5	4.75	70	35	3.8	3.7	2.4	6°

● : Line up

# SSP-S

## Square Socket



Inch

P	Steel	★
M	Stainless	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice  
☆ : Second choice

Designation	Coated	Base AF L4 (in)	AF range L5 (in)	EPSR	DCON (in)	APMX (in)	H (in)	LF (in)	CW (in)	HF (in)	HF2 (in)	K5
	TM4											
SSP020N1740S	●	0.079	0.079 - 0.091	90°	0.079	0.157	0.071	1.969	0.067	0.063	0.028	6°
SSP025N1940S	●	0.098	0.091 - 0.102	90°	0.098	0.157	0.091	1.969	0.077	0.071	0.026	6°
SSP030N2260S	●	0.118	0.102 - 0.118	90°	0.118	0.236	0.110	1.969	0.087	0.081	0.026	6°
SSP035N2760S	●	0.138	0.114 - 0.146	90°	0.138	0.236	0.130	2.362	0.106	0.089	0.024	6°
SSP040N3380S	●	0.157	0.146 - 0.177	90°	0.157	0.315	0.150	2.362	0.132	0.120	0.045	6°
SSP050N39100S	●	0.197	0.177 - 0.209	90°	0.197	0.394	0.189	2.756	0.154	0.156	0.061	6°
SSP060N47120S	●	0.236	0.209 - 0.256	90°	0.315	0.472	0.220	3.150	0.187	0.177	0.067	6°
SSP080N58160S	●	0.315	0.256 - 0.315	90°	0.315	0.630	0.299	3.150	0.228	0.217	0.067	6°

● : Line up

Metric

P	Steel	★
M	Stainless	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice  
☆ : Second choice

Designation	Coated	Base AF (mm) L4	AF range (mm) L5	EPSR (mm)	DCON (mm)	APMX (mm)	H (mm)	LF (mm)	CW (mm)	HF (mm)	HF2 (mm)	K5
	TM4											
SSP020N1740S	●	2	2 - 2.3	90°	2	4	1.8	50	1.7	1.6	0.7	6°
SSP025N1940S	●	2.5	2.3 - 2.6	90°	2.5	4	2.3	50	1.95	1.8	0.65	6°
SSP030N2260S	●	3	2.6 - 3	90°	3	6	2.8	50	2.2	2.05	0.65	6°
SSP035N2760S	●	3.5	2.9 - 3.7	90°	3.5	6	3.3	60	2.7	2.25	0.6	6°
SSP040N3380S	●	4	3.7 - 4.5	90°	4	8	3.8	60	3.35	3.05	1.15	6°
SSP050N39100S	●	5	4.5 - 5.3	90°	5	10	4.8	70	3.9	3.95	1.55	6°
SSP060N47120S	●	6	5.3 - 6.5	90°	8	12	5.6	80	4.75	4.5	1.7	6°
SSP080N58160S	●	8	6.5 - 8	90°	8	16	7.6	80	5.8	5.5	1.7	6°

● : Line up

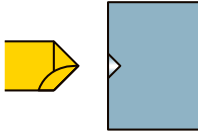
Reference pages: Toolholders → [4-47](#) - [4-53](#)

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



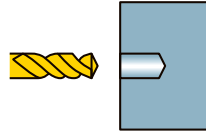
## Machining Procedure

### ① Center drilling



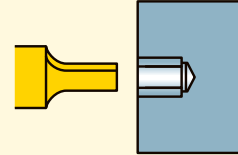
Make a center hole which is smaller than pilot hole drill.

### ② Drilling (Pilot hole)



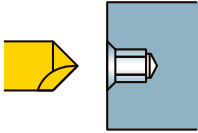
Select a drill with same or smaller (0 ~ -0.1mm) dia. as AF and machine a bit deeper because burrs may cause chipping on shaper insert

### ③ Shaper tool



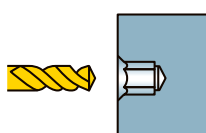
Machine socket rotating 60 degrees 6 times

### ④ Chamfering



Chamfer with the same pilot hole drill as ①

### ⑤ Deburring



Finish and deburr with the same drill as in process ②  
☆Reduce cutting conditions due to heavy interruption

## SHAPER DUO Process Chart -Hexalobular-

Socket Size	Tool	Pilot bore Dia. (mm)	Starting" X" position (mm)	Final" X" position (mm)	Number of passes		Estimated cycle time*		
					Roughing pass 0.025mm	Finishing pass 0.005mm	ISO10664		Shaper process ③
							Standard depth of Hexalobular hole (mm)	Whole process ①-⑤	
T6	SSP050N25T06	1.15	1.14	1.75	13	1	1.82	51 sec	23.2 sec
T7	SSP050N31T07	1.38	1.35	2.06	15	1	2.44	59 sec	28.2 sec
T8	SSP050N36T08	1.62	1.59	2.4	17	1	3.05	67 sec	33.8 sec
T10	SSP050N41T10	1.92	1.89	2.8	19	1	3.56	75 sec	39.5 sec
T15	SSP050N43T15	2.3	2.29	3.35	22	1	3.81	84 sec	46.2 sec
T20	SSP050N46T20	2.71	2.69	3.95	26	1	4.07	94 sec	55.4 sec
T25	SSP050N50T25	3.13	3.09	4.5	29	1	4.45	105 sec	63.8 sec
T27	SSP050N55T27	3.52	3.51	5.07	32	1	4.7	115 sec	71.8 sec
T30	SSP050N55T30	3.91	3.89	5.6	35	1	4.95	125 sec	80.2 sec

\*Using carbide drills \*Shaper cutting conditions Feed: 3000mm/min Depth of cut : Roughing 0.025mm / Finishing 0.005mm

## SHAPER DUO Process Chart -Hexagonal-

HEX Standard	Tool	Pilot bore Dia. (mm)	Starting" X" position (mm)	Final" X" position (mm)	Number of passes		Estimated cycle time*		
					Roughing pass 0.025mm	Finishing pass 0.005mm	ISO10664		Shaper process ③
							Standard depth of Hexalobular hole (mm)	Whole process ①-⑤	
HEX 1.5	SSP020N1130H	1.5	1.47	1.73	6	1	2	39 sec	14 sec
HEX 2.0	SSP020N1430H	2	1.95	2.31	8	1	2.5	44 sec	16 sec
HEX 2.5	SSP030N1940H	2.5	2.48	2.89	9	1	3	50 sec	20 sec
HEX 3.0	SSP030N1940H	3	2.95	3.46	11	1	3.5	55 sec	23 sec
HEX 4.0	SSP040N2450H	4	3.96	4.62	14	1	5	73 sec	33 sec
HEX 5.0	SSP050N3260H	5	4.96	5.77	17	1	6	90 sec	46 sec
HEX 6.0	SSP060N42120H	6	5.97	6.93	20	1	8	117 sec	63 sec
HEX 8.0	SSP080N62160H	8	7.98	9.24	26	1	10	155 sec	92 sec

\*Using carbide drills \*Shaper cutting conditions Feed: 3000mm/min Depth of cut : Roughing 0.025mm / Finishing 0.005mm

## Recommended cutting conditions

Feed : F1000 - F4000 mm/min(40-160 IPM) Depth of Cut : Roughing 0.025mm(0.001") / Finishing 0.005mm(0.0002")

## Precautions when replacing the insert bar

The tool nose position dimensions (HF2) vary. Check the dimensions of the cutting tool after changing tools or indexing insert bar.



# SHAPER DUO Set-up Instructions -Hexagonal

Grade 1

Insert 2

Ext. Toolholder 3

Int. Toolholder 4

Threading 5

Grooving 6

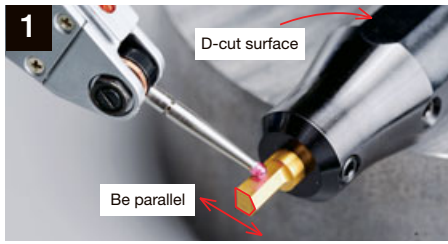
Shaper 7

Endmill 8

Drilling Tool 9

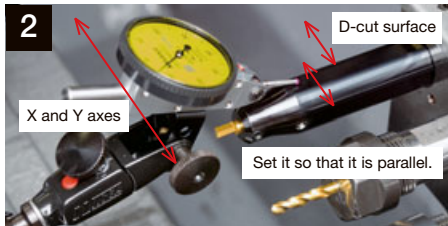
Technical Reference 10

## Outside machine

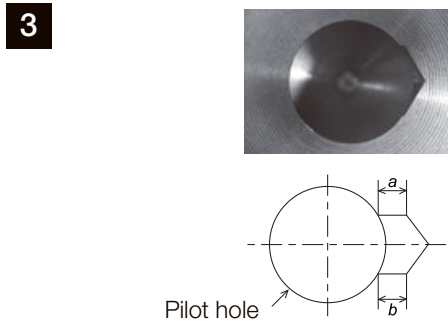


- Set the insert bar in the sleeve and check the parallelism of the flat portion of the sleeve and the insert bar.
- Minimize the overhang of the insert.

## Inside machine



- Set the sleeve into the tool post and make sure the sleeve is set parallel.
- Minimize sleeve overhang.



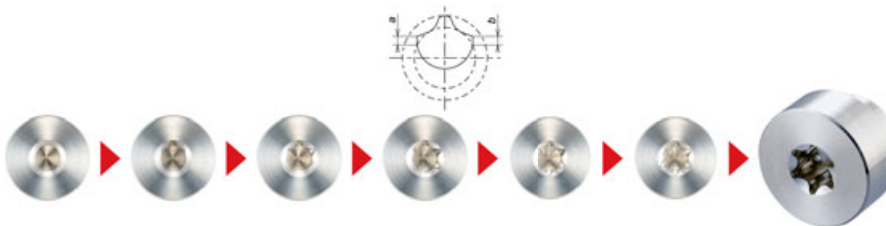
- Increase the number of machining passes with smaller depth of cut if the insert chips with large depth of cut. (0.025mm×5pass is recommended)  
No chamfering process is required for measuring purpose.
- Measure the length of both [a] and [b] with comparator or magnifier.
- Adjust centerline height by rotating the sleeve until you get the same length for [a] and [b].(The difference should be less than 0.02mm)  
\*If the straight is not seen with increased passes, you need to reset the insert and the sleeve. Please make sure both the insert and the sleeve are set up correctly.

## 4 Machine Hexagonal shape

\*Run full HEX machining program.

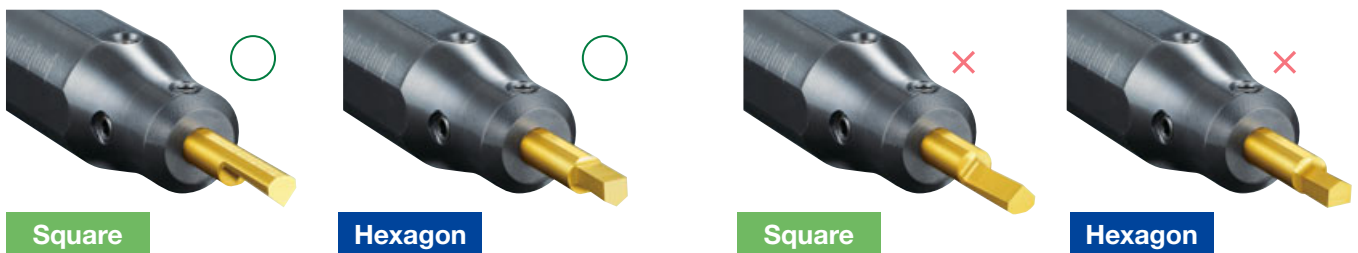


## Machining hexalobular shape is basically the same as hexagon socket



## Important Note for Insert Set-up

When using the STICK DUO HYPER series, it is important that the insert is installed and oriented so the bar flat is lined up with the clamp screws. If installed in the wrong position, insert edge chipping may occur due to interference with the positioning and clamping screws. See diagram below.



# Machining Program Code Explanation

Important: The programming codes and values will depend on the machine brands. For details, please contact the machine manufacturer.

Example machining piece : Hexagon socket dimensions  
 : AF 3.0mm, Diagonal 3.46mm, Socket depth 3.5mm, Pilot drill diameter  $\phi$ 3.0mm  
 DOC : Roughing 0.025mm / Finishing 0.005mm  
 Insert bar : TM4 SSP030N1940H

## Programming tips

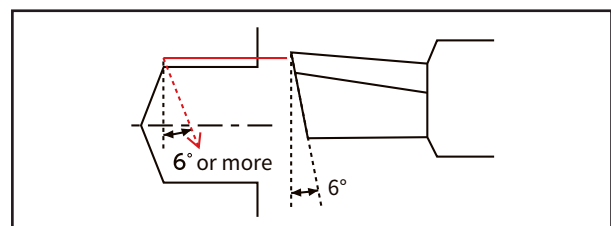
- Make a program considering final "X" position.
  - #1 Final "X" position : 3.46mm (AF)
  - #2 Finishing position of roughing :  $3.46 - 0.01$  (Finishing) = 3.45mm
  - #3 Calculate total DOC for roughing :  $3.45 - 3.0$  (Pilot hole) = 0.45mm
  - #4 Determine number of cuts :  $0.45 \div 0.05$  (DOC for Dia.) = 9.0 + 2 (round down to whole number and add "2" for program adjustment)  
 → Roughing sequence runs 11 times
  - #5 Set starting point :  $3.45 - (0.05 \times (11 - 1))$  = 2.95mm : must subtract by "1" for program adjustment

Main program
☆ : Rear spindle rotation stop
☆ : Back spindle indexing 0° ..... ①
T0000 (Shaper)
G50 U1.5 ..... ②
G0 X2.95 Z-2.0T ○○ call ..... ③
☆ : Sub-program cal (○○○①) Repeat 11 times ..... ④
☆ : Sub-program cal (○○○②) ..... ⑤
☆ Back spindle indexing 60° ..... ①
G0 X2.95 Z-2.0
☆ : Sub-program cal (○○○①) Repeat 11 times ..... ④
☆ : Sub-program cal (○○○②) ..... ⑤
☆ : Back spindle indexing 120° ..... ①
G0 X2.95 Z-2.0
☆ : Sub-program cal (○○○①) Repeat 11 times ..... ④
☆ : Sub-program cal (○○○②) ..... ⑤
☆ : Back spindle indexing 180° ..... ①
G0 X2.95 Z-2.0
☆ : Sub-program cal (○○○①) Repeat 11 times ..... ④
☆ : Sub-program cal (○○○②) ..... ⑤
☆ : Back spindle indexing 240° ..... ①
G0 X2.95 Z-2.0
☆ : Sub-program cal (○○○①) Repeat 11 times ..... ④
☆ : Sub-program cal (○○○②) ..... ⑤
☆ : Back spindle indexing 300° ..... ①
G0 X2.95 Z-2.0
☆ : Sub-program cal (○○○①) Repeat 11 times ..... ④
☆ : Sub-program cal (○○○②) ..... ⑤
☆ : Spindle indexing release
G0 Z-2.0
G50 U-1.5
G0 U0 W0 T0
M1

Sub-program ①
N○○○① (Roughing)
G4 U0.02 ..... ⑥
G98 G1 Z3.5 F3000 ..... ⑦
G4 U0.02
U-0.2 W-0.018 ..... ⑧
G4 U0.02
G0 Z-2.0
G4 U0.02
U0.25 ..... ⑨
M99

Sub-program ②
N○○○② (Finishing)
G98 G1 X3.46 Z-2.0 F1000
G4 U0.02
Z3.5 F3000
G4 U0.02
U-0.2 W-0.018
G4 U0.02
G0 Z-2.0
M99

- ④ = Go to the Sub-Program #1.
  - Sequence runs 11 times. First cutting point X2.95 and final cutting point X3.45, with 0.05 DOC (for diameter) each time.
- ⑤ = Go to the Sub-Program #2, for finishing sequence.
  - Finishing operation with 0.005mm DOC (X 3.46) is recommended for better surface finish.
- ⑥ = Specify dwell time. This allows the program and machine to stay synchronized.
- ⑦ = Cut into part 3.5mm. F3000 is recommended feed to be used for most materials; including Titanium Alloy and Stainless Steel.
- ⑧ = This code backs off the tool with an angle greater than K5 degrees (10 degrees used in example). See page 7-3 ~ 7-5.



- ⑨ = Return to the X position + 0.05mm (the DOC for diameter).

☆ : Enter the program corresponding to your machine.

- ① = Index the sub-spindle 6 times in 60 degree increments.
- ② = Specify the coordinate system shift command (in X axis direction) for the tool.
  - \* A positive direction shift is recommended for easier programming.
  - [2 x HF2 ; where HF2 is tool dimension located in the catalog].
- ③ = Execute the positioning of the tool.
  - X position should be smaller than pilot drill diameter.
  - Z position should be offset 2.0 mm from material to achieve program feed rate.

# Hexagon Socket Programming Code Examples from Machine Builders in Metric

Important: The programming codes and values will depend on the machine brands. For details, please contact to the machine manufactures.

Example machining piece : Hexagon socket dimensions  
 : AF 3.0mm, Diagonal 3.46mm, Socket depth 3.5mm, Pilot drill diameter  $\phi$ 3.0mm  
 DOC : Roughing 0.025mm / Finishing 0.005mm  
 Insert bar : TM4 SSP030N1940H

## | CITIZEN

Main program	
M25	
M78 S0 ..... ①	
T○○○○ (Shaper)	
G50 U1.5 ..... ②	
G0 X2.95 Z-2.0 T○○ ..... ③	
M98 P2100 L11 ..... ④	
M98 P2200 ..... ⑤	
M78 S60 ..... ①	} 《A》
G0 X2.95 Z-2.0	
M98 P2100 L11	
M98 P2200	
Repeat 《A》 at S120, S180, S240, S300 with indexing at 60° increments	
M20	
G0 Z-2.0	
G50 U-1.5	
G0 U0 W0 T0	
M1	

## | STAR

Main program	
M25	
T○○○○ (Shaper)	
G50 U1.5 ..... ②	
M8	
G0 X2.95 Z-2.0 C0 T○○ ..... ①③	
M98 P2100 L11 ..... ④	
M98 P2200 ..... ⑤	
G0 C60.0 ..... ①	} 《A》
G0 X2.95 Z-2.0	
M98 P2100 L11	
M98 P2200	
Repeat 《A》 at S120, S180, S240, S300 with indexing at 60° increments	
G0 Z-2.0	
G50 U-1.5	
G0 T0	
G28 W0	
M1	

## | TSUGAMI

Main program	
M105	
M150	
G28 H0 ..... ①	
M182	
T○○○○ (Shaper)	
G50 U1.5 ..... ②	
G0 X2.95 Z2.0 T○○ ..... ③	
M98 P2100 L11 ..... ④	
M98 P2200 ..... ⑤	
M183	
G0 C60 ..... ①	} 《A》
M182	
G0 X2.95 Z2.0	
M98 P2100 L11	
M98 P2200	
Repeat 《A》 at S120, S180, S240, S300 with indexing at 60° increments	
M183	
M151	
G0 Z2.0	
G50 U-1.5	
G0 U0 W0 T0	
M1	

Sub-program ①	
N2100 (Roughing)	
G4 U0.02 ..... ⑥	
G98 G1 Z3.5 F3000 ..... ⑦	
G4 U0.02	
U-0.2 W-0.018 ..... ⑧	
G4 U0.02	
G0 Z-2.0	
G4 U0.02	
U0.25 ..... ⑨	
M99	

Sub-program ①	
O2100 (Roughing)	
G4 U0.02 ..... ⑥	
G98 G1 Z3.5 F3000 ..... ⑦	
G4 U0.02	
U-0.2 W-0.018 ..... ⑧	
G4 U0.02	
G0 Z-2.0	
G4 U0.02	
U0.25 ..... ⑨	
M99	

Sub-program ①	
O2100 (Roughing)	
G4 U0.02 ..... ⑥	
G98 G1 Z-3.5 F3000 ..... ⑦	
G4 U0.02	
U-0.2 W0.018 ..... ⑧	
G4 U0.02	
G0 Z2.0	
G4 U0.02	
U0.25 ..... ⑨	
M99	

Sub-program ②	
N2200 (Finishing)	
G98 G1 X3.46 Z-2.0 F1000	
G4 U0.02	
Z3.5 F3000	
G4 U0.02	
U-0.2 W-0.018	
G4 U0.02	
G0 Z-2.0	
M99	

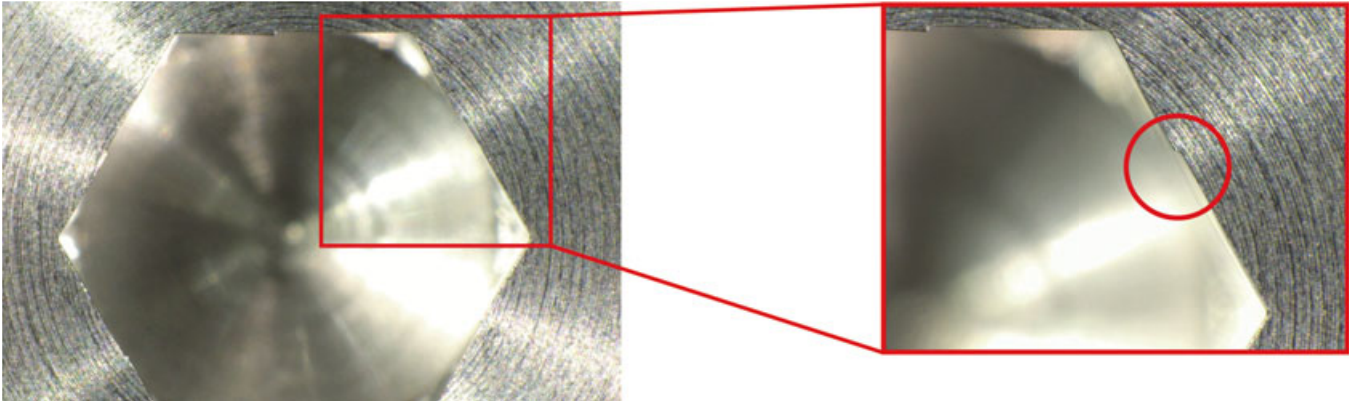
Sub-program ②	
O2200 (Finishing)	
G98 G1 X3.46 Z-2.0 F1000	
G4 U0.02	
Z3.5 F3000	
G4 U0.02	
U-0.2 W-0.018	
G4 U0.02	
G0 Z-2.0	
M99	

Sub-program ②	
O2200 (Finishing)	
G98 G1 X3.46 Z2.0 F1000	
G4 U0.02	
Z-3.5 F3000	
G4 U0.02	
U-0.2 W0.018	
G4 U0.02	
G0 Z2.0	
M99	

Grade  
 1  
 Insert  
 2  
 Ext. Toolholder  
 3  
 Int. Toolholder  
 4  
 Threading  
 5  
 Grooving  
 6  
 Shaper  
 7  
 Endmill  
 8  
 Drilling Tool  
 9  
 Technical Reference  
 10

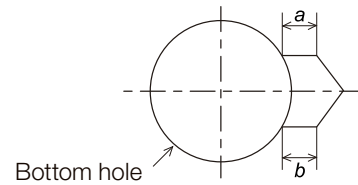
## Troubleshooting

### Problem: Step on sides

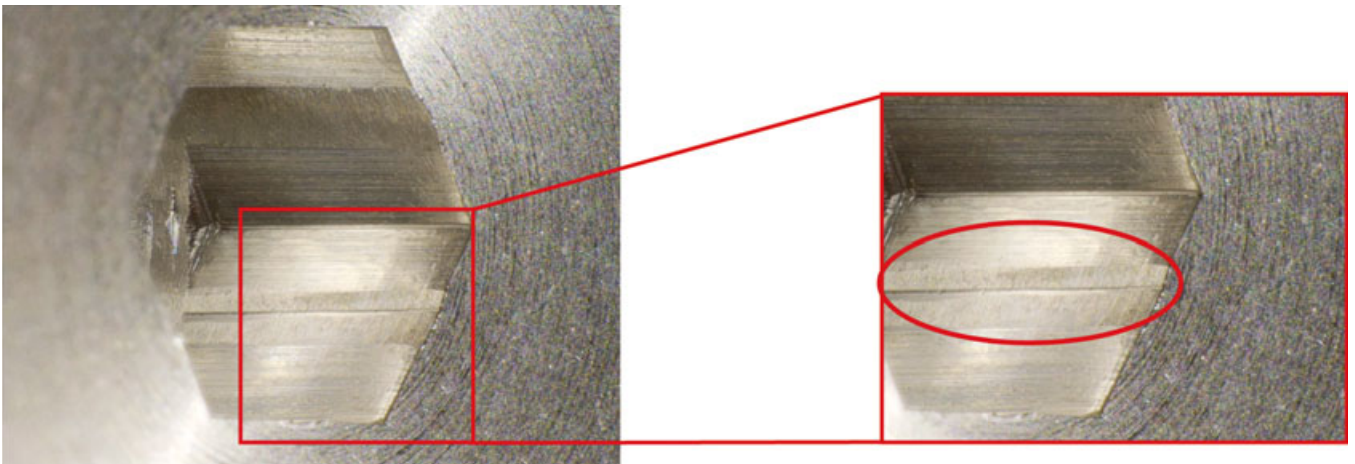


**Cause:** Incorrect tool set-up (Center-line shift)

**Solution:** Machine one angle and make sure both [a] and [b] lengths are identical, rotating the sleeve if necessary



### Problem: Wall dented



**Cause:** Pilot hole remaining

**Solution:** Need pilot hole tool's offset

### Problem: Wall tapered

**Solution:**

- Smaller depth of cut
- Less tool overhang

### Problem: Chuck is slipping / Insert chipped

**Solution:**

- Run at 3000 mm/min feed rate
- Smaller depth of cut

- 
- 3000 mm/min feed rate can cover most materials including Titanium alloy and Stainless steel.
  - Too slow or too fast of a feed rate may cause excessive tool pressure for the workpiece and tool.



# 8. Endmill

---



# Endmill

---



**TUNGFORCE**

Mini square shoulder milling cutters for high productivity

  $\varnothing 0.313'' - \varnothing 1.000''$  ( $\varnothing 6 \text{ mm} - \varnothing 16 \text{ mm}$ )

8-4 -

**P M N S H**



**TUNGMEISTER**

Endmills with exchangeable heads for reduced tool change time

$\varnothing 0.250'' - \varnothing 0.500''$  ( $\varnothing 5 \text{ mm} - \varnothing 25 \text{ mm}$ )

8-2, 8-36 -

**P M N S H**



## Optimal tool combination for maximum productivity

Significantly reduced tool indexing time improves machining efficiency



### 1 Wide range of geometries

45 kinds 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

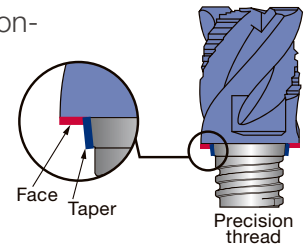
### High accuracy and repeatability

Repeatability and accuracy are maintained due to full contact of both taper and face.

Head exchange accuracy

Height:  $\pm 20 \mu\text{m}$

Run out:  
 $\leq 20 \mu\text{m}$   
( $\leq 0.0008''$ )







## VEH, VEE, VED

Square



Extensive tool diameter range from 5 to 12 mm 0.250" to 0.500".

Covers a broad range of applications from precision machining to large size parts.



## VMT

Threading



ISO metric  
VMT\*\*\*IS



Unified  
VMT\*\*\*UN



Whitworth  
VMT\*\*\*W

## Thread milling heads

With multiple teeth  
for ISO, Unified, and Whitworth threads



## VTR

Threading



ISO metric  
60° partial profile  
VTR\*\*\*IS



Whitworth  
55° partial profile  
VTR\*\*\*W

## Thread milling heads

With single tooth  
for ISO and Whitworth threads

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

1

2

3

4

5

6

7

8

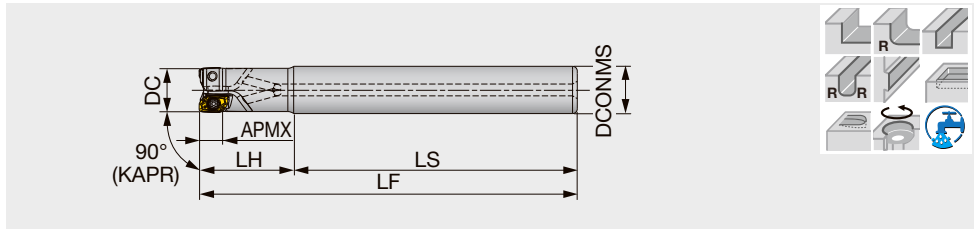
9

10

## EPAV04/06

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...
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...
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...

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...
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...
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...
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...

Approach angle



### INCH SPARE PARTS



Designation	Clamping screw	Lubricant	Wrench
EPAV06U...	CSPB-2H	M-1000	IP-6DB

Recommended clamping torque: CSPB-2H = 0.52 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

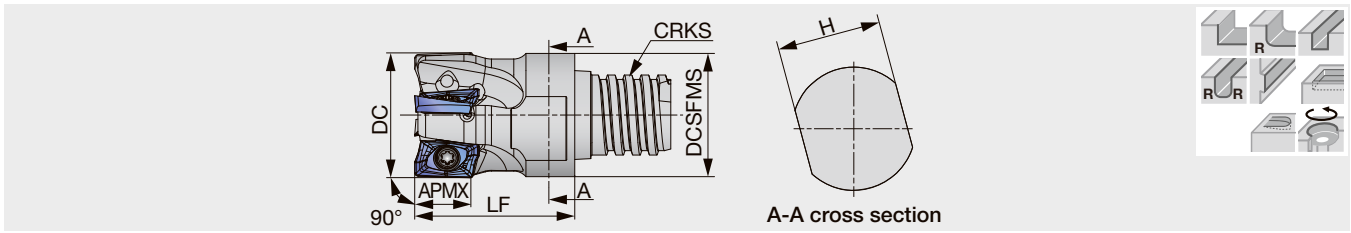
Recommended clamping torque: CSPB-1.8L3.3, CSPB-1.8L3.6 = 0.5 N·m, CSPB-2H = 0.7 N·m

Reference pages: Inserts → 8-6, Standard cutting conditions → 8-6 - 8-7

## HPAV06-S

Square shoulder endmill, modular type (TungMeister), with screw clamp system

GAMP = +6.9° ~ +7.6°, GAMF = -35.2° ~ -32.4°



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

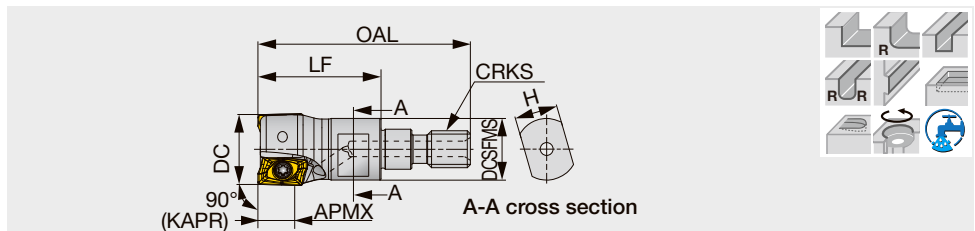
Designation	Wrench*
HPAV06M010S...	KEYV-S06
HPAV06M012S...	KEYV-S08
HPAV06M016S...	KEYV-S10

\*sold separately

## HPAV06-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°



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...

### SPARE PARTS

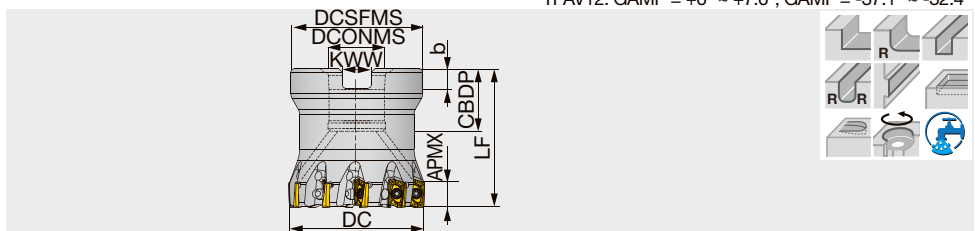
Designation	Clamping screw	Lubricant	Wrench
HPAV06M...	CSPB-2H	M-1000	IP-6DB

Recommended clamping torque: 1.3 N·m

## TPAV06

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°



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...

### SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench	Shell locking bolt
TPAV06M040B16.0R10	CSPB-2H	M-1000	IP-6DB	CM8X30H

Recommended clamping torque: CSPB-2H = 0.52 lbs·ft

Reference pages: Inserts → 8-6, Standard cutting conditions → 8-6 - 8-7

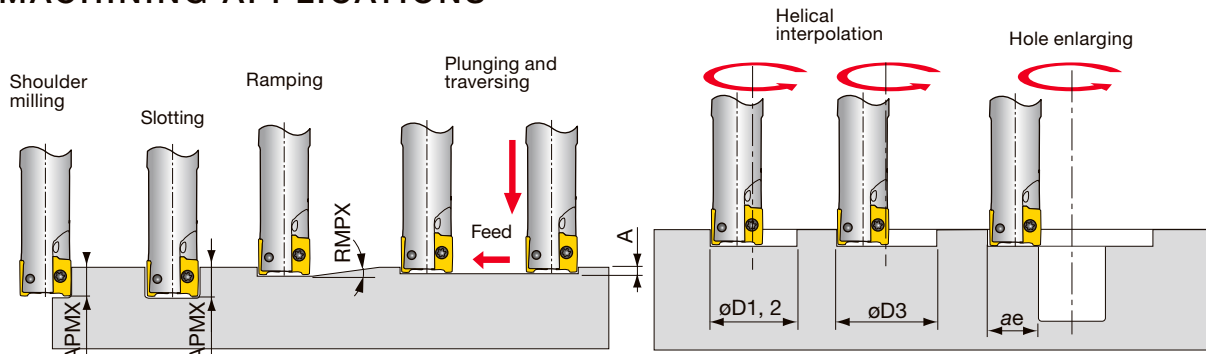
Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference





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	
	Carbon steel and alloy steel 1055, etc.	- 300 HB	First choice	AH3225	490 - 1150	0.003 - 0.005	
	Prehardened 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	
	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	
	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	
	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
		D2, etc.	50 - 60 HRC	First choice	AH120	130 - 210	0.0016 - 0.003

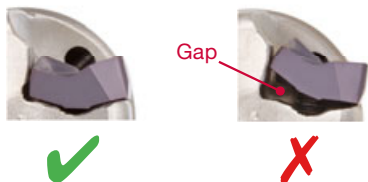
## MACHINING APPLICATIONS



Inch	DC	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging A	Min. machining $\phi D1$	Max. machining $\phi D2$ $\phi D3^*$		Max. cutting width in enlarging 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

\*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.

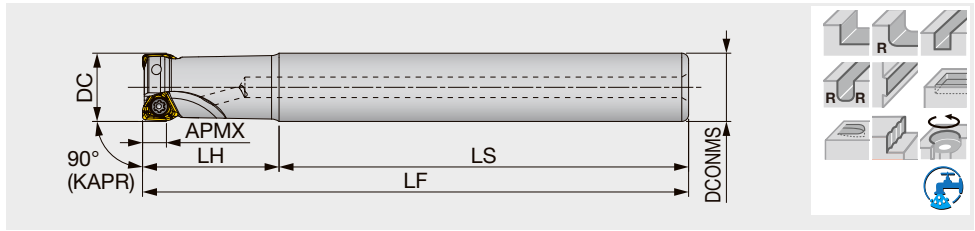


Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

1  
2  
3  
4  
5  
6  
7  
8  
9  
10

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°



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...
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...

### SPARE PARTS



Designation	Clamping screw	Grip
EPA04R008M08.0-01	CSPB-1.8L3.3	IP-6DB
EPA04R010 - 025...	CSPB-1.8L3.6	IP-6DB

Recommended clamping torque: CSPB-1.8L3.6 = 0.5 N·m, CSPB-1.8L3.3 = 5 N·m

Approach angle

7°-25°

41°-45°

60°-70°

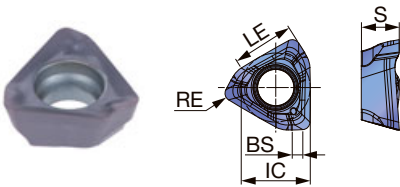
85°-88°

90°

Others

## INSERTS

### TOMT-MM



<b>P</b> Steel	☆	★							
<b>M</b> Stainless		★							
<b>K</b> Cast iron	★								
<b>N</b> Non-ferrous									
<b>S</b> Superalloys	★	★	★						
<b>H</b> Hard materials			★						

★ : First choice  
☆ : Second choice

Designation	RE	APMX	Coated							LE	IC	S	BS	
			AH120	AH3225	AH8015									
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

● : Line up

# STANDARD CUTTING CONDITIONS

## EPA04

ISO	Workpiece materials	Hardness	Grades	Cutting speed Vc (sfm)	Feed per tooth fz (ipt)
<b>P</b>	Low carbon steel 1015, etc.	- 200 HB	AH3225	326 - 820	0.002 - 0.005
	Carbon steel and alloy steel 1055, etc.	- 300 HB	AH3225	326 - 755	0.002 - 0.005
	Prehardened steel NAK80, PX5, etc.	30 - 40 HRC	AH3225	326 - 591	0.002 - 0.004
<b>M</b>	Stainless steel 304SS, etc.	- 200 HB	AH3225	295 - 656	0.002 - 0.004
<b>K</b>	Gray cast iron Class 25, etc.	150 - 250 HB	AH120	326 - 984	0.002 - 0.005
	Ductile cast iron 65-45-12, etc.	150 - 250 HB	AH120	326 - 656	0.002 - 0.005
<b>S</b>	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	AH3225	66 - 197	0.002 - 0.004
	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	AH8015	66 - 131	0.002 - 0.003
<b>H</b>	Hardened steel	H13, etc.	AH8015	164 - 492	0.002 - 0.003
		D2, etc.	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.

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

## Square, Face mill, High feed

### Inch

★ : First choice ☆ : Second choice

Head geometry	Designation	Appearance	Application			Tool dia.	No. of cutting edges	Cutting edge length		Corner geometry	Helix angle	Pitch	CRKS	Workpiece material						Remarks	Page
			Roughing	Semifinishing	Finishing			L/D	APMX					P	M	K	N	S	H		
Square	<b>VEE**-04...</b> <b>VED**-04...</b>		✓	✓	✓	ø0.250" - ø0.500"	4	0.8XD	0.200" - 0.374"	R	30/45	Regular	S04 - S08	★	★	★	☆	★	☆	General	8-40
	<b>VEE**I...</b>		✓	✓	✓	ø0.312" - ø0.500"	4	0.6 - 0.8XD	0.220" - 0.374"	R/ Chamfered	38	Variable	S05 - S08	★	★	★	☆	★	☆		8-41
	<b>VEE**-03...</b>		✓	✓	✓	ø0.312" - ø0.500"	3	0.5XD	0.200" - 0.374"	Sharp edge	38/45	Regular	S05 - S08	★	★	★	☆	★	☆	For key way	8-41
	<b>VEE**A02...</b>		✓	✓	✓	ø0.375" - ø0.500"	2	0.7XD	0.270" - 0.374"	R	45	Regular	S06 - S08					☆	★		8-42
	<b>VEE**A03...</b>		✓	✓	✓	ø0.312" - ø0.500"	3	0.6XD	0.200" - 0.315"	R	45	Regular	S05 - S08					☆	★		8-42
	<b>VEE**C...</b>		✓	✓	✓	ø0.312" - ø0.500"	4	0.6 - 0.8XD	0.200" - 0.369"	Chamfered	45	Regular	S05 - S08	★	★	★	☆	★	☆	Rough/ Finish combination geometry	8-43

### Metric

★ : First choice ☆ : Second choice



Head geometry	Designation	Appearance	Application			Tool dia.	No. of cutting edges	Cutting edge length		Corner geometry	Helix angle	Pitch	CRKS	Workpiece material						Remarks	Page
			Roughing	Semifinishing	Finishing			L/D	APMX					P	M	K	N	S	H		
Square	<b>VEH...</b>		✓	✓	✓	ø8 - ø12 mm	4	0.6 - 0.8XD	5 - 9 mm	R	Variable	Variable	S05 - S08	★	★	★	☆	★	☆		8-39
	<b>VEH...</b>		✓	✓	✓	ø8 - ø12 mm	4	1.2 - 1.5XD	12 - 18 mm	R	Variable	Variable	S05 - S08	★	★	★	☆	★	☆	Long edge	8-39
	<b>VEE**-04...</b> <b>VED**-04...</b>		✓	✓	✓	ø5 - ø12 mm	4	0.8XD	4 - 9 mm	R	30/45	Regular	S04 - S08	★	★	★	☆	★	☆	General	8-40
	<b>VEE**I...</b>		✓	✓	✓	ø8 - ø12 mm	4	0.6 - 0.8XD	5 - 9 mm	R/ Chamfered	38	Variable	S05 - S08	★	★	★	☆	★	☆		8-41
	<b>VEE**-03...</b>		✓	✓	✓	ø7.7 - ø12 mm	3	0.5XD	4 - 9 mm	Sharp edge	38/45	Regular	S05 - S08	★	★	★	☆	★	☆	For key way	8-41
	<b>VEE**A02...</b>		✓	✓	✓	ø10 - ø12 mm	2	0.7XD	7 - 9 mm	R	45	Regular	S06 - S08					☆	★		8-42
	<b>VEE**A03...</b>		✓	✓	✓	ø8 - ø12 mm	3	0.6XD	5 - 8 mm	R	45	Regular	S05 - S08					☆	★		8-42
	<b>VEE**C...</b>		✓	✓	✓	ø8 - ø12 mm	4	0.6 - 0.8XD	5 - 9 mm	Chamfered	45	Regular	S05 - S08	★	★	★	☆	★	☆	Rough/ Finish combination geometry	8-43
Face mill	<b>VFM...</b>		✓	✓	✓	ø12 - ø25 mm	6	0.3XD	3.6 - 7.5 mm	R	-	Regular	S05 - S10	★	★	★	☆	★	☆	With coolant hole	8-45



# Multi-function (chamfering, spot drill, center hole, counterboring)









## Inch

★ : 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						Remarks	Page
										P	M	K	N	S	H		
 Chamfering	VCA**-04...		Without	ø0.375"	4	45	0	Regular	S06	★	★	★	☆	★	☆	I086	

## Metric





★ : 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						Remarks	Page
										P	M	K	N	S	H		
 Chamfering	VCA**-04/06...		Without	ø10 - ø16 mm	4, 6	45	0	Regular	S06 - S10	★	★	★	☆	★	☆	I086	
 Chamfering	VCP**-02...		With	ø8 - ø16.5 mm	2	30/45/60	0	Regular	S05 - S10	★	★	★	☆	★	☆	I088	
 Spot drill	VDS...		With	ø8 - ø16 mm	2	45	10	Regular	S05 - S10	★	★	★	☆	★	☆	Low cutting force I088	
 Center hole	VDP**-02...		With	ø1.07 - ø4.09 mm	2	-	0	Regular	S04 - S08	★	★	★	☆	★	☆	For center hole I090	

Grade  
1  
Insert  
2  
Ext. Toolholder  
3  
Int. Toolholder  
4  
Threading  
5  
Grooving  
6  
Shaper  
7  
Endmill  
8  
Drilling Tool  
9  
Technical Reference  
10







## Slotting Inch

★ : First choice ☆ : Second choice







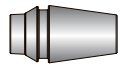
Head geometry	Designation	Appearance	Groove width (mm)	Tool dia. (mm)	No. of cutting edges	Edge shape	Helix angle	Pitch	CRKS	Workpiece material					Remarks	Page
										P	M	N	S	H		
 Slotting	<b>VST**-3...</b>		1.2 - 3.17	ø15.7 - ø17.7	3	R	0	Regular	S06	★	★	☆	★	☆		8-49
	<b>VST**-4/6...</b>		0.76 - 10	ø21.7 - ø27.7	4, 6	R	0	Regular	S08, S10	★	★	☆	☆	☆		8-50
	<b>VST**A45...</b>		3.4 - 5.5	ø17.7 - ø21.7	3, 4	Chamfered	0	Regular	S06, S08	★	★	☆	★	☆	For chamfering, 45° chamfer angle	8-50

## Threading Metric

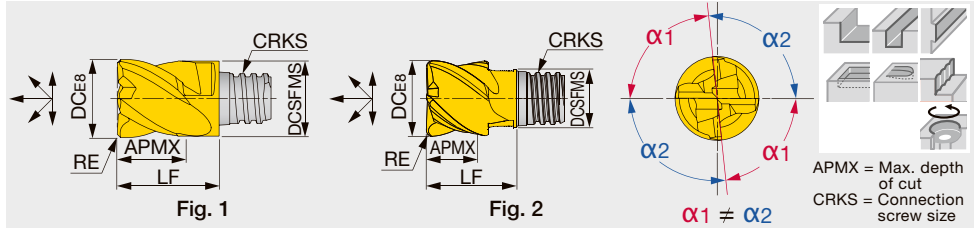
★ : First choice ☆ : Second choice

Head geometry	Designation	Appearance	Feature	Wiper edge	No. of cutting edges	Tool dia. (mm)	Internal/External	Thread type	Min. thread size	CRKS	Workpiece material					Page
											P	M	N	S	H	
 Threading	<b>VMT***IS</b>		Full profile	With	3 - 6	ø10 - ø16	Internal	ISO metric	M12X0.75	S05 - S08	★	★	☆	★	☆	5-52
	<b>VMT***UN</b>		Full profile	With	3, 4, 5	ø10 - ø16	Internal	Unified	9/16-24 UNEF	S05 - S08	★	★	☆	★	☆	5-52
	<b>VMT***W</b>		Full profile	With	4	ø10, 16	Internal/External	Whitworth	G1/4	S05, S08	★	★	☆	★	☆	5-53
	<b>VTR***IS</b>		Partial profile	Without	3, 4	ø15.7 - ø21.7	Internal/External	60° partial profile	M20X0.5	S06, S08	★	★	☆	★	☆	5-53
	<b>VTR***W</b>		Partial profile	Without	4	ø21.7	Internal/External	55° partial profile	G3/4	S08	★	★	☆	★	☆	5-53

## Shank

Shank	Neck	Appearance	Material				Page
			Steel	Carbide	Carbide (with coolant hole)	Tungsten (with coolant hole)	
Straight	Straight		✓	✓	✓	✓	8-56
Weldon	Straight		✓	-	-	-	8-59
Straight	Taper		✓	✓	-	✓	8-58
High rigidity shank			✓	✓	-	-	8-56
Straight (slotting)			✓	✓	✓	-	8-59
Adaptor for TungFlex			✓	-	-	-	8-59
ER collet			✓	-	-	-	8-60

### 4 flute, roughing - finishing, variable helix and pitch



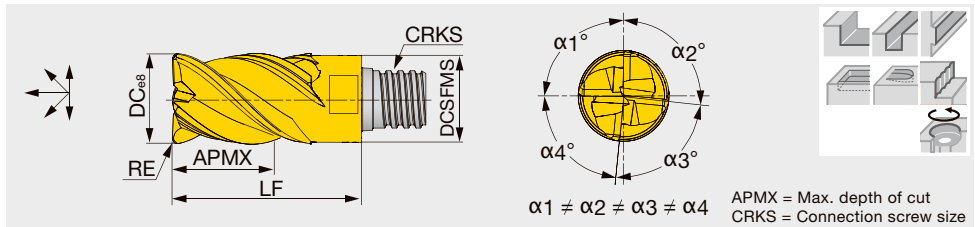
Metric	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*	Fig.
VEH080L05.0R05I04S05	●		4	41° - 45°	8	7.7	5	0.5	S05	10	KEYV-S05	7	1
VEH080L05.0R10I04S05		●	4	41° - 45°	8	7.7	5	1	S05	10	KEYV-S05	7	1
VEH100L07.0R10I04S05	●		4	41° - 45°	10	7.7	7	1	S05	12.8	KEYV-S05	7	2
VEH100L07.0R05I04S06		●	4	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

Torque\*: Recommended clamping torque (N-m)  
2 pieces per package

● : Line up

## VEH...

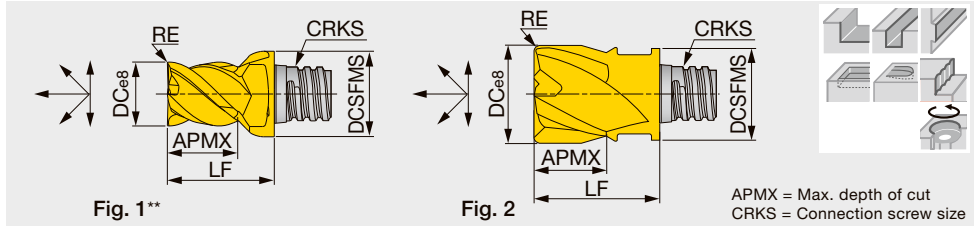
### 4 flute, roughing - finishing, long edge, variable helix and pitch



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

Torque\*: Recommended clamping torque (N-m)  
VEH080 - VEH120: 2 pieces per package

● : Line up



- Square
- Chamfering
- Slotting
- Others

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

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

Torque: Recommended clamping torque: lbs-ft (\*N·m)

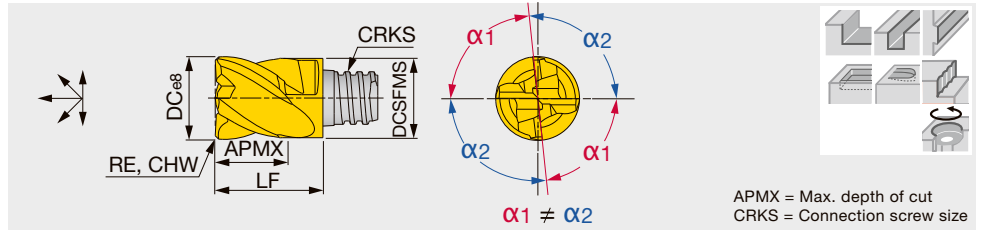
\*\*Fig. 1: Avoid interference with workpiece when using this cutting head. The shank diameter is larger than the cutter diameter when assembled.

2 pieces per package

● : Line up

## VEE\*\*-I...

4 flute, roughing - finishing, variable pitch



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

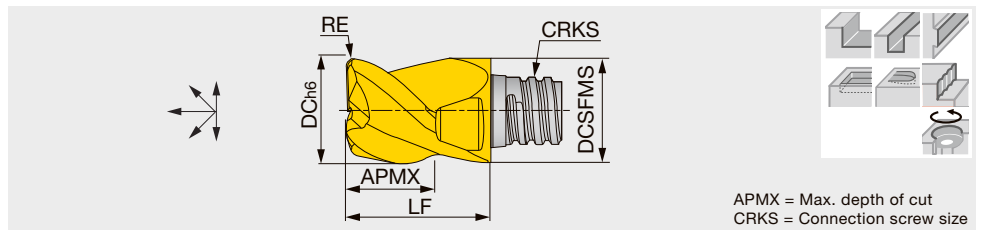
Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VEE080L05.0C30IU04S05	●	4	38°	8	7.7	5	-	0.3	S05	10	KEYV-S05	7
VEE100L07.0C40IU04S06	●	4	38°	10	9.7	7	-	0.4	S06	13	KEYV-S06	10
VEE120L09.0C50IU04S08	●	4	38°	12	11.7	9	-	0.5	S08	16.5	KEYV-S08	15

Torque: Recommended clamping torque: lbs-ft (\*N·m)  
VEE080 - VEE120: 2 pieces per package

● : Line up

## VEE\*\*-03...

3 flute, roughing - finishing, general, for key way



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

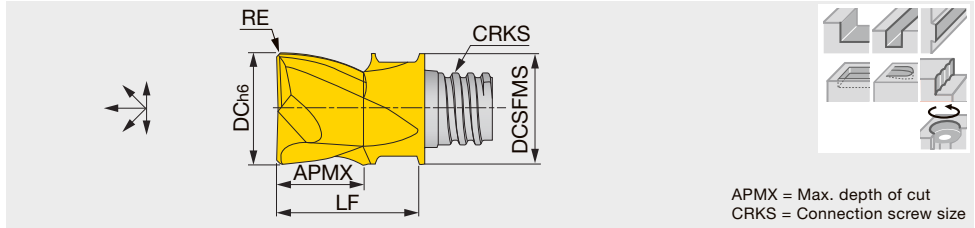
Metric	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE077L04.0R02-03S05	●	●	3	38°	7.7	7.7	4	0.2	S05	10	KEYV-S05	7
VEE080L05.0R00-03S05	●	●	3	45°	8	7.7	5	-	S05	10	KEYV-S05	7
VEE097L05.0R03-03S06	●	●	3	38°	9.7	9.7	5	0.3	S06	13	KEYV-S06	10
VEE100L07.0R00-03S06	●	●	3	45°	10	9.7	7	-	S06	13	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

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

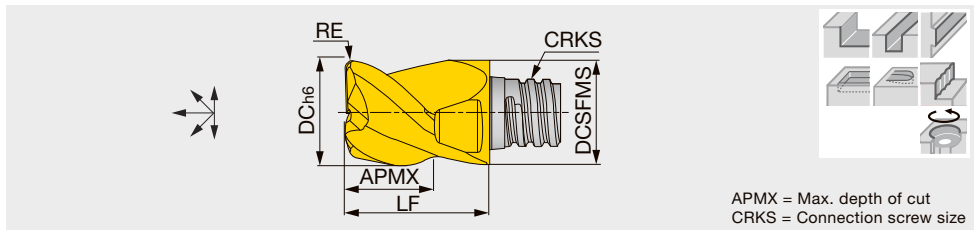
Torque: Recommended clamping torque: lbs-ft (\*N·m)  
2 pieces per package

● : Line up



## 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

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

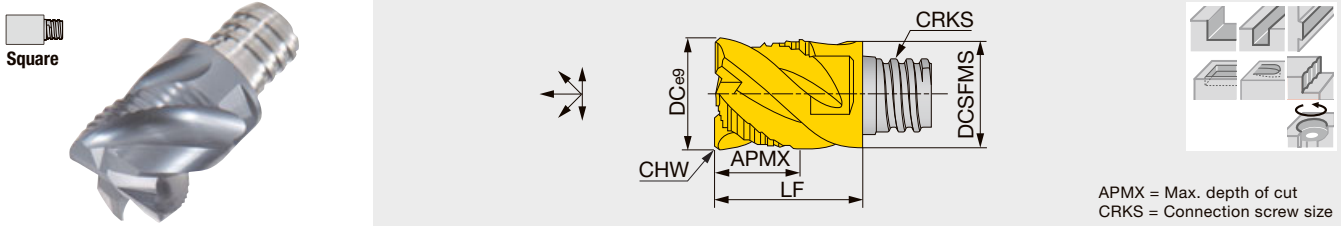
Torque: Recommended clamping torque: lbs-ft (\*N·m)  
2 pieces per package

● : Line up

Reference pages: Standard cutting conditions → 8-17 - 8-18

VEE\*\*C...

4 flute, roughing - semi finishing, roughing and finishing edge combination



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
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

Torque: Recommended clamping torque: lbs-ft (\*N-m)  
VEE080 - VEE120: 2 pieces per package

● : Line up

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)							Depth of cut ap (in)	Width of cut ae (in)
				Tool diameter: DC (in)								
				0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"		
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
	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
	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
	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
	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
	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
	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

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference





## STANDARD CUTTING CONDITIONS

VED / VEE: 6 flutes, VED / VEE: 8, 10 flutes, VED: 7, 9 flutes

ISO	Workpiece material	Hardness	Cutting speed Vc (sfm)	Tool diameter: DC (in)						Depth of cut ap (in)	Width of cut ae (in)
				0.312"	0.375"	0.500"	0.625"	0.750"	1.000"		
<b>S</b>	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
	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
<b>H</b>	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
	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

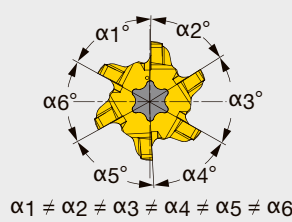
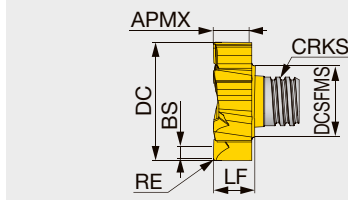
ISO	Workpiece material	Hardness	Cutting speed Vc (sfm)	Tool diameter: DC (in)						Depth of cut ap (in)	
				0.250"	0.312"	0.375"	0.500"	0.625"	0.750"		1.000"
<b>P</b>	Low carbon steels 1045, 1055, etc.	- 300 HB	260 - 590	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
	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
	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
<b>M</b>	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
<b>K</b>	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
	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
<b>N</b>	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
	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
<b>S</b>	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
	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
<b>H</b>	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
	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





# VFM...

6 flute, roughing - finishing, for face milling



APMX = Max. depth of cut  
CRKS = Connection screw size

Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	RE	BS	CRKS	LF	Wrench	Torque*
VFM120L03.6R02106S05	●	6	10°	12	7.7	3.6	0.2	1.2	S05	4.4	KEYV-T20	7
VFM160L04.8R04106S06	●	6	10°	16	9.7	4.8	0.4	2	S06	5.6	KEYV-T25	10
VFM200L06.0R04106S08	●	6	10°	20	11.7	6	0.4	2	S08	7	KEYV-T40L	15
VFM250L07.5R04106S10	●	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

## STANDARD CUTTING CONDITIONS

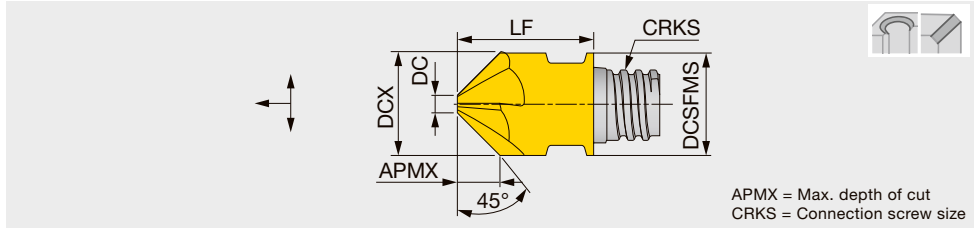
### Face milling

#### VFM

ISO	Workpiece material	Hardness	Cutting speed Vc (sfm)	Tool diameter: DC				Depth of cut ap (in)	Width of cut ae (in)
				ø12 mm	ø16 mm	ø20 mm	ø25 mm		
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
	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
	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
	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
	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
	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
	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

Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

4, 6 flute, chamfering angle: 45°



APMX = Max. depth of cut  
CRKS = Connection screw size

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

Torque: Recommended clamping torque: lbs-ft (\*N-m)  
2 pieces per package

● : Line up



## STANDARD CUTTING CONDITIONS

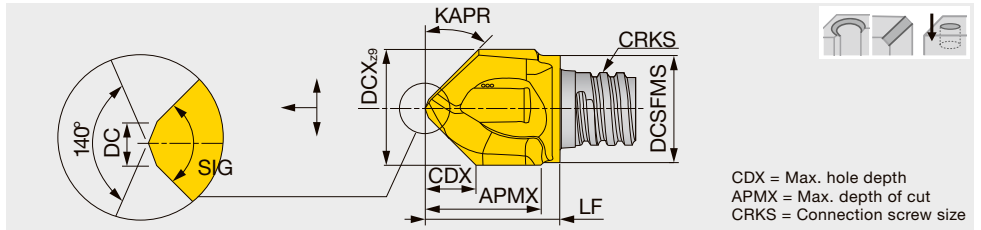
Chamfering and countersinking (Milling, Z-feed chamfering)

VCA

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
	High carbon steels 4140, etc.	- 300 HB	164 - 262	0.0024 - 0.0047
	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
	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
	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
	Hardened steel D2, etc.	50 - 60 HRC	66 - 131	0.0016 - 0.0031

## VCP\*\*-02...

2 flute, chamfering angle: 30°, 45°, 60°



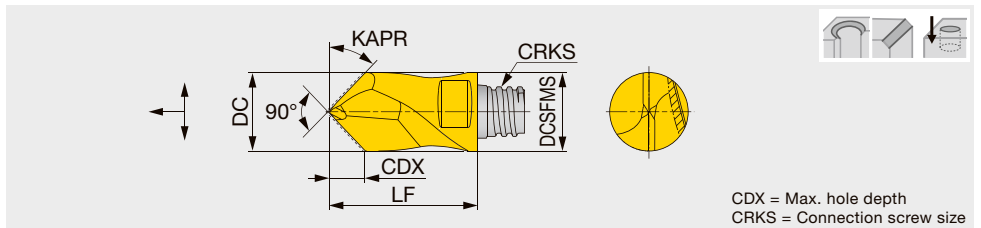
Metric	AH715	AH725	SIG	NOF	FHA	DCX	DCSFMS	APMX	CDX	CRKS	LF	DC	KAPR	Wrench	Torque*
VCP100L09.5A30-02S06		●	60°	2	0°	10	9.5	8.5	7.5	S06	11.75	1.5	60°	KEYV-S06	10
VCP120L12.0A30-02S08	●	●	60°	2	0°	12	11.5	11	9.2	S08	15.4	1.5	60°	KEYV-S08	15
VCP160L15.0A30-02S10	●	●	60°	2	0°	16	15.2	16	12	S10	20.2	2.5	60°	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

## VDS...

2 flute, chamfering angle: 45°, helix cutting edge



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

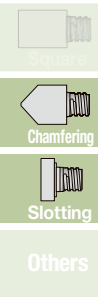
● : Line up

## STANDARD CUTTING CONDITIONS

### Spot drill

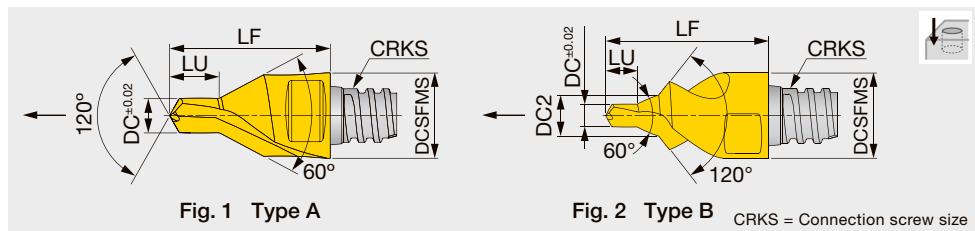
VCP, VDS

ISO	Workpiece material	Hardness	Cutting speed Vc (sfm)	Feed f (ipr)
<b>P</b>	Carbon steel 1045, 1055, etc.	- 300 HB	197 - 328	0.0024 - 0.0047
	Alloy steel 4140, 8620, etc.	- 300 HB	164 - 262	0.0024 - 0.0047
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	131 - 230	0.0024 - 0.0047
<b>M</b>	Stainless steels 304, 316, etc.	- 200 HB	98 - 164	0.0024 - 0.0047
<b>K</b>	Gray cast irons 250, 300, etc.	150 - 250 HB	262 - 394	0.0024 - 0.0047
	Ductile cast irons 400-15S, etc.	150 - 250 HB	262 - 394	0.0024 - 0.0047
<b>N</b>	Aluminum alloys	-	328 - 656	0.0031 - 0.0063
<b>S</b>	Titanium alloys Ti-6Al-4V, etc.	-	98 - 164	0.002 - 0.0039
	Heat-resistant alloys Inconel 718, etc.	-	66 - 131	0.0016 - 0.0031
<b>H</b>	Hardened steel H13, etc.	40 - 50 HRC	98 - 164	0.002 - 0.0039
	Hardened steel D2, etc.	50 - 60 HRC	66 - 131	0.0016 - 0.0031



### VDP\*\*-02...

2 flute, A/B type center



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

Torque\*: Recommended clamping torque (N-m)  
2 pieces per package

● : Line up

# STANDARD CUTTING CONDITIONS

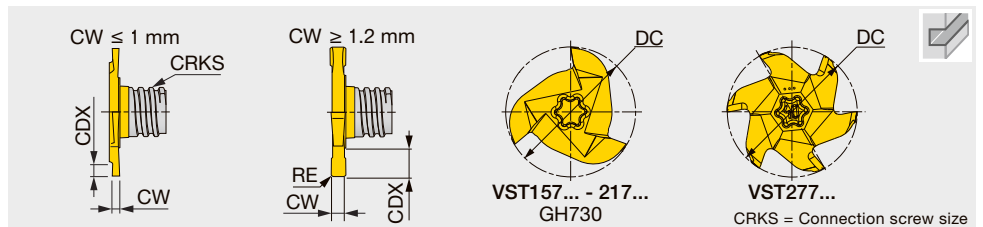
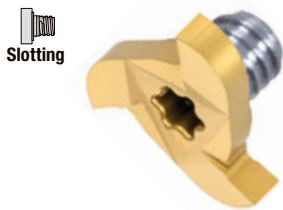
## Center drill

### VDP

ISO	Workpiece material	Hardness	Cutting speed Vc (sfm)	Feed : f (ipt)						
				VDP107	VDP165	VDP207	VDP324 / VDP328	VDP409 / VDP412	VDP509 / VDP513	VDP641
<b>P</b>	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
	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
	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
<b>M</b>	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
<b>K</b>	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
	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
<b>S</b>	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
	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
<b>H</b>	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
	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

## VST\*\*-3...

3 flute, for slotting



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 <sup>(2)</sup> / KEYV-T20	10
VST157W1.57R020-3S06	●		3	0°	15.7	1.57	0.2	S06	2.8	KEYV-177 <sup>(2)</sup> / KEYV-T20	10
VST157W2.00R020-3S06	●		3	0°	15.7	2	0.2	S06	2.8	KEYV-177 <sup>(2)</sup> / KEYV-T20	10
VST157W2.39R020-3S06	●		3	0°	15.7	2.39	0.2	S06	2.8	KEYV-177 <sup>(2)</sup> / KEYV-T20	10
VST157W2.50R020-3S06	●		3	0°	15.7	2.5	0.2	S06	2.8	KEYV-177 <sup>(2)</sup> / KEYV-T20	10
VST157W3.00R020-3S06	●		3	0°	15.7	3	0.2	S06	2.8	KEYV-177 <sup>(2)</sup> / KEYV-T25	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 <sup>(1)</sup>	0.05	S06	3.8	KEYV-177 <sup>(2)</sup> / KEYV-T20	10
VST177W1.40R005-3S06	●		3	0°	17.7	1.4 <sup>(1)</sup>	0.05	S06	3.8	KEYV-177 <sup>(2)</sup> / KEYV-T20	10
VST177W1.50R010-3S06	●		3	0°	17.7	1.5	0.1	S06	3.8	KEYV-177 <sup>(2)</sup> / KEYV-T20	10
VST177W1.57R020-3S06	●		3	0°	17.7	1.57	0.2	S06	3.8	KEYV-177 <sup>(2)</sup> / KEYV-T20	10
VST177W1.70R005-3S06	●		3	0°	17.7	1.7 <sup>(1)</sup>	0.05	S06	3.8	KEYV-177 <sup>(2)</sup> / KEYV-T20	10
VST177W2.00R020-3S06	●		3	0°	17.7	2	0.2	S06	3.8	KEYV-177 <sup>(2)</sup> / KEYV-T20	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 <sup>(2)</sup> / KEYV-T20	10
VST177W3.00R020-3S06	●	▲	3	0°	17.7	3	0.2	S06	3.8	KEYV-177 <sup>(2)</sup> / KEYV-T25	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 AH735

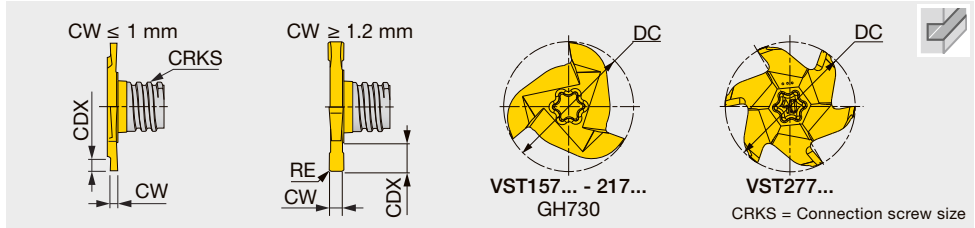
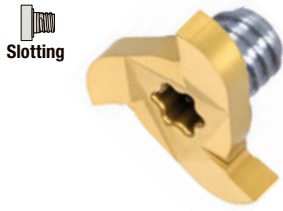
Torque\*: Recommended clamping torque (N-m)

2 pieces per package

● : Line up  
▲ : To be discontinued

## VST\*\*-4/6...

4, 6 flute, for slotting



Metric	GH730	AH735	NOF	FHA	DC	CW±0.02	RE	CRKS	CDX	Wrench	Torque*
VST217W0.76R000-4S08	●		4	0°	21.7	0.76 <sup>(1)</sup>	-	S08	1.5	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W0.86R000-4S08			4	0°	21.7	0.86 <sup>(1)</sup>	-	S08	1.7	KEYV-217	15
VST217W0.96R000-4S08	●		4	0°	21.7	0.96 <sup>(1)</sup>	-	S08	1.9	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W1.00R005-4S08	●		4	0°	21.7	1	0.05	S08	2	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W1.20R005-4S08	●		4	0°	21.7	1.2 <sup>(1)</sup>	0.05	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W1.40R005-4S08	●		4	0°	21.7	1.4 <sup>(1)</sup>	0.05	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W1.57R000-4S08	●		4	0°	21.7	1.57	-	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W1.70R010-4S08	●		4	0°	21.7	1.7 <sup>(1)</sup>	0.1	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W1.95R020-4S08	●		4	0°	21.7	1.95 <sup>(1)</sup>	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W2.00R020-4S08	●		4	0°	21.7	2	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W2.25R020-4S08	●		4	0°	21.7	2.25 <sup>(1)</sup>	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W2.39R020-4S08	●		4	0°	21.7	2.39	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W2.50R020-4S08	●	▲	4	0°	21.7	2.5	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W2.75R020-4S08	●		4	0°	21.7	2.75 <sup>(1)</sup>	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T25	15
VST217W3.00R020-4S08	●	▲	4	0°	21.7	3	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T30L	15
VST217W3.17R020-4S08	●		4	0°	21.7	3.17	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T30L	15
VST217W3.25R020-4S08	●		4	0°	21.7	3.25 <sup>(1)</sup>	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T30L	15
VST217W4.00R020-4S08	●		4	0°	21.7	4	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T30L	15
VST217W4.25R020-4S08	●		4	0°	21.7	4.25 <sup>(1)</sup>	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T30L	15
VST217W4.75R020-4S08	●		4	0°	21.7	4.75	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T30L	15
VST217W5.25R020-4S08	●		4	0°	21.7	5.25 <sup>(1)</sup>	0.2	S08	4.5	KEYV-217 <sup>(2)</sup> / KEYV-T30L	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 <sup>(1)</sup>	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 AH735

Torque\*: Recommended clamping torque (N-m)

2 pieces per package

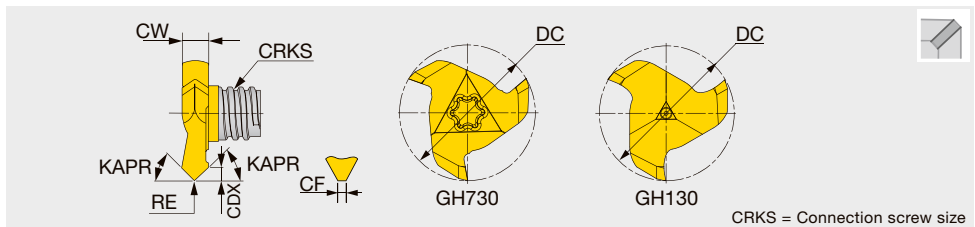
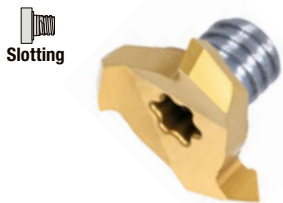
● : Line up

▲ : To be discontinued



## VST\*\*A45...

3, 4 flute, for slotting with 45° chamfer



Metric	GH730	GH130	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 <sup>(1)</sup> / KEYV-T25 <sup>(2)</sup>	10
VST217L01.70A45-4S08	●	▲	4	0°	21.7	5.5	45°	S08	1.7	1.5	-	KEYV-217 <sup>(1)</sup> / KEYV-T30L <sup>(2)</sup>	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 → 8-25

# STANDARD CUTTING CONDITIONS

## Slotting

### VST

ISO	Workpiece material	Hardness	VST		VTB	
			Cutting speed Vc (sfm)	Feed per tooth fz (ipt)	Cutting speed Vc (sfm)	Feed per tooth fz (ipt)
<b>P</b>	Low carbon steels 1045, 1055, etc.	- 300 HB	262 - 591	0.002 - 0.006	262 - 591	0.003 - 0.007
	High carbon steels 4140, etc.	- 300 HB	197 - 394	0.002 - 0.005	197 - 394	0.002 - 0.006
<b>M</b>	Stainless steels 304, 316, etc.	- 200 HB	164 - 394	0.002 - 0.005	164 - 394	0.002 - 0.006
<b>K</b>	Grey cast irons 250, 300, etc.	150 - 250 HB	328 - 656	0.002 - 0.006	328 - 656	0.003 - 0.007
	Ductile cast irons 400-15S, etc.	150 - 250 HB	328 - 656	0.002 - 0.005	328 - 656	0.002 - 0.006
<b>N</b>	Aluminum alloys Si < 13%	-	656 - 1969	0.002 - 0.006	656 - 1969	0.003 - 0.007
	Aluminum alloys Si ≥ 13%	-	328 - 984	0.001 - 0.005	328 - 984	0.002 - 0.006
<b>S</b>	Titanium alloys Ti-6Al-4V, etc.	-	131 - 197	0.002 - 0.003	131 - 197	0.002 - 0.006
	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
<b>6</b>	<b>10</b>	-25	-25	0	0	0	0	+78
		-47	-61	-9	-15	-36	-58	+42
<b>10</b>	<b>14</b>	-32	-32	0	0	0	0	+93
		-59	-75	-11	-18	-43	-70	+50
<b>14</b>	<b>18</b>	-32	-32	0	0	0	0	+103
		-59	-75	-11	-18	-43	-70	+60
<b>18</b>	<b>30</b>	-40	-40	0	0	0	0	-
		-73	-92	-13	-21	-52	-84	-

JISB0401-2: 1998 (ISO286-2: 1988) extract

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

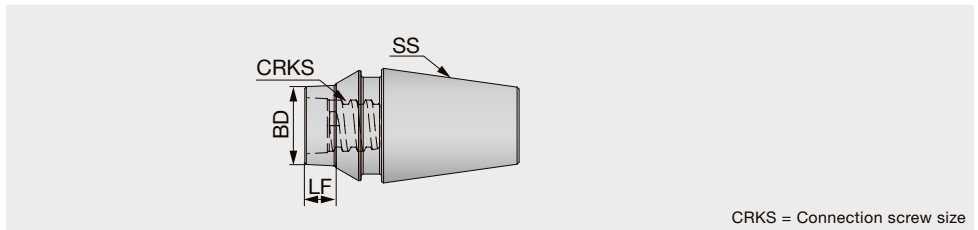
Shaper

Endmill

Drilling Tool

Technical Reference

Straight neck with ER11/16 collet



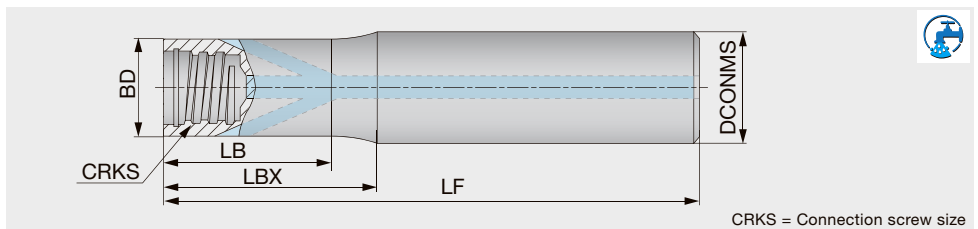
CRKS = Connection screw size

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

- Square
- Chamfering
- Slotting
- Others

VSSD\*\*-W-A...

Straight shank and neck with coolant hole



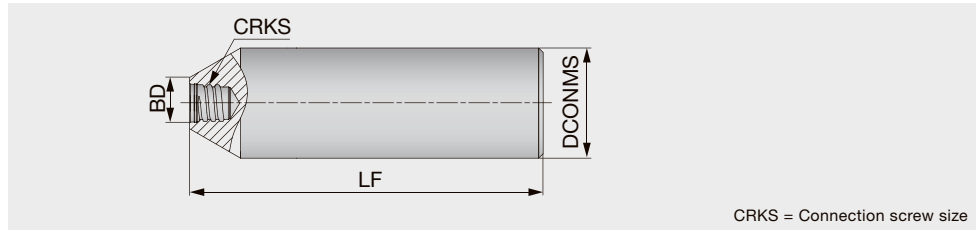
CRKS = Connection screw size

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



## 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

## VSSD...

### Straight neck and cylindrical shank

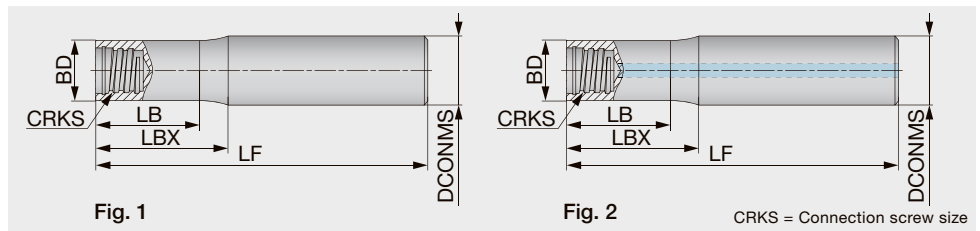


Fig. 1

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

Grade 1

Insert 2

Ext. Toolholder 3

Int. Toolholder 4

Threading 5

Grooving 6

Shaper 7

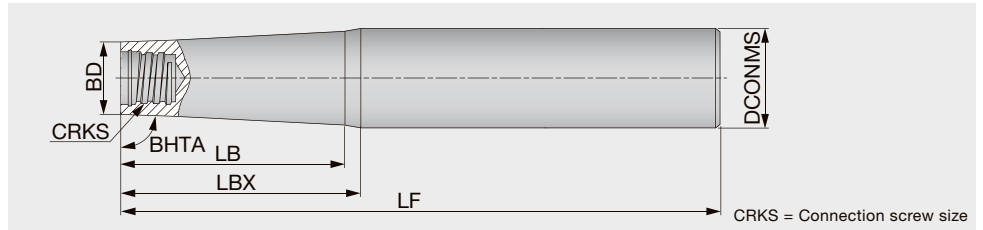
Endmill 8

Drilling Tool 9

Technical Reference 10

## VTSD...

### Taper neck and straight shank



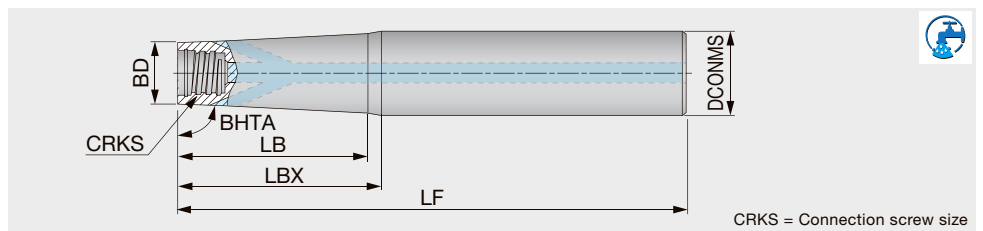
CRKS = Connection screw size

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



## VTSD\*\*-W-A...

### Straight shank and taper neck with coolant hole

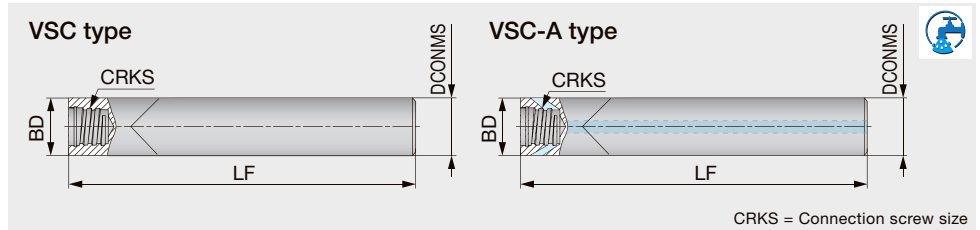


CRKS = Connection screw size

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

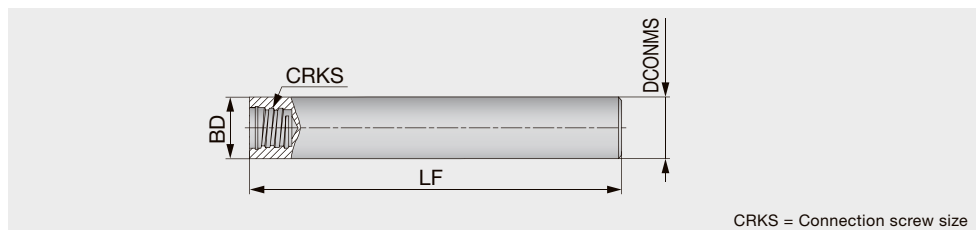
For VSC-C type shank, just VST slotting head is recommended.

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
VSTD031L275S05US	0.312	0.312	2.750	S05	Steel
VSTD037L325S06US	0.375	0.375	3.250	S06	Steel
VSTD050L375S08US	0.500	0.500	3.750	S08	Steel
VSTD062L400S10US	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.

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving




Shaper

Endmill

Drilling Tool

Technical Reference






## WRENCH

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-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.

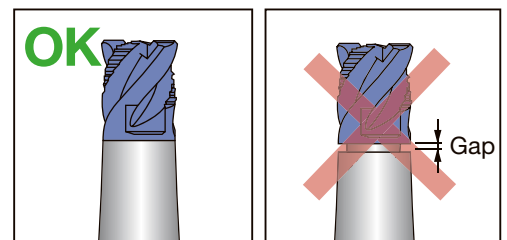


# TORQUE WRENCHES

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,	5.16	7
		TM-WRENCH-8-06	●	S06	VEE-I, VEE-R, VEE-C,	7.38	10
		TM-WRENCH-10-08	●	S08	VEE-A, VFX**-04/06,	11.06	15
		TM-WRENCH-13-10	●	S10	VRD, VBD-BG,	20.65	28
		TM-WRENCH-16-12	●	S12	VBE-BG, VBE-BGA,	20.65	28
Open wrenches for 2 flute heads		TM-WRENCH-4E-05	●	S05	VRB, VRC,	5.16	7
		TM-WRENCH-5E-06	●	S06	VFX**-02,	7.38	10
		TM-WRENCH-7E-08	●	S08	VBB-BM, VBB-BG,	11.06	15
		TM-WRENCH-8E-10	●	S10	VBB-SG, VCP,	20.65	28
		TM-WRENCH-9E-12	●	S12	VGC, VCW, VCR	20.65	28
90° adaptor for Torx bits		INSERT-TOOL-9X12MM	●	-	-	-	-
Torx bits sockets		BIT-SOCKET-T20-DRIVE	●	S05, S06	VFM120, VTB135,	5.16, 7.38	7, 10
		BIT-SOCKET-T25-DRIVE	●	S06	VFM160,	7.38	10
		BIT-SOCKET-T30-DRIVE	●	S08	VTB160W3.00,	11.06	15
		BIT-SOCKET-T40-DRIVE	●	S08, S10	VTB160W4.00,	11.06, 20.65	15, 28
		BIT-SOCKET-T50-DRIVE	●	S08, S10	VTB165W3.00,	11.06, 20.65	15, 28
VTB165W4.00							

## 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.



Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference

# 9. Drilling Tool

---




# Drilling Tool

## Exchangeable head drill



### ADDMEISTER DRILL

Exchangeable head drill series


  $\varnothing 4 \text{ mm} - \varnothing 5.9 \text{ mm}$   
L/D = 3, 5

9-2, 9-4



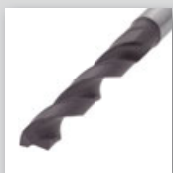
### DRILLMEISTER

Exchangeable head drill series

  $\varnothing 0.394" - \varnothing 0.665"$  ,  $\varnothing 6 \text{ mm} - \varnothing 16.9 \text{ mm}$   
L/D = 1.5, 2, 3, 3.5, 5, 6

9-2, 9-5 -

## Solid drill



### SOLIDDRILL

High performance solid carbide drill

9 - 24 -



### DSM

$\varnothing 0.1 \text{ mm} - \varnothing 3 \text{ mm}$  / L/D = 5, 10, 15

9-24 -



### DSW

  $\varnothing 3 \text{ mm} - \varnothing 12 \text{ mm}$  / L/D = 3, 5


9-26 -

## Indexable drill



### TUNGDRILLTWISTED

Indexable drill with 4-corner inserts for various drilling applications

  $0.500" - 0.787"$  ,  $\varnothing 12.5 \text{ mm} - \varnothing 20 \text{ mm}$   
L/D = 2, 3

9-30

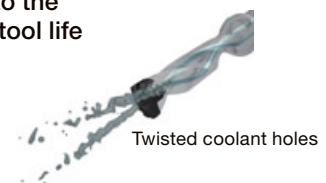
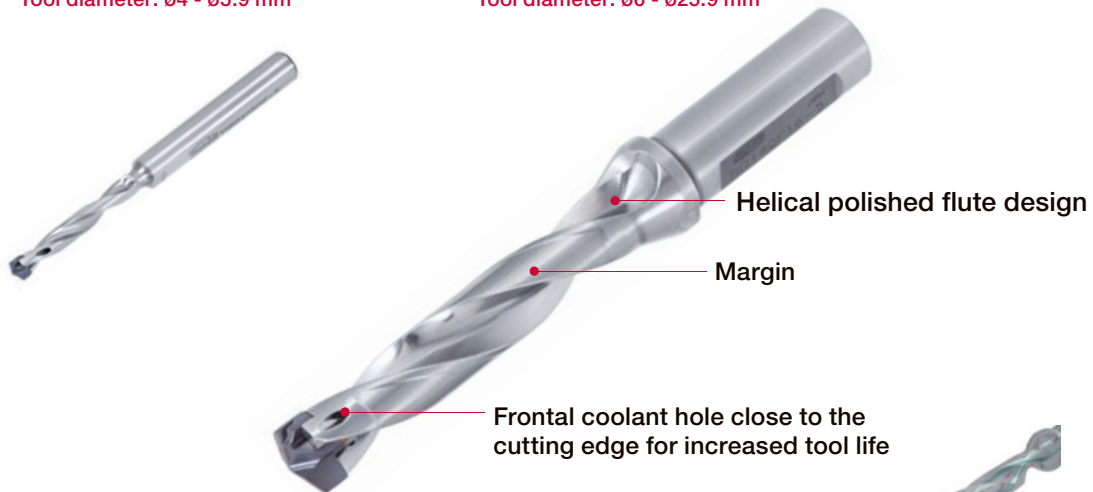


## Exchangeable head drills for unparalleled tool life and machining performance

- 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 ensure stable, long tool life
- Internal coolant channels supply efficient cooling and lubrication during the drilling process

**ADD M<sup>EISTER</sup> DRILL**  
Tool diameter:  $\varnothing 4$  -  $\varnothing 5.9$  mm

**DRILLMEISTER**  
Tool diameter:  $\varnothing 6$  -  $\varnothing 25.9$  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



# 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					Remark	Page
								P	M	N	S	H		
<b>ADDMASTER DRILL</b>	<b>TID</b>		ø4 - ø5.9 mm	2	3 5	Int.	8 - 10	★	★	★	★	★	Exchangeable head drill	9-4
<b>DRILLMEISTER</b>	<b>TID TIDC TIDCF</b>		ø0.394" - ø0.665" - ø6 - ø16.9 mm	2	1.5 2 3 3.5 5 6	Int. / Ext.	8 - 10	★	★	★	★	★	Exchangeable head drill	9-5
<b>SOLIDDRILL</b>	<b>DSM</b>		ø0.1 mm - ø3 mm	2	5 10 15	Ext.	9 - 10	★	★	☆	☆	☆	Solid drill	9-24
	<b>DSW</b>		ø3 mm - ø12 mm	2	3 5	Int. / Ext.	9 - 10	★	★	☆	★	☆	Solid drill	9-26 -
<b>TUNGDRILL TWISTED</b>	<b>TDX</b>		0.500" - 0.787", ø12.5 - ø20 mm	1	2 3	Int.	11 - 13	★	★	☆	★	★	Indexable drill	9-30 -

## Introducing Special Drilling Tools and Their Drawing System

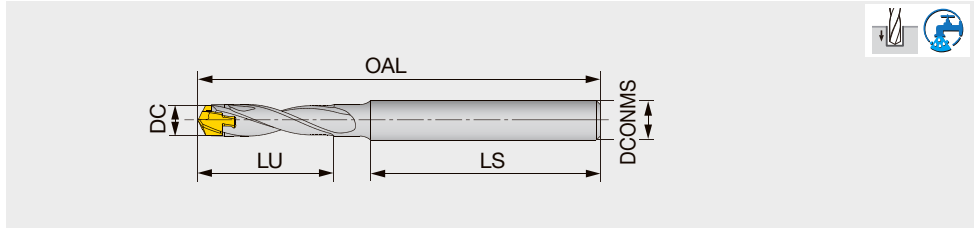
- Introducing an innovative solution for creating drawings of specialized drilling tools, which was previously a time-consuming process.
- Our newly developed service enables effortless creation of simple diagrams anytime, anywhere.
- Explore the "Drawing System for Special Drilling Tools"! By inputting essential tool details, you can swiftly generate straightforward diagrams illustrating special drilling tools with chamfering functions.



Grade  
1  
Insert  
2  
Ext. Toolholder  
3  
Int. Toolholder  
4  
Threading  
5  
Grooving  
6  
Shaper  
7  
Endmill  
8  
Drilling Tool  
9  
Technical Reference  
10

# ADDMASTER TID-R L/D=3

Exchangeable head drill, L/D = 3, Cylindrical shank



Metric	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
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

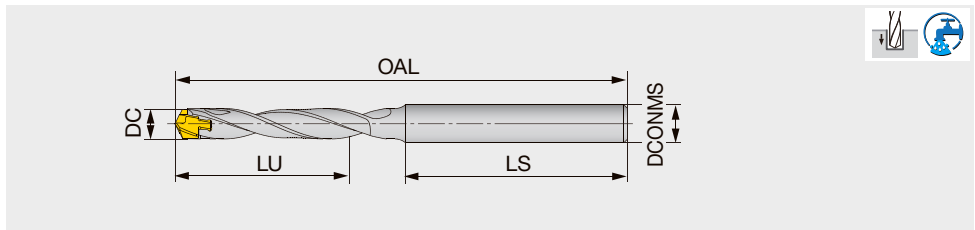
Tool diameter (mm)	Hole diameter tolerance*
ø4 - ø5.9	+0.04 / 0

\*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		Pocket size	Head
					DMP	DMC		
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*
ø4 - ø5.9	+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.
- 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

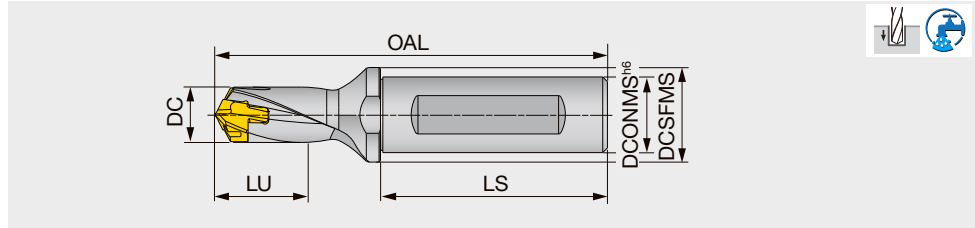
Designation	Clamping key
TID040..., TID045...	K-TID4-4.99
TID050..., TID055...	K-TID5-5.99

Reference pages: Head → [9-16](#) - [9-21](#)  
Standard cutting conditions → [9-22](#)

# DRILLMEISTER

## TIDU-F, TID-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	- An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)
ø0.709" - ø1.020"	+0.0014" / 0	- 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.

\*Just for reference

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

Tool diameter (mm)	Hole diameter tolerance* (mm)	
ø6 - ø17.9	+0.03 / 0	- 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.

\*Just for reference

### SPARE PARTS

Designation	Clamping key
TIDU0394... - TIDU0748...	K-TID10-19.99
TIDU0787... - TIDU0984...	K-TID20-26.99
TID060... - TID090...	K-TID6-9.99
TID100... - TID160...	K-TID10-19.99

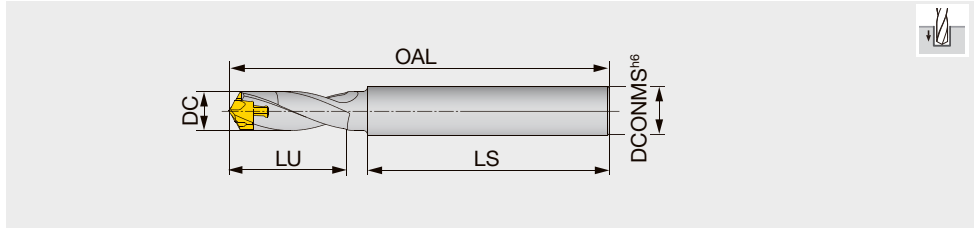
Reference pages: Head → 9-16 - 9-21, Sleeve → 9-23  
Standard cutting conditions → 9-22

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# 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*
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.

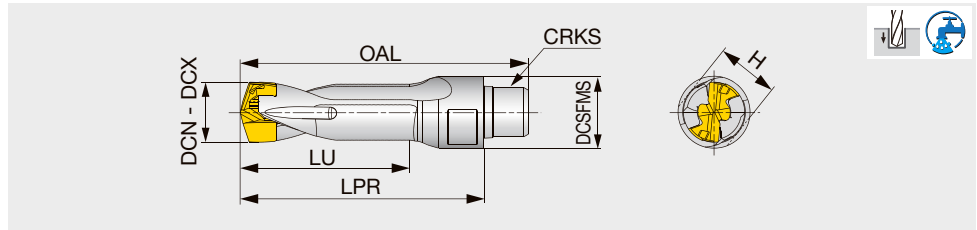
### SPARE PARTS

Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID160...	K-TID10-19.99

Reference pages: Head → **9-16 - 9-21**  
Standard cutting conditions → **9-22**

# TID-S L/D=2

Modular body with "TungMeister" connection



Metric	DC	DCSFMS	LU	LPR	OAL			CRKS	Pocket size	H	Head
TID065S06-2	6.5 - 6.9	10	14.5	27.15	DMP	DMC	DMF	S06	6.5	8	DM*065
TID085S06-2	8.5 - 8.9	10	19.5	33.15	39.45	39.55	38.59	S06	8.5	8	DM*085
TID105S08-2	10.5 - 10.9	12	23.5	40.55	48.05	48.67	46.72	S08	10.5	10	DM*105

Tool diameter (mm)	Hole diameter tolerance*
ø6.5 - ø10.9	+0.04 / 0

\*Just for reference

## SPARE PARTS



Designation	Clamping key
TID065S06-2, TID085S06-2	K-TID6-9.99
TID105S08-2	K-TID10-19.99

Designation	Wrench*	
TID065S06-2, TID085S06-2	KEYV-S06	
TID105S08-2	KEYV-S08	

\*Sold separately

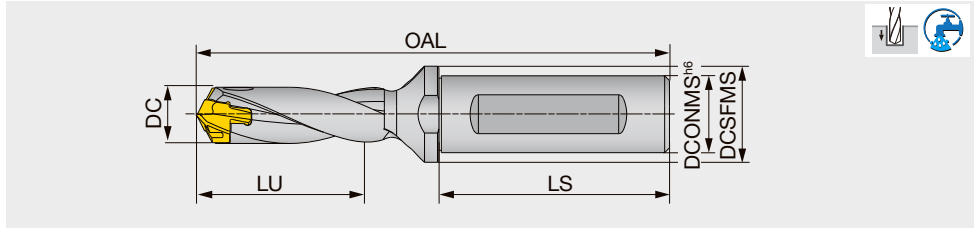
Reference pages: Head → [9-16 - 9-21](#)  
Standard cutting conditions → [9-22](#)

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# DRILLMEISTER

## 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

- 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.

\*Just for reference

### SPARE PARTS

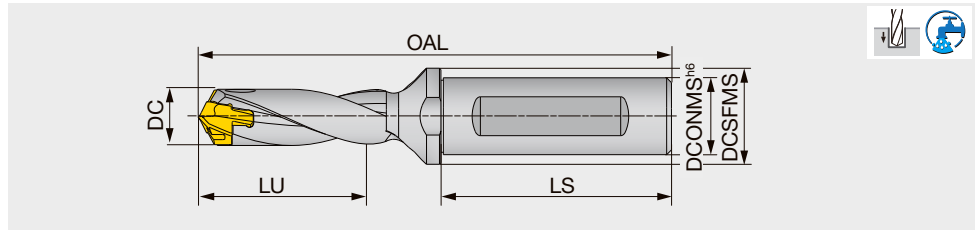


Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

Reference pages: Head → **9-16 - 9-21**, Sleeve → **9-23**  
 Standard cutting conditions → **9-22**

## 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

Tool diameter (mm)	Hole diameter tolerance*
ø6 - ø16.9	+0.04 / 0

- 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.

\*Just for reference

### SPARE PARTS



Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID160...	K-TID10-19.99

Reference pages: Head → **9-16 - 9-21**, Sleeve → **9-23**  
 Standard cutting conditions → **9-22**

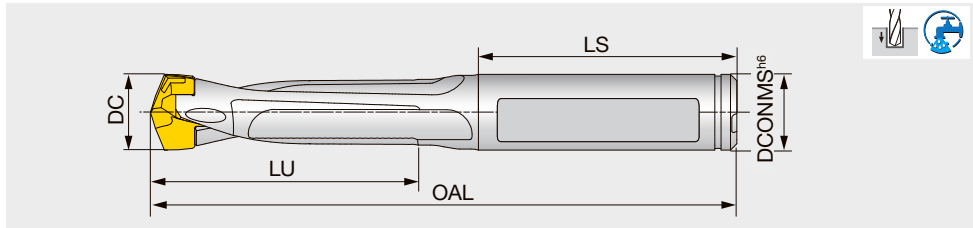
Grade  
Insert  
Ext. Toolholder  
Int. Toolholder  
Threading  
Grooving  
Shaper  
Endmill  
Drilling Tool  
Technical Reference



# DRILLMEISTER

## 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

Tool diameter (mm)	Hole diameter tolerance*
ø7.5 - 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.
- 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



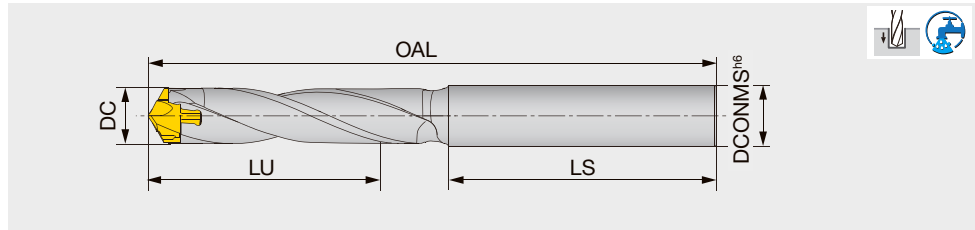
Designation	Clamping key
TIDC075... - TIDC099...	K-TID6-9.99
TIDC100... - TIDC160...	K-TID10-19.99

Reference pages: Head → **9-16 - 9-21**  
Standard cutting conditions → **9-22**



## 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

Tool diameter (mm)	Hole diameter tolerance*
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

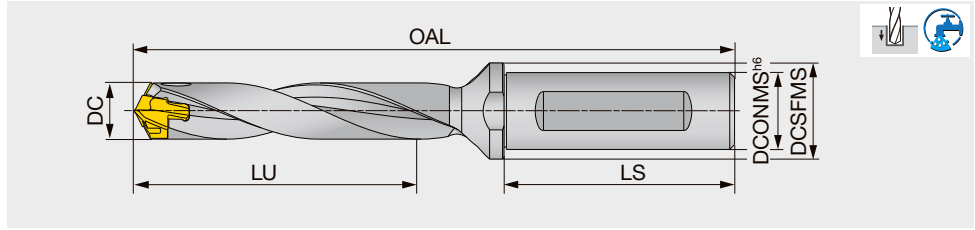
Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID160...	K-TID10-19.99

Reference pages: Head → **9-16 - 9-21**  
Standard cutting conditions → **9-22**

# DRILLMEISTER

## 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

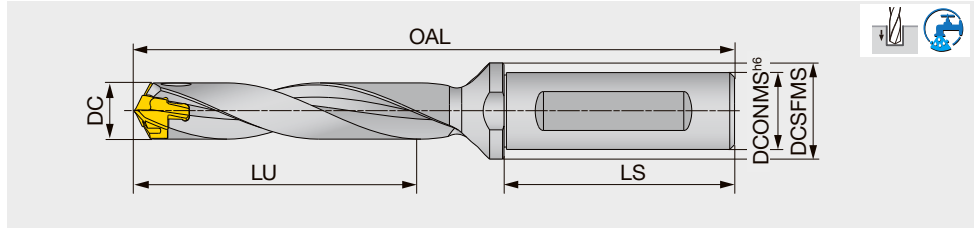


Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

Reference pages: Head → **9-16 - 9-21**, Sleeve → **9-23**  
Standard cutting conditions → **9-22**

# 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

Tool diameter (mm)	Hole diameter tolerance*
ø6 - ø16.9	+0.05 / 0

- 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.

\*Just for reference

## SPARE PARTS



Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID160...	K-TID10-19.99

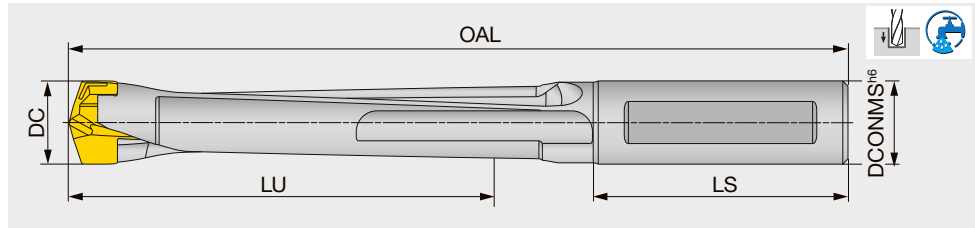
Reference pages: Head → 9-16 - 9-21, Sleeve → 9-23  
 Standard cutting conditions → 9-22

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# DRILLMEISTER

## 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

Tool diameter (mm)	Hole diameter tolerance*
ø7.5 - ø16.9	+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



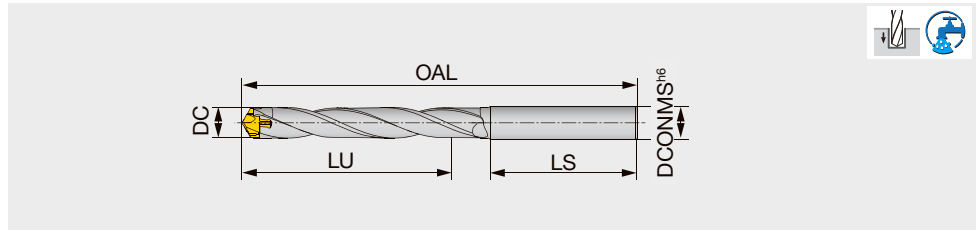
Designation	Clamping key
TIDC075... - TIDC099...	K-TID6-9.99
TIDC100... - TIDC160...	K-TID10-19.99

Reference pages: Head → **9-16 - 9-21**

Standard cutting conditions → **9-22**

## 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

Tool diameter (mm)	Hole diameter tolerance*
ø6 - ø16.9	+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.
- 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

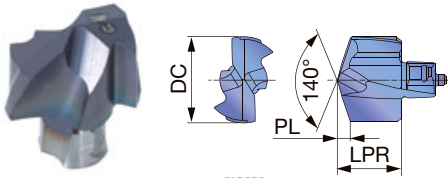
Designation	Clamping key
TID060... - TID095...	K-TID6-9.99
TID100... - TID160...	K-TID10-19.99

Reference pages: Head → **9-16 - 9-21**  
Standard cutting conditions → **9-22**

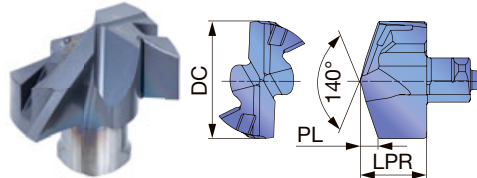
Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# DRILL HEAD

## DMP (General purpose)



**ADDMEISTER DRILL**  
DMP040 - DMP059



**DRILLMEISTER**  
DMP060 - DMP259

Tool diameter (in)	Head diameter tolerance (in)
ø0.157" - ø0.665"	+0.0007" / 0
Tool diameter (mm)	Head diameter tolerance (mm)
ø4 - ø16.9	+0.018 / 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

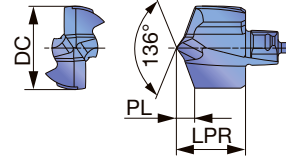
Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	Body
				AH725	AH9130		
DMP040	0.157	4	3.1	●		0.62	TID*040...
DMP041	0.161	4.1	3.1	●		0.64	TID*040...
DMP042	0.165	4.2	3.1	●		0.66	TID*040...
DMP043	0.169	4.3	3.1	●		0.67	TID*040...
DMP044	0.173	4.4	3.1	●		0.69	TID*040...
DMP045	0.177	4.5	3.55	●		0.66	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		PL (mm)	Body
				AH725	AH9130		
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...

ø0.157" - ø0.665" (ø4 mm - ø16.9 mm) = 2 pieces per package

● : Line up

## DMC (High precision hole making)



**ADD M DRILL**  
SISTER  
DMC040 - DMC059

Tool diameter (in)	Head diameter tolerance (in)
ø0.157" - ø0.665"	+0.0007" / 0
Tool diameter (mm)	Head diameter tolerance (mm)
ø4 - ø16.9	+0.018 / 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	★	

Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	Body
				AH725	AH9130		
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...
DMP169	0.665	16.9	9.1	●	●	2.58	TID*160...

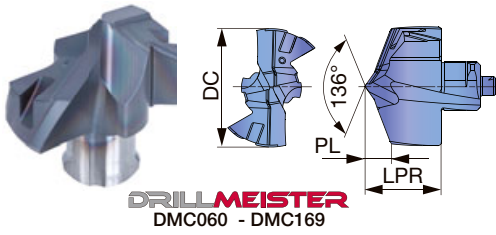
Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	Body
				AH9130			
DMC040	0.157	4	3.51	●		0.86	TID*040...
DMC041	0.161	4.1	3.51	●		0.88	TID*040...
DMC042	0.165	4.2	3.51	●		0.9	TID*040...
DMC043	0.169	4.3	3.51	●		0.92	TID*040...
DMC044	0.173	4.4	3.51	●		0.94	TID*040...
DMC045	0.177	4.5	3.81	●		0.97	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...

ø0.157" - ø0.665" (ø4 mm - ø16.9 mm) = 2 pieces per package ● : Line up



# DRILL HEAD

## DMC (High precision hole making)



Tool diameter (in)	Head diameter tolerance (in)
ø0.157" - ø0.665"	+0.0007" / 0
Tool diameter (mm)	Head diameter tolerance (mm)
ø4 - ø16.9	+0.018 / 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

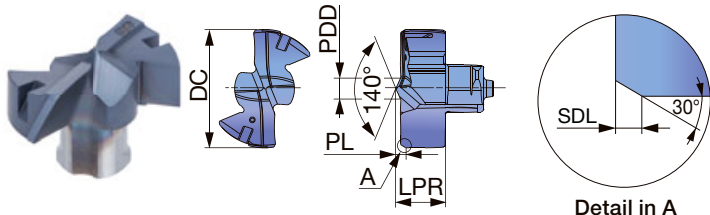
Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	Body
				AH9130			
DMC090	0.354	9	5.8	●		1.91	TID*090...
DMC091	0.358	9.1	5.8	●		1.93	TID*090...
DMC092	0.362	9.2	5.8	●		1.95	TID*090...
DMC093	0.366	9.3	5.8	●		1.97	TID*090...
DMC094	0.370	9.4	5.8	●		1.99	TID*090...
DMC095	0.374	9.5	5.8	●		2.01	TID*095...
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...
DMC138	0.543	13.8	8.15	●		2.87	TID*135...

Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	Body
				AH9130			
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...

ø0.157" - ø0.665" (ø4 mm - ø16.9 mm) = 2 pieces per package ● : Line up



# DMF (Flat geometry head)



<b>Tool diameter (in)</b> ø0.236" - ø0.665"	<b>Head diameter tolerance (in)</b> +0.0007" / 0
<b>Tool diameter (mm)</b> ø6 - ø16.9	<b>Head diameter tolerance (mm)</b> +0.018 / 0

<b>P</b> Steel	★		
<b>M</b> Stainless	★		
<b>K</b> Cast iron	★		
<b>N</b> Non-ferrous	☆		
<b>S</b> Superalloys	★		
<b>H</b> Hard materials	★		

<b>P</b> Steel	★		
<b>M</b> Stainless	★		
<b>K</b> Cast iron	★		
<b>N</b> Non-ferrous	☆		
<b>S</b> Superalloys	★		
<b>H</b> Hard materials	★		

★ : First choice  
☆ : Second choice

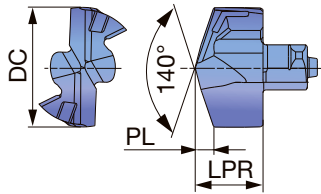
Designation	DC (in)	DC (mm)	LPR (mm)	Coated		SDL (mm)	PL (mm)	PDD (mm)	Body
				AH9130					
DMF060	0.236	6	3.01	●		0.4	0.61	1.15	TID*060...
DMF061	0.240	6.1	3.01	●		0.4	0.61	1.15	TID*060...
DMF062	0.244	6.2	3.01	●		0.4	0.61	1.15	TID*060...
DMF063	0.248	6.3	3.01	●		0.4	0.61	1.15	TID*060...
DMF064	0.252	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		SDL (mm)	PL (mm)	PDD (mm)	Body
				AH9130					
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...

ø0.157" - ø0.665" (ø4 mm - ø16.9 mm) = 2 pieces per package ● : Line up

# DRILL HEAD

## DMH (High strength cutting edge)



P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials	★		

Tool diameter (in)	Head diameter tolerance (in)
ø0.236" - ø0.657"	+0.0007" / -0.0002"
Tool diameter (mm)	Head diameter tolerance (mm)
ø6 - ø16.7	+0.018 / -0.005

P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials	★		

★ : First choice

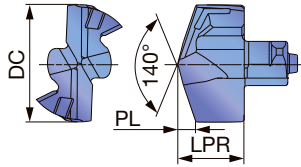
Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	Body
				AH9130			
DMH060	0.236	6	3.85	●		1.09	TID*060...
DMH068	0.268	6.8	4.15	●		1.33	TID*065...
DMH070	0.276	7	4.45	●		1.03	TID*070...
DMH075	0.295	7.5	4.45	●		1.12	TID*075...
DMH080	0.315	8	5.25	●		1.2	TID*080...
DMH085	0.335	8.5	5.25	●		1.29	TID*085...
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		PL (mm)	Body
				AH9130			
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...

0.236" - 0.657"(ø6 mm - ø16.7 mm) = 2 pieces per package

● : Line up

## DMN Non-ferrous metals drilling



Tool diameter (in)	Head diameter tolerance (in)
ø0.394" - ø0.650"	+0.0004" / 0
Tool diameter (mm)	Head diameter tolerance (mm)
ø6.8 - ø16.5	+0.01 / 0

<b>P</b>	Steel			
<b>M</b>	Stainless			
<b>K</b>	Cast iron			
<b>N</b>	Non-ferrous	★		
<b>S</b>	Superalloys			
<b>H</b>	Hard materials			

★ : First choice  
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	Body
				KS15F			
DMN068	0.268	6.8	4.15	●		1.33	TID*065...
DMN078	0.307	7.8	4.45	●		1.18	TID*075...
DMN080	0.315	8	5.25	●		1.2	TID*080...
DMN085	0.335	8.5	5.25	●		1.29	TID*085...
DMN088	0.346	8.8	5.25	●		1.35	TID*085...
DMN095	0.374	9.5	5.65	●		1.46	TID*095...
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...

ø0.268" - ø0.650" ( ø6.8 mm - ø16.5 mm) = 2 pieces per package ● : Line up

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

## STANDARD CUTTING CONDITIONS

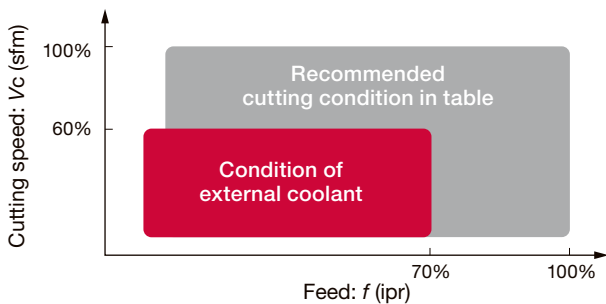
ISO	Workpiece material	Hardness	Cutting speed Vc (sfm)	Feed: f (ipr)									
				Tool diameter: DC (in)									
				ø0.157" - ø0.173"	ø0.177" - ø0.193"	ø0.197" - ø0.232"	ø0.236" - ø0.311"	ø0.315" - ø0.390"	ø0.394" - ø0.469"	ø0.472" - ø0.547"	ø0.551" - ø0.626"	ø0.630" - ø0.783"	ø0.787" - ø1.020"
<b>P</b>	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	0.010 - 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
<b>M</b>	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
<b>K</b>	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
<b>N</b>	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
<b>S</b>	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
<b>H</b>	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



## CRITERIA FOR THE END OF DRILL-BODY LIFE

For your safety, it is recommended to replace drill bodies that reached the fatigue life with new drill bodies. For measuring un-clamping torque, the exclusive Clamping key (sold separately) should be used. To determine the fatigue life, Measure the torque value required to unlock the drill head with a torque driver. When the torque value required is equal to or smaller than the values listed below for respective head sizes, replace the drill body with a new one.

Clamping key for measuring un-clamping torque:

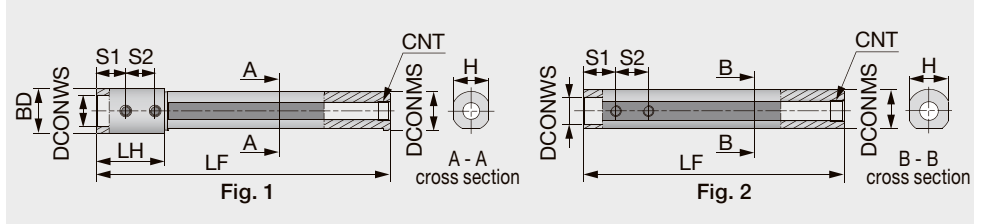
**KHS-TID10-19.99**



\* 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



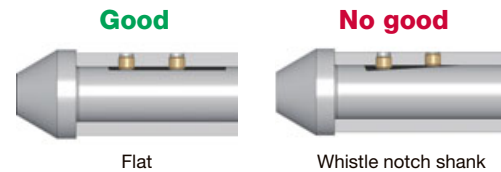
Metric	DCONMS	DCONWS	LF	LH	BD	H	S1	S2	CNT	Body	Fig.
BLM16-12LF	16	12	85	35	20	15.5	15	15	Rc1/8	TID***F12...	1
BLM19-12LF	19.05	12	140	35	23	18.5	15	15	Rc1/8	TID***F12...	1
BLM19-12SF	19.05	12	90	35	23	18.5	15	15	Rc1/8	TID***F12...	1
BLM19-16LF	19.05	16	140	35	23	18.5	15	15	Rc1/8	TID***F16...	1
BLM19-16SF	19.05	16	90	35	23	18.5	15	15	Rc1/8	TID***F16...	1
BLM20-12LR	20	12	120	-	-	19	15	15	Rc1/8	TID***F12...	2
BLM20-16LF	20	16	150	35	23	19	15	15	Rc1/8	TID***F16...	1
BLM22-12LR	22	12	120	-	-	21.5	15	15	Rc1/8	TID***F12...	2
BLM22-16LF	22	16	140	35	25	21.5	15	15	Rc1/8	TID***F16...	1
BLM25-12LR	25	12	115	-	-	24	15	15	Rc1/8	TID***F12...	2
BLM25-16LR	25	16	115	-	-	24	15	15	Rc1/8	TID***F16...	2
BLM25-20LF	25	20	150	35	28	24	15	15	Rc1/8	TID***F20...	1
BLM254-12LR	25.4	12	115	-	-	24.7	15	15	Rc1/8	TID***F12...	2
BLM254-12SR	25.4	12	75	-	-	24.7	15	15	Rc1/8	TID***F12...	2
BLM254-16LR	25.4	16	115	-	-	24.7	15	15	Rc1/8	TID***F16...	2
BLM254-16SR	25.4	16	75	-	-	24.7	15	15	Rc1/8	TID***F16...	2
BLM254-20LF	25.4	20	140	35	28	24.7	15	15	Rc1/8	TID***F20...	1
BLM32-12LR	32	12	120	-	-	31.5	15	15	Rc1/8	TID***F12...	2
BLM32-16LR	32	16	120	-	-	31.5	15	15	Rc1/8	TID***F16...	2
BLM32-20LR	32	20	120	-	-	31.5	15	15	Rc1/8	TID***F20...	2

### SPARE PARTS

Designation	Clamping screw	Wrench
BLM16/19/20/22...	SR M5x4 FLAT	P-2.5
BLM25-12LR	SR M5x6 FLAT	P-2.5
BLM25-16LR, BLM25-20LF	SR M5x4 FLAT	P-2.5
BLM254-12LR, BLM254-12SR	SR M5x6 FLAT	P-2.5
BLM254-16LR, BLM254-16SR, BLM254-20LF	SR M5x4 FLAT	P-2.5
BLM32-12LR, BLM32-16LR	SR M5x6 FLAT	P-2.5
BLM32-20LR	SR M5x4 FLAT	P-2.5

### Note for sleeve usage

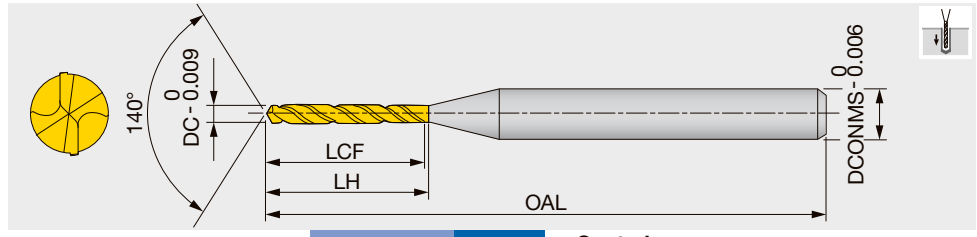
- Please refer to the separate Tungaloy report and product catalog for cutting conditions
- Please refrain from using whistle notch and weldon type shanks from the viewpoint of clamping stability



# SOLIDDRILL

## DSM

Micro solid drill, L/D = 5 - 15, without coolant hole



Metric	DC	Coated		DCONMS	LCF	LH	OAL	Metric	DC	Coated		DCONMS	LCF	LH	OAL
		YH170	YH180							YH170	YH180				
DSM0010G10	0.1	●		3	1.15	1.4	38	DSM0100G10	1	●		3	11.5	12.1	38
DSM0011G10	0.11	●		3	1.25	1.5	38	DSM0108G05	1.08	●		3	8	8.6	38
DSM0012G10	0.12	●		3	1.35	1.6	38	DSM0110G05	1.1	●		3	8	8.6	38
DSM0013G10	0.13	●		3	1.55	1.8	38	DSM0120G05	1.2	●		3	8.9	9.5	38
DSM0014G10	0.14	●		3	1.65	1.9	38	DSM0130G05	1.3	●		3	9.7	10.3	38
DSM0015G10	0.15	●		3	1.75	2	38	DSM0140G05	1.4	●		3	10.5	11.1	38
DSM0016G10	0.16	●		3	1.85	2.1	38	DSM0145G05	1.45	●		3	11.3	11.9	38
DSM0017G10	0.17	●		3	1.95	2.2	38	DSM0149G05	1.49	●		3	11.3	11.9	38
DSM0018G10	0.18	●		3	2.15	2.4	38	DSM0150G05	1.5	●		3	11.3	11.9	38
DSM0019G10	0.19	●		3	2.25	2.5	38	DSM0153G05	1.53	●		3	12.1	12.7	45
DSM0020G10	0.2	●		3	2.35	2.6	38	DSM0155G05	1.55	●		3	12.1	12.7	45
DSM0021G10	0.21	●		3	2.45	2.7	38	DSM0160G05	1.6	●		3	12.1	12.7	45
DSM0022G10	0.22	●		3	2.55	2.8	38	DSM0165G05	1.65	●		3	12.9	13.6	45
DSM0023G10	0.23	●		3	2.75	3	38	DSM0170G05	1.7	●		3	12.9	13.6	45
DSM0024G10	0.24	●		3	2.85	3.1	38	DSM0180G05	1.8	●		3	13.7	14.3	45
DSM0025G10	0.25	●		3	3	3.3	38	DSM0182G05	1.82	●		3	14.5	15.1	45
DSM0026G10	0.26	●		3	3.1	3.4	38	DSM0185G05	1.85	●		3	14.5	15.1	45
DSM0027G10	0.27	●		3	3.2	3.5	38	DSM0190G05	1.9	●		3	14.5	15.1	45
DSM0028G10	0.28	●		3	3.4	3.7	38	DSM0195G05	1.95	●		3	15.3	15.9	45
DSM0029G10	0.29	●		3	3.5	3.8	38	DSM0200G05	2	●		3	15.3	15.9	45
DSM0030G10	0.3	●		3	3.9	4.2	38	DSM0203G05	2.03	●		3	16.1	16.7	45
DSM0031G15	0.31	●		3	5.6	5.9	38	DSM0205G05	2.05	●		3	16.1	16.7	45
DSM0032G15	0.32	●		3	5.6	5.9	38	DSM0210G05	2.1	●		3	16.1	16.7	45
DSM0033G15	0.33	●		3	5.6	5.9	38	DSM0220G05	2.2	●		3	16.9	17.5	45
DSM0034G15	0.34	●		3	5.6	5.9	38	DSM0230G05	2.3	●		3	17.7	18.3	45
DSM0035G15	0.35	●		3	5.6	5.9	38	DSM0240G05	2.4	●		3	18.5	19.1	55
DSM0036G15	0.36	●		3	6.5	6.8	38	DSM0250G05	2.5	●		3	19.3	19.9	55
DSM0037G15	0.37	●		3	6.5	6.8	38	DSM0254G05	2.54	●		3	20.1	20.7	55
DSM0038G15	0.38	●		3	6.5	6.8	38	DSM0255G05	2.55	●		3	20.1	20.7	55
DSM0039G15	0.39	●		3	6.5	6.8	38	DSM0256G05	2.56	●		3	20.1	20.7	55
DSM0040G15	0.4	●		3	6.5	6.8	38	DSM0257G05	2.57	●		3	20.1	20.7	55
DSM0041G15	0.41	●		3	7.4	7.7	38	DSM0260G05	2.6	●		3	20.1	20.7	55
DSM0042G15	0.42	●		3	7.4	7.7	38	DSM0265G05	2.65	●		3	20.9	21.5	55
DSM0043G15	0.43	●		3	7.4	7.7	38	DSM0270G05	2.7	●		3	20.9	21.5	55
DSM0044G15	0.44	●		3	7.4	7.7	38	DSM0280G05	2.8	●		3	21.7	22.3	55
DSM0045G15	0.45	●		3	7.4	7.7	38	DSM0290G05	2.9	●		3	22.5	23.1	55
DSM0046G15	0.46	●		3	8.1	8.7	38	DSM0295G05	2.95	●		3	23.3	23.9	55
DSM0047G15	0.47	●		3	8.1	8.7	38	DSM0296G05	2.96	●		3	23.3	23.9	55
DSM0048G15	0.48	●		3	8.1	8.7	38	DSM0300G05	3	●		3	23.3	23.9	55
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								

● : Line up

## STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed: Vc (sfm)			Feed: f (ipr)				
			ø0.004" ~ ø0.012"	ø0.012" ~ ø0.020"	ø0.020" ~ ø0.118"	ø0.004" ~ ø0.012"	ø0.012" ~ ø0.020"	ø0.020" ~ ø0.039"	ø0.039" ~ ø0.079"	ø0.079" ~ ø0.118"
<b>P</b>	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
<b>M</b>	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
<b>K</b>	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
<b>N</b>	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
<b>S</b>	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	※
<b>H</b>	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

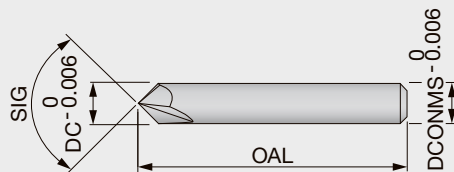
※ Not recommended

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

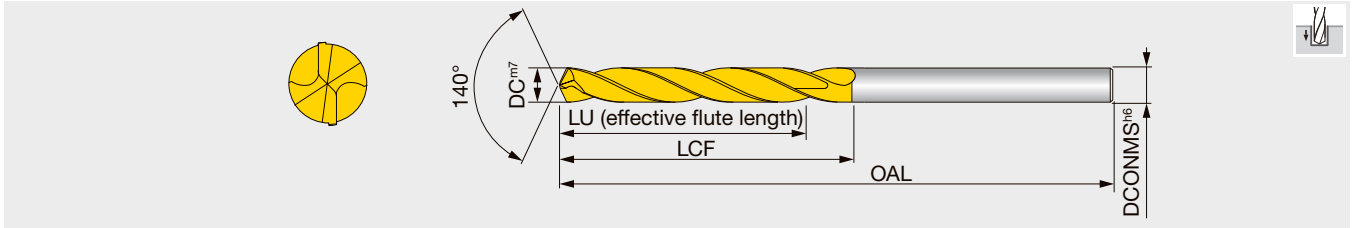
ISO	Workpiece material	Hardness	Cutting speed: Vc (sfm)	Feed: f (ipr)	
				DSM-CP90	DSM-CP140
<b>P</b>	Carbon, Mild and Alloy steels	- 300 HB	98 - 262	0.0004 - 0.0024	0.0012 - 0.0031
<b>M</b>	Stainless steels	- 200 HB	49 - 131	0.0004 - 0.0012	0.0008 - 0.0024
<b>K</b>	Grey and ductile cast irons	150 - 250 HB	98 - 262	0.0008 - 0.0024	0.0020 - 0.0039
<b>N</b>	Aluminium alloys	-	197 - 394	0.0008 - 0.0039	0.0020 - 0.0059
<b>H</b>	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.





Metric	DC	AH725	DCONMS	LU	LCF	OAL	Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-014-06DE3	3	●	6	14	20	62	DSW076-029-08DE3	7.6	●	8	29	41	79
DSW031-014-06DE3	3.1	●	6	14	20	62	DSW077-029-08DE3	7.7	●	8	29	41	79
DSW032-014-06DE3	3.2	●	6	14	20	62	DSW078-029-08DE3	7.8	●	8	29	41	79
DSW033-014-06DE3	3.3	●	6	14	20	62	DSW079-029-08DE3	7.9	●	8	29	41	79
DSW034-014-06DE3	3.4	●	6	14	20	62	DSW080-029-08DE3	8	●	8	29	41	79
DSW035-014-06DE3	3.5	●	6	14	20	62	DSW081-035-10DE3	8.1	●	10	35	47	89
DSW036-014-06DE3	3.6	●	6	14	20	62	DSW082-035-10DE3	8.2	●	10	35	47	89
DSW037-014-06DE3	3.7	●	6	14	20	62	DSW083-035-10DE3	8.3	●	10	35	47	89
DSW038-017-06DE3	3.8	●	6	17	24	66	DSW084-035-10DE3	8.4	●	10	35	47	89
DSW039-017-06DE3	3.9	●	6	17	24	66	DSW085-035-10DE3	8.5	●	10	35	47	89
DSW040-017-06DE3	4	●	6	17	24	66	DSW086-035-10DE3	8.6	●	10	35	47	89
DSW041-017-06DE3	4.1	●	6	17	24	66	DSW087-035-10DE3	8.7	●	10	35	47	89
DSW042-017-06DE3	4.2	●	6	17	24	66	DSW088-035-10DE3	8.8	●	10	35	47	89
DSW043-017-06DE3	4.3	●	6	17	24	66	DSW089-035-10DE3	8.9	●	10	35	47	89
DSW044-017-06DE3	4.4	●	6	17	24	66	DSW090-035-10DE3	9	●	10	35	47	89
DSW045-017-06DE3	4.5	●	6	17	24	66	DSW091-035-10DE3	9.1	●	10	35	47	89
DSW046-017-06DE3	4.6	●	6	17	24	66	DSW092-035-10DE3	9.2	●	10	35	47	89
DSW047-017-06DE3	4.7	●	6	17	24	66	DSW093-035-10DE3	9.3	●	10	35	47	89
DSW048-020-06DE3	4.8	●	6	20	28	66	DSW094-035-10DE3	9.4	●	10	35	47	89
DSW049-020-06DE3	4.9	●	6	20	28	66	DSW095-035-10DE3	9.5	●	10	35	47	89
DSW050-020-06DE3	5	●	6	20	28	66	DSW096-035-10DE3	9.6	●	10	35	47	89
DSW051-020-06DE3	5.1	●	6	20	28	66	DSW097-035-10DE3	9.7	●	10	35	47	89
DSW052-020-06DE3	5.2	●	6	20	28	66	DSW098-035-10DE3	9.8	●	10	35	47	89
DSW053-020-06DE3	5.3	●	6	20	28	66	DSW099-035-10DE3	9.9	●	10	35	47	89
DSW054-020-06DE3	5.4	●	6	20	28	66	DSW100-035-10DE3	10	●	10	35	47	89
DSW055-020-06DE3	5.5	●	6	20	28	66	DSW101-040-12DE3	10.1	●	12	40	55	102
DSW056-020-06DE3	5.6	●	6	20	28	66	DSW102-040-12DE3	10.2	●	12	40	55	102
DSW057-020-06DE3	5.7	●	6	20	28	66	DSW103-040-12DE3	10.3	●	12	40	55	102
DSW058-020-06DE3	5.8	●	6	20	28	66	DSW104-040-12DE3	10.4	●	12	40	55	102
DSW059-020-06DE3	5.9	●	6	20	28	66	DSW105-040-12DE3	10.5	●	12	40	55	102
DSW060-020-06DE3	6	●	6	20	28	66	DSW106-040-12DE3	10.6	●	12	40	55	102
DSW061-024-08DE3	6.1	●	8	24	34	79	DSW107-040-12DE3	10.7	●	12	40	55	102
DSW062-024-08DE3	6.2	●	8	24	34	79	DSW108-040-12DE3	10.8	●	12	40	55	102
DSW063-024-08DE3	6.3	●	8	24	34	79	DSW109-040-12DE3	10.9	●	12	40	55	102
DSW064-024-08DE3	6.4	●	8	24	34	79	DSW110-040-12DE3	11	●	12	40	55	102
DSW065-024-08DE3	6.5	●	8	24	34	79	DSW111-040-12DE3	11.1	●	12	40	55	102
DSW066-024-08DE3	6.6	●	8	24	34	79	DSW112-040-12DE3	11.2	●	12	40	55	102
DSW067-024-08DE3	6.7	●	8	24	34	79	DSW113-040-12DE3	11.3	●	12	40	55	102
DSW068-024-08DE3	6.8	●	8	24	34	79	DSW114-040-12DE3	11.4	●	12	40	55	102
DSW069-024-08DE3	6.9	●	8	24	34	79	DSW115-040-12DE3	11.5	●	12	40	55	102
DSW070-024-08DE3	7	●	8	24	34	79	DSW116-040-12DE3	11.6	●	12	40	55	102
DSW071-029-08DE3	7.1	●	8	29	41	79	DSW117-040-12DE3	11.7	●	12	40	55	102
DSW072-029-08DE3	7.2	●	8	29	41	79	DSW118-040-12DE3	11.8	●	12	40	55	102
DSW073-029-08DE3	7.3	●	8	29	41	79	DSW119-040-12DE3	11.9	●	12	40	55	102
DSW074-029-08DE3	7.4	●	8	29	41	79	DSW120-040-12DE3	12	●	12	40	55	102
DSW075-029-08DE3	7.5	●	8	29	41	79							

● : Line up

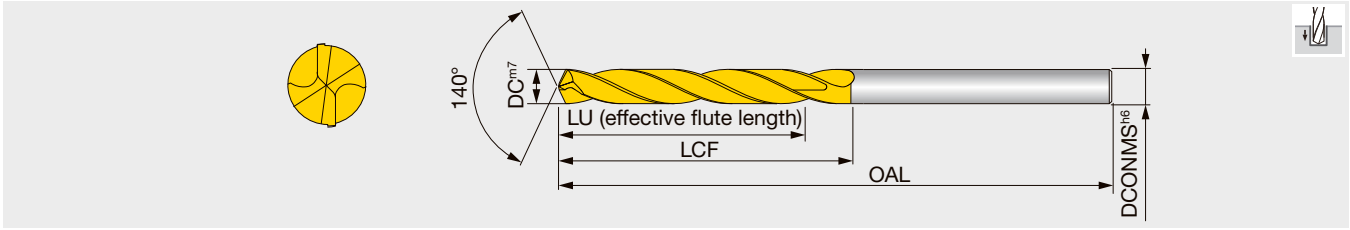
## STANDARD CUTTING CONDITIONS

See more information

e-catalog







Metric	DC	AH725	DCONMS	LU	LCF	OAL	Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-023-06DE5	3	●	6	23	28	66	DSW076-043-08DE5	7.6	●	8	43	53	91
DSW031-023-06DE5	3.1	●	6	23	28	66	DSW077-043-08DE5	7.7	●	8	43	53	91
DSW032-023-06DE5	3.2	●	6	23	28	66	DSW078-043-08DE5	7.8	●	8	43	53	91
DSW033-023-06DE5	3.3	●	6	23	28	66	DSW079-043-08DE5	7.9	●	8	43	53	91
DSW034-023-06DE5	3.4	●	6	23	28	66	DSW080-043-08DE5	8	●	8	43	53	91
DSW035-023-06DE5	3.5	●	6	23	28	66	DSW081-049-10DE5	8.1	●	10	49	61	103
DSW036-023-06DE5	3.6	●	6	23	28	66	DSW082-049-10DE5	8.2	●	10	49	61	103
DSW037-023-06DE5	3.7	●	6	23	28	66	DSW083-049-10DE5	8.3	●	10	49	61	103
DSW038-029-06DE5	3.8	●	6	29	36	74	DSW084-049-10DE5	8.4	●	10	49	61	103
DSW039-029-06DE5	3.9	●	6	29	36	74	DSW085-049-10DE5	8.5	●	10	49	61	103
DSW040-029-06DE5	4	●	6	29	36	74	DSW086-049-10DE5	8.6	●	10	49	61	103
DSW041-029-06DE5	4.1	●	6	29	36	74	DSW087-049-10DE5	8.7	●	10	49	61	103
DSW042-029-06DE5	4.2	●	6	29	36	74	DSW088-049-10DE5	8.8	●	10	49	61	103
DSW043-029-06DE5	4.3	●	6	29	36	74	DSW089-049-10DE5	8.9	●	10	49	61	103
DSW044-029-06DE5	4.4	●	6	29	36	74	DSW090-049-10DE5	9	●	10	49	61	103
DSW045-029-06DE5	4.5	●	6	29	36	74	DSW091-049-10DE5	9.1	●	10	49	61	103
DSW046-029-06DE5	4.6	●	6	29	36	74	DSW092-049-10DE5	9.2	●	10	49	61	103
DSW047-029-06DE5	4.7	●	6	29	36	74	DSW093-049-10DE5	9.3	●	10	49	61	103
DSW048-035-06DE5	4.8	●	6	35	44	82	DSW094-049-10DE5	9.4	●	10	49	61	103
DSW049-035-06DE5	4.9	●	6	35	44	82	DSW095-049-10DE5	9.5	●	10	49	61	103
DSW050-035-06DE5	5	●	6	35	44	82	DSW096-049-10DE5	9.6	●	10	49	61	103
DSW051-035-06DE5	5.1	●	6	35	44	82	DSW097-049-10DE5	9.7	●	10	49	61	103
DSW052-035-06DE5	5.2	●	6	35	44	82	DSW098-049-10DE5	9.8	●	10	49	61	103
DSW053-035-06DE5	5.3	●	6	35	44	82	DSW099-049-10DE5	9.9	●	10	49	61	103
DSW054-035-06DE5	5.4	●	6	35	44	82	DSW100-049-10DE5	10	●	10	49	61	103
DSW055-035-06DE5	5.5	●	6	35	44	82	DSW101-056-12DE5	10.1	●	12	56	71	118
DSW056-035-06DE5	5.6	●	6	35	44	82	DSW102-056-12DE5	10.2	●	12	56	71	118
DSW057-035-06DE5	5.7	●	6	35	44	82	DSW103-056-12DE5	10.3	●	12	56	71	118
DSW058-035-06DE5	5.8	●	6	35	44	82	DSW104-056-12DE5	10.4	●	12	56	71	118
DSW059-035-06DE5	5.9	●	6	35	44	82	DSW105-056-12DE5	10.5	●	12	56	71	118
DSW060-035-06DE5	6	●	6	35	44	82	DSW106-056-12DE5	10.6	●	12	56	71	118
DSW061-043-08DE5	6.1	●	8	43	53	91	DSW107-056-12DE5	10.7	●	12	56	71	118
DSW062-043-08DE5	6.2	●	8	43	53	91	DSW108-056-12DE5	10.8	●	12	56	71	118
DSW063-043-08DE5	6.3	●	8	43	53	91	DSW109-056-12DE5	10.9	●	12	56	71	118
DSW064-043-08DE5	6.4	●	8	43	53	91	DSW110-056-12DE5	11	●	12	56	71	118
DSW065-043-08DE5	6.5	●	8	43	53	91	DSW111-056-12DE5	11.1	●	12	56	71	118
DSW066-043-08DE5	6.6	●	8	43	53	91	DSW112-056-12DE5	11.2	●	12	56	71	118
DSW067-043-08DE5	6.7	●	8	43	53	91	DSW113-056-12DE5	11.3	●	12	56	71	118
DSW068-043-08DE5	6.8	●	8	43	53	91	DSW114-056-12DE5	11.4	●	12	56	71	118
DSW069-043-08DE5	6.9	●	8	43	53	91	DSW115-056-12DE5	11.5	●	12	56	71	118
DSW070-043-08DE5	7	●	8	43	53	91	DSW116-056-12DE5	11.6	●	12	56	71	118
DSW071-043-08DE5	7.1	●	8	43	53	91	DSW117-056-12DE5	11.7	●	12	56	71	118
DSW072-043-08DE5	7.2	●	8	43	53	91	DSW118-056-12DE5	11.8	●	12	56	71	118
DSW073-043-08DE5	7.3	●	8	43	53	91	DSW119-056-12DE5	11.9	●	12	56	71	118
DSW074-043-08DE5	7.4	●	8	43	53	91	DSW120-056-12DE5	12	●	12	56	71	118
DSW075-043-08DE5	7.5	●	8	43	53	91							

● : Line up

### STANDARD CUTTING CONDITIONS

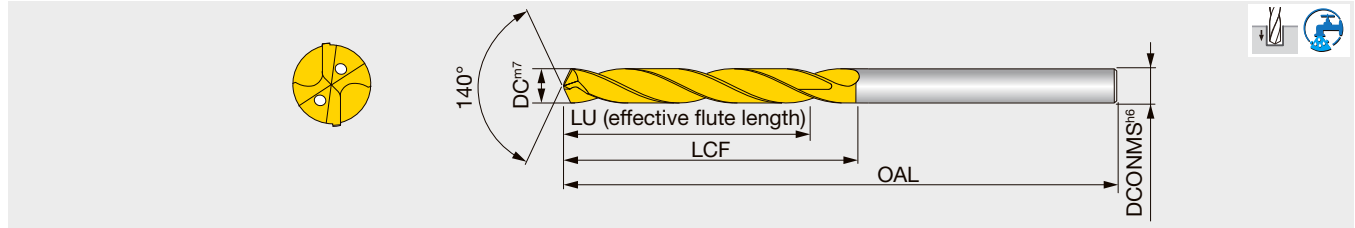
See more information

e-catalog



## DSW-DI5

Solid drill, L/D = 5, DIN shank, with coolant hole



Metric	DC	AH725	DCONMS	LU	LCF	OAL	Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-023-06DI5	3	●	6	23	28	66	DSW076-043-08DI5	7.6	●	8	43	53	91
DSW031-023-06DI5	3.1	●	6	23	28	66	DSW077-043-08DI5	7.7	●	8	43	53	91
DSW032-023-06DI5	3.2	●	6	23	28	66	DSW078-043-08DI5	7.8	●	8	43	53	91
DSW033-023-06DI5	3.3	●	6	23	28	66	DSW079-043-08DI5	7.9	●	8	43	53	91
DSW034-023-06DI5	3.4	●	6	23	28	66	DSW080-043-08DI5	8	●	8	43	53	91
DSW035-023-06DI5	3.5	●	6	23	28	66	DSW081-049-10DI5	8.1	●	10	49	61	103
DSW036-023-06DI5	3.6	●	6	23	28	66	DSW082-049-10DI5	8.2	●	10	49	61	103
DSW037-023-06DI5	3.7	●	6	23	28	66	DSW083-049-10DI5	8.3	●	10	49	61	103
DSW038-029-06DI5	3.8	●	6	29	36	74	DSW084-049-10DI5	8.4	●	10	49	61	103
DSW039-029-06DI5	3.9	●	6	29	36	74	DSW085-049-10DI5	8.5	●	10	49	61	103
DSW040-029-06DI5	4	●	6	29	36	74	DSW086-049-10DI5	8.6	●	10	49	61	103
DSW041-029-06DI5	4.1	●	6	29	36	74	DSW087-049-10DI5	8.7	●	10	49	61	103
DSW042-029-06DI5	4.2	●	6	29	36	74	DSW088-049-10DI5	8.8	●	10	49	61	103
DSW043-029-06DI5	4.3	●	6	29	36	74	DSW089-049-10DI5	8.9	●	10	49	61	103
DSW044-029-06DI5	4.4	●	6	29	36	74	DSW090-049-10DI5	9	●	10	49	61	103
DSW045-029-06DI5	4.5	●	6	29	36	74	DSW091-049-10DI5	9.1	●	10	49	61	103
DSW046-029-06DI5	4.6	●	6	29	36	74	DSW092-049-10DI5	9.2	●	10	49	61	103
DSW047-029-06DI5	4.7	●	6	29	36	74	DSW093-049-10DI5	9.3	●	10	49	61	103
DSW048-035-06DI5	4.8	●	6	35	44	82	DSW094-049-10DI5	9.4	●	10	49	61	103
DSW049-035-06DI5	4.9	●	6	35	44	82	DSW095-049-10DI5	9.5	●	10	49	61	103
DSW050-035-06DI5	5	●	6	35	44	82	DSW096-049-10DI5	9.6	●	10	49	61	103
DSW051-035-06DI5	5.1	●	6	35	44	82	DSW097-049-10DI5	9.7	●	10	49	61	103
DSW052-035-06DI5	5.2	●	6	35	44	82	DSW098-049-10DI5	9.8	●	10	49	61	103
DSW053-035-06DI5	5.3	●	6	35	44	82	DSW099-049-10DI5	9.9	●	10	49	61	103
DSW054-035-06DI5	5.4	●	6	35	44	82	DSW100-049-10DI5	10	●	10	49	61	103
DSW055-035-06DI5	5.5	●	6	35	44	82	DSW101-056-12DI5	10.1	●	12	56	71	118
DSW056-035-06DI5	5.6	●	6	35	44	82	DSW102-056-12DI5	10.2	●	12	56	71	118
DSW057-035-06DI5	5.7	●	6	35	44	82	DSW103-056-12DI5	10.3	●	12	56	71	118
DSW058-035-06DI5	5.8	●	6	35	44	82	DSW104-056-12DI5	10.4	●	12	56	71	118
DSW059-035-06DI5	5.9	●	6	35	44	82	DSW105-056-12DI5	10.5	●	12	56	71	118
DSW060-035-06DI5	6	●	6	35	44	82	DSW106-056-12DI5	10.6	●	12	56	71	118
DSW061-043-08DI5	6.1	●	8	43	53	91	DSW107-056-12DI5	10.7	●	12	56	71	118
DSW062-043-08DI5	6.2	●	8	43	53	91	DSW108-056-12DI5	10.8	●	12	56	71	118
DSW063-043-08DI5	6.3	●	8	43	53	91	DSW109-056-12DI5	10.9	●	12	56	71	118
DSW064-043-08DI5	6.4	●	8	43	53	91	DSW110-056-12DI5	11	●	12	56	71	118
DSW065-043-08DI5	6.5	●	8	43	53	91	DSW111-056-12DI5	11.1	●	12	56	71	118
DSW066-043-08DI5	6.6	●	8	43	53	91	DSW112-056-12DI5	11.2	●	12	56	71	118
DSW067-043-08DI5	6.7	●	8	43	53	91	DSW113-056-12DI5	11.3	●	12	56	71	118
DSW068-043-08DI5	6.8	●	8	43	53	91	DSW114-056-12DI5	11.4	●	12	56	71	118
DSW069-043-08DI5	6.9	●	8	43	53	91	DSW115-056-12DI5	11.5	●	12	56	71	118
DSW070-043-08DI5	7	●	8	43	53	91	DSW116-056-12DI5	11.6	●	12	56	71	118
DSW071-043-08DI5	7.1	●	8	43	53	91	DSW117-056-12DI5	11.7	●	12	56	71	118
DSW072-043-08DI5	7.2	●	8	43	53	91	DSW118-056-12DI5	11.8	●	12	56	71	118
DSW073-043-08DI5	7.3	●	8	43	53	91	DSW119-056-12DI5	11.9	●	12	56	71	118
DSW074-043-08DI5	7.4	●	8	43	53	91	DSW120-056-12DI5	12	●	12	56	71	118
DSW075-043-08DI5	7.5	●	8	43	53	91							

● : Line up

## STANDARD CUTTING CONDITIONS

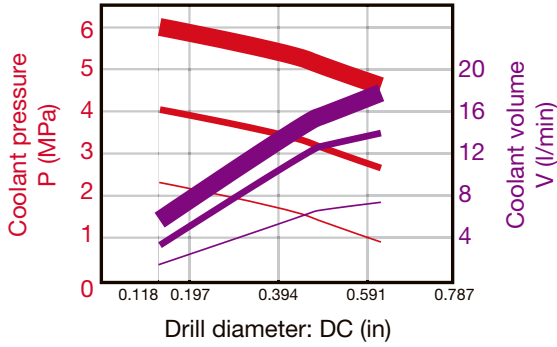
See more information

e-catalog



### Recommended coolant pressure and volume for internal coolant supply:

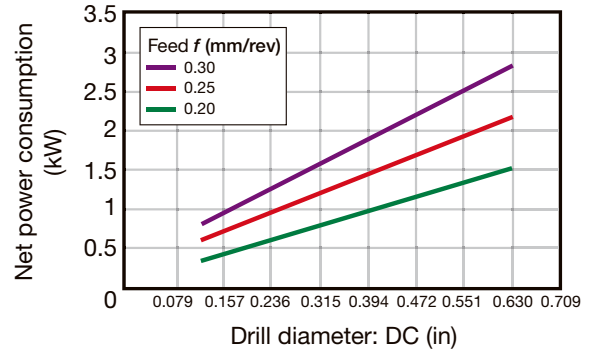
The following graph is a reference guide for pressure and volume. Values should be adjusted according to work material and actual chip evacuation.



- █ : 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 :  $V_c = 328$  sfm

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

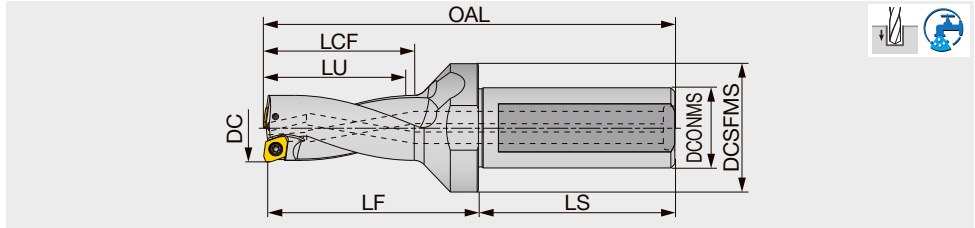
Drilling Tool

Technical Reference

# TUNGDRILL TWISTED

TDX-F L/D=2

Indexable drill, L/D = 2, flat cotter



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*

Tool diameter	Tool diameter tolerance	Hole diameter tolerance*
ø12.5 - ø17	+ 0.1 / 0	+ 0.25 / 0
ø17.5 - ø20	+ 0.2 / 0	+ 0.3 / 0

\*Just for reference

## SPARE PARTS



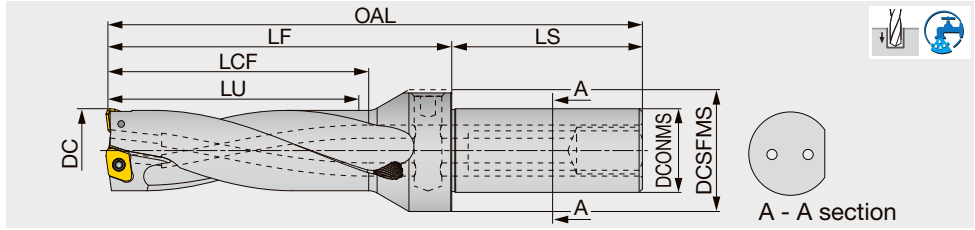
Designation	Clamping screw	Wrench
TDX125 - 145	CSPB-2H	IP-6DB
TDX150 - 170	CSPB-2L043	IP-6DB
TDX175 -200	CSPB-2.2	IP-7D

Recommended clamping torque (N·m): CSPB-2H/CSPB-2L043=0.7, CSPB-2.2=1

Reference pages: Inserts → **9-33**  
Standard cutting conditions → **9-34**

# 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*

\*\* 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" - ø1.000"	+ 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)

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

Reference pages: Inserts → 9-33

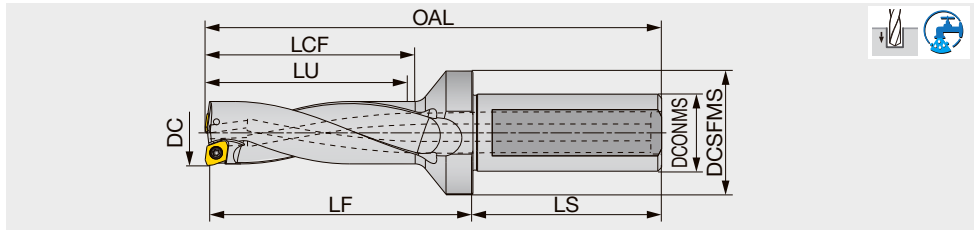
Standard cutting conditions → 9-34

Grade 1  
Insert 2  
Ext. Toolholder 3  
Int. Toolholder 4  
Threading 5  
Grooving 6  
Shaper 7  
Endmill 8  
Drilling Tool 9  
Technical Reference 10

# TUNGDRILL TWISTED

TDX-F L/D=3

Indexable drill, L/D = 3, flat cotter



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*

Tool diameter	Tool diameter tolerance	Hole diameter tolerance*
ø12.5 - ø17	+ 0.1 / 0	+ 0.25 / 0
ø17.5 - ø20	+ 0.2 / 0	+ 0.3 / 0

\*Just for reference

## SPARE PARTS



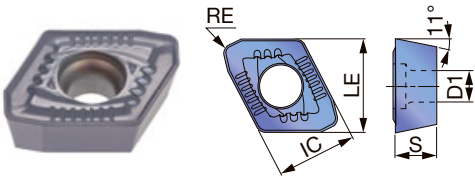
Designation	Clamping screw	Wrench
TDX125 - 145	CSPB-2H	IP-6DB
TDX150 - 170	CSPB-2L043	IP-6DB
TDX175 - 200	CSPB-2.2	IP-7D

Recommended clamping torque (N·m): CSPB-2H/CSPB-2L043=0.7, CSPB-2.2=1

Reference pages: Standard cutting conditions → [9-34](#)

# INSERT

## DJ



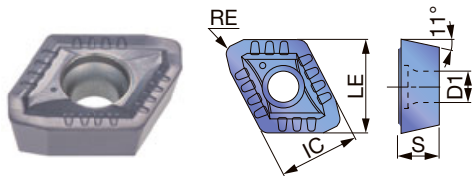
P	Steel		★	☆				
M	Stainless	☆	★					
K	Cast iron		☆	★				
N	Non-ferrous	★		☆				
S	Superalloys	☆	★	☆				
H	Hard materials	☆	★	☆				

★ : 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

● : Line up

## DS



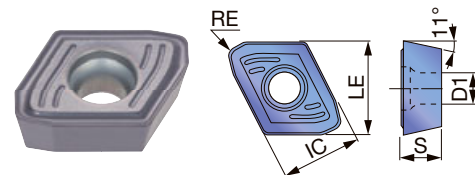
P	Steel	☆	★					
M	Stainless	☆	★					
K	Cast iron							
N	Non-ferrous	☆						
S	Superalloys	☆	★					
H	Hard materials							

★ : 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

● : 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

● : Line up

Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Shaper

Endmill

Drilling Tool

Technical Reference

## RECOMMENDED INSERT

ISO	Workpiece material	Hardness	First choice	High feed	High speed	Troubleshooting		
						Chipping resistance	Wear resistance	Surface finish
<b>P</b>	Low carbon steels (C ≤ 0.3%)	- 200 HB	DS, AH6030	-	-	DS, AH725	-	DW, AH6030
	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
<b>M</b>	Stainless steel	- 200 HB	DS, AH6030	-	-	DS, AH725	-	DW, AH6030
<b>K</b>	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
<b>N</b>	Aluminum alloy	-	DJ, AH725	DW, AH725	DS, AH6030	-	-	DW, AH725
<b>S</b>	Titanium alloys Heat-resistant alloys	- 40 HRC	DS, AH6030	-	-	DW, AH725	-	DW, AH725
<b>H</b>	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"
<b>P</b>	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
	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
	Low alloy steels 4130, etc.	- 200 HB	525 - 820	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0047
	Alloy steels 4140, 5120, etc.	- 300 HB	262 - 656	2D, 3D	0.0016 - 0.0039	0.0016 - 0.0047	0.0024 - 0.0051
<b>M</b>	Stainless steels (Austenitic) 304, 316, etc.	- 200 HB	328 - 656	2D, 3D	0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039
	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
	Stainless steels (Precipitation hardening) 630, etc.	-	262 - 394	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031
<b>K</b>	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
	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
<b>N</b>	Aluminum alloy 333.0, 383.0, etc.	-	656 - 1312	2D, 3D	0.0039 - 0.0047	0.0039 - 0.0059	0.0059 - 0.0079
<b>S</b>	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	66 - 197	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039
	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	131 - 394	2D, 3D	0.0024 - 0.0039	0.0024 - 0.0039	0.0024 - 0.0047
<b>H</b>	Hardened steel ≥ 40HRC	- 50 HRC	131 - 328	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039



# MEMO

Grade **1**

Insert **2**

Ext. Toolholder **3**

Int. Toolholder **4**

Threading **5**

Grooving **6**

Shaper **7**

Endmill **8**

Drilling Tool **9**

Technical Reference **10**

# Technical Reference

The background of the image is a blurred technical drawing on a white sheet of paper. In the lower-left corner, a detailed line drawing of a gear is visible. In the lower-right corner, a red-handled screwdriver is lying on the paper. The overall scene is a close-up, shallow depth-of-field shot of a workspace.

# Technical Reference

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Tungaloy, NTK

For instructions, directions and parts,  
please refer to the General catalog



Tungaloy



NTK

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NTK  
SPLASH holders



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NTK  
Y-axis turning holder, please refer to page : O24



Grade

1

Insert

2

Ext. Toolholder

3

Int. Toolholder

4

Threading

5

Grooving

6

Shaper

7

Endmill

8

Drilling Tool

9

Technical Reference

10

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## Iwaki Plant

Products: Cutting Tools

## Nagoya Plant

Products: Cutting Tools

## Kyushu Plant

Products: PCBN  
PCD Tools  
Deep Hole Drills

## Nirasaki Plant

Products: Cutting Tools  
Friction Materials (TungFric)  
Wear Resistant Tools  
Civil Engineering Tools

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### Komaki plant

Products: Cutting Tools

### Kamioka plant

Products: Cutting Tools

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