

Catalog of Turning Solution 2024/2025

A



Directory

01

Insert

A1

02

External Toolholder

A134

03

Internal Toolholder

A160

04

PSC Toolholder

A175

05

Threading

A209

06

**Parting, Grooving
and Groove-Turn system**

A224

07

Miniature Tool

A249

Directory



Insert **A1-A133**

- Turnline ISO Insert
- Turnline Ceramic Insert
- Turnline CBN Insert
- Turnline PCD Insert



External Toolholder **A134-A159**

- Multi-clamp Toolholder
- Screw-on Clamp Toolholder
- External Toolholder(Inch)
- External Toolholder on Swiss Lathes
- Lever-Lock Toolholder



Internal Toolholder **A160-A174**

- Multi-clamp Toolholder
- Screw-on Clamp Toolholder
- Steel Boring Bar with Coolant Hole



PSC Toolholder **A175-A208**

- PSC Toolholder



Threading **A209-A223**

- Thread Inserts
- Thread Toolholder
- Thread Inserts for Oil Pipe
- Thread Toolholder for Oil Pipe



Parting, Grooving and Groove-Turn system **A224-A248**

- Turnline TKD Series
- Turnline TNG Series
- Turnline GB Series
- Turnline TGE Series
- Turnline TTF Series
- Turnline TTS Series



Miniature Tool **A249-A262**

- Solid Boring Bar
- Modular Small Hole Cutter


C
N
M
G
12

1
2
3
4
5


Insert Shape Relief Angle Tolerance Cross Section Type Cutting Edge Length Diameter of Inscribed Circle

1 Insert Shape


C
N
M
G
12
04
08
 - MP




C




D




E




K




L




R




S



T




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
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2 Relief Angle


C
N
M
G
12
04
08
 - MP




B




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D




E




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N



P

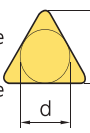
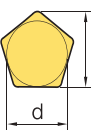
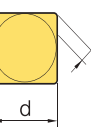
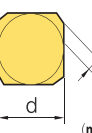


O

3 Tolerance

C
N
M
G
12
04
08
 - MP

d : Inscribed circle
 t : Thickness
 m : Refer to figure

Class	d	m	t
A	±0.025	±0.005	±0.025
C	±0.025	±0.013	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
J *	±0.05 ~ ±0.15	±0.005	±0.025
K *	±0.05 ~ ±0.15	±0.013	±0.025
L *	±0.05 ~ ±0.15	±0.025	±0.025
M *	±0.05 ~ ±0.15	±0.08 ~ ±0.20	±0.13
N *	±0.05 ~ ±0.15	±0.08 ~ ±0.18	±0.025
U *	±0.08 ~ ±0.25	±0.13 ~ ±0.38	±0.13

* Sides are based on unground insert

Tolerance on C, E, H, M, O, P, R, S, T, W Insert Shape (Exceptional case)

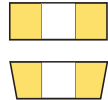
d	Tolerance on d		Tolerance on m	
	J, K, L, M, N, U	U	M, N	U
6.35	±0.05	±0.08	±0.08	±0.13
9.525	±0.05	±0.08	±0.08	±0.13
12.7	±0.08	±0.13	±0.13	±0.20
15.875	±0.10	±0.18	±0.15	±0.27
19.05	±0.10	±0.18	±0.15	±0.27
25.4	±0.13	±0.25	±0.18	±0.38

Tolerance on D Insert Shape (Exceptional case)

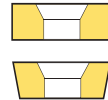
d	Tolerance on d	Tolerance on m
6.35	±0.05	±0.11
9.525	±0.05	±0.11
12.7	±0.08	±0.15
15.875	±0.10	±0.18
19.05	±0.10	±0.18

4 Cross Section Type

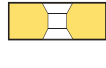
C
N
M
G
12
04
08
 - MP




A



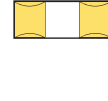
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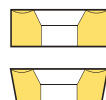
C



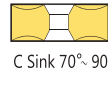
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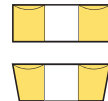
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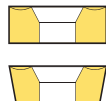
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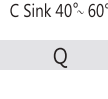
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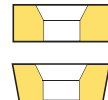
M




N



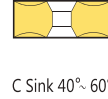
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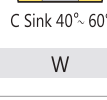
R




T



U



W



X

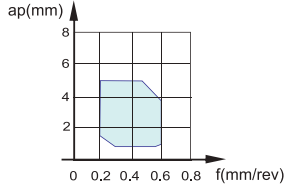
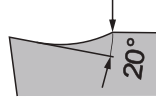
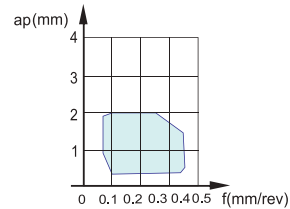
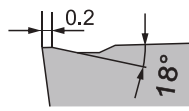
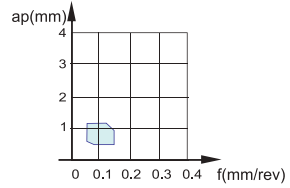
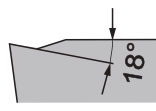
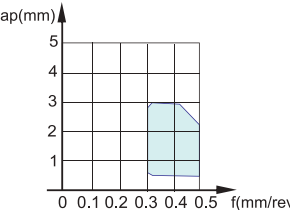
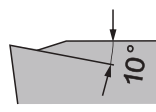
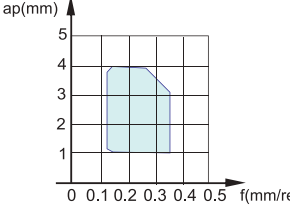
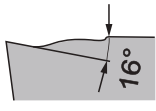
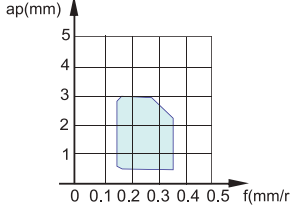
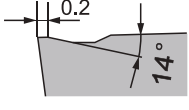
Work Materials	Work Condition	Grade	Cutting Speed (m/min)	ISO	Cutting Performance
P Steel	Continuous	TP710	150-360	P01	
		TP7110	150-360	P10	
		TC580	100-250	P20	
		TC230	100-250	P30	
		GT301	100-250	P40	
		GT601	100-250	P50	
	Interrupted	TP720	120-280		
		TP7220	120-280		
		TG4120	80-200		
M Stainless Steel	Continuous	TM8110	100-220	M01	
		TJ15	50-180	M10	
		TJ20U	50-180	M20	
	Interrupted	TM8220	100-220	M30	
		TG4120	100-240	M40	
				M50	
K Cast Iron	Continuous	TK910	200-400	K01	
	Interrupted	TK920	150-300	K10	
		TG4120	120-240	K20	
				K30	
N Non-ferrous Metal	Continuous	TN320	100-1000	N10	
				N20	
S Superalloys Titanium	Continuous	TMS3115	40-70	S01	
				S10	
	Interrupted	TMS3125	45-65	S20	
				S30	
H Hard Materials	Continuous	TH510	60-150	H10	
				H20	

Work Materials	ISO	Coated Carbide			Cermet	Coated Cermet
		CVD	PVD	No Coated		
P Steel	P01				TC580	GT301
	P10	TP710	TJ15		TC230	GT601
	P20	TP7110 TP720 TP7220	TJ20U TG4120			
	P30					
	P40					
	P50					
M Stainless Steel	M01					
	M10		TM8110 TJ15			
	M20		TJ20U TM8220			
	M30		TG4120			
	M40					
	M50					
K Cast Iron	K01	TK910			TC580	GT301
	K10				TC230	GT601
	K20	TK920		TG4120		
	K30					
N Non-ferrous Metal	N10					
	N20			TN320		
S Superalloys Titanium	S01		TMS3115			
	S10		TMS3125			
	S20					
	S30					
H Hard Materials	H10		TH510			
	H20					

Chipbreaker	Features	Application	Cutting Edge
PF	First choice chipbreaker for finishing steels. The dimple structure decreases the contact area between the insert surface and chips, resulting in significant reduction of heat occurrence.		
PM	General purpose chipbreaker used for medium cutting. Unique chipbreaker geometry with sharp edges and large rake angle assures free cutting action in a wide range of cutting conditions.		
MP	Excellent chip control when finish cutting. Outstanding chip control when high feed turning at small depth of cut.		
GM	Applicable to a wide range of cutting condition with sharp edge. Recommended chipbreaker for stainless steel turning.		
MK	Highly reliable chipbreaker for medium cutting under a wide range of conditions from continuous to interrupted cutting. Recommended chipbreaker for cast iron turning.		
No Chipbreaker	Can cover a wide range of applications from finishing to roughing of cast iron. Excellent in cutting edge strength.		

Chipbreaker	Features	Application	Cutting Edge
PS	3-dimensional chipbreaker designed to have excellent chip control capability and low cutting force in finishing to medium cutting. Low cost, M-class positive insert used for high efficiency in a wide range of applications.		
MM	Developed chipbreaker for medium cutting. Excellent chip control due to wide, positive chip flow zone.		
KS	Highly reliable chipbreaker for medium cutting under a wide range of conditions from continuous to interrupted cutting.		
25UL	High positive cutting edge reduces chip contact. Minimized temperature while machining ensures longer tool life. Stable machining with superior chip evacuation in high depth of cut.		
15D	Excellent chip control at wide range of cutting conditions. Suitable for stainless steel cutting.		
15M	Shallow depth of cut with sharp edge. Longer tool life at high speed cutting due to low cutting force. Good finishing surface.		







Chipbreaker	Features	Application	Cutting Edge
24UL	High positive cutting edge reduces chip contact. Minimized temperature while machining ensures longer tool life. Stable machining with superior chip evacuation in high depths of cut.		
15V	Longer tool life due to minimizing chip contact and reducing cutting heat while machining.		
12U/13U/15U	Improved chip control makes tool life longer and better machining.		
16X	Stable machinability in interrupted machining toughness. Stable chip evacuation and machining in machining with high depth of cut.		
15K	Excellent chip control in application with micro depth of cut and low feed. Low cutting load and super finishing surface. Excellent for both internal and external machining		
14VI	Longer tool life due to minimizing chip contact and reducing cutting heat while machining.		

Chipbreaker	Features	Application	Cutting Edge
AL	Extremely sharp cutting edge. Polished surface.Excellent chip forming at high cutting feeds.Low power consumption.		
FM	Suitable for finishing to medium cutting. Excellent chip control.		
SF	Large rake angle reduces cutting force. Less burring achieved by diminishing damage from notching.		
US	Superior cutting edge sharpness and strength achieved by a positive land. Extra strength of cutting edge inhibits damage from wall shouldering.		
UG	Large rake angle reduces cutting force. Less burring achieved by diminishing damage from notching.		
PU	General purpose chipbreaker. Excellent chip control at machining of low carbon steel.		

Chipbreaker	Features	Application	Cutting Edge
TQ	Sharp cutting performance with 3-D rake angle and double projection design.		
LR	Smooth chipbreaker geometry improves chip flow with less adhesion. Large curled chips.		
UA	Enables machining over a wide range of conditions by using the optimum chipbreaker width according to the cutting depth.		
UT	Strong edge chipbreaker for medium machining range.		
GF	Special designed rake angle and cutting edge inclination; Sharp cutting edge, small cutting force; Good machining surface quality; Suitable for stainless steel finishing.		
TF	3-dimensional chipbreaker designed with double rake angle; Sharp cutting edge and lower cutting resistance; Efficiently solved build up edge, work hardening and other machining problems. Cutting edge inclination designation is good to control chip flow direction and obtains excellent Surface quality.		

Chipbreaker	Features	Application	Cutting Edge
QM	Special chipbreaker design to keep cutting edge sharp and safe; Good anti impact resistance; Excellent tool life time; Suitable for stainless steel semi-finishing.		
CM	The combined structure of flat edge and edge inclination has both wear resistance and chipping resistance, and can well control the cutting flow, suitable for semi-finishing general machining of steel and stainless steel.		
PR	For rough machining of carbon steel, cast steel and alloy steel. The combination of variable rake angle and variable edge width meets the sharpness and strength requirements of different depths of cut.		
PH	For heavy cutting of carbon steel, cast steel and alloy steel. Variable edge and stepped chipbreaker for low cutting resistance. Straight cutting edge and chamfer making the cutting sharpness and cutting edge strength is guaranteed at the same time.		
KR	For heavy cutting of cast iron. The cutting edge has high strength and large chip groove, which is suitable for large allowance cutting.		

● :Continuous Cutting ● :Light Interrupted Cutting

Application		Chipbreaker	Designation	Corner Radius	Coated													No Coated	Cermets		Coated Cermets			
					TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301	
DN	Rhombic 55° Negative with Hole	P	Steel	●	●	●	●										●	●	●	●	●	●		
		M	Stainless					●	●	●								●	●					
		K	Cast Iron							●	●	●							●	●	●	●		
		N	Non-ferrous															●						
		S	Superalloys											●	●									
		H	Hard Materials													●								
Finishing		DNMG110404-PF	0.4	●	●																			
		DNMG110408-PF	0.8	●	●																			
		DNMG150404-PF	0.4	●	●																			
		DNMG150408-PF	0.8	●	●																			
		DNMG150604-PF	0.4	●	●																			
		DNMG150608-PF	0.8	●	●																			
		DNMG150604-GF	0.4						●															
		DNMG150608-GF	0.8						●															
			DNMG150404-TF	0.4						●														
			DNMG150604-TF	0.4						●														
		Medium Cutting		DNMG110404-PM	0.4	●	●																	
				DNMG110408-PM	0.8	●	●																	
DNMG110412-PM	1.2			●	●																			
DNMG150404-PM	0.4			●	●																			
DNMG150408-PM	0.8			●	●																			
DNMG150412-PM	1.2			●	●																			
DNMG150604-PM	0.4			●	●																			
DNMG150608-PM	0.8			●	●																			
	DNMG110404-QM		0.4						●															
	DNMG110408-QM		0.8						●															
	DNMG150404-QM		0.4						●															
	DNMG150408-QM		0.8						●															
	DNMG150604-QM		0.4						●															
	DNMG150608-QM		0.8						●															
	DNMG150612-QM		1.2						●															
			DNMG110404-SF	0.4														●	○					
DNMG110408-SF			0.8														●	○						
DNMG150404-SF			0.4														●	○						
DNMG150408-SF			0.8														●	○						
DNMG150604-SF			0.4														●	○						
DNMG150608-SF			0.8														●	○						

● In Stock ○ Inquiry Each Time

External Toolholders:A135,A148
Internal Toolholders:A160,A168

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving





Miniature Tool

Application		Chipbreaker	Designation	Corner Radius	Coated															No Coated	Cermets	Coated Cermet														
					TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320																	
					TC580	TC230	GT601	GT301																												
SN	Square 90°		P	Steel	●	◐	●	◐	●	◐	●	◐	●	◐	●	◐	●	◐	●	◐	●	◐	●	◐	●	◐	●	◐	●	◐	●	◐	●			
			M	Stainless					●	◐	●					●	◐							●	◐											
	Negative		K	Cast Iron						●		●												●	◐											
			N	Non-ferrous																						●										
	with Hole		S	Superalloys													●	◐																		
			H	Hard Materials														●																		

● In Stock ○ Inquiry Each Time

 External Toolholders:A135,A148,A155
 Internal Toolholders:A160

● :Continuous Cutting ● :Light Interrupted Cutting



Application	Chipbreaker	Designation	Corner Radius	Coated													No Coated	Cermet		Coated Cermet				
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301		
Medium Cutting		SNMG120408-MK	0.8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
		SNMG120412-MK	1.2							●	●													
		SNMG150412-MK	1.2							●	●													
		SNMG150612-MK	1.2							●	●													
		SNMG150616-MK	1.6							●	●													
		SNMG190612-MK	1.2							●	●													
		SNMA090304	0.4							●	●													
		SNMA090308	0.8							●	●													
		SNMA090312	1.2							●	●													
		SNMA120404	0.4							●	●													
		SNMA120408	0.8							●	●													
		SNMA120412	1.2							●	●													
		SNMA120416	1.6							●	●													
		SNMA190612	1.2							●	●													
	SNMA190616	1.6							●	●														
	Heavy Cutting		SNMG120408-PR	0.8	○	●																		
			SNMG120412-PR	1.2	○	●																		
			SNMG120416-PR	1.6	○	●																		
SNMG150608-PR			0.8	○	●																			
SNMG150612-PR			1.2	○	●																			
SNMG150616-PR			1.6	●	●																			
SNMG150624-PR			2.4	○	●																			
SNMG190608-PR			0.8	○	●																			
SNMG190612-PR			1.2	○	●																			
SNMG190616-PR			1.6	○	●																			
SNMG190624-PR			2.4	○	●																			
SNMG250724-PR		2.4	●	●																				
SNMG250924-PR		2.4	●	●																				
		SNMM150616-PH	1.6	●	○																			
		SNMM190612-PH	1.2	●	●																			
		SNMM190616-PH	1.6	●	●																			
		SNMM190624-PH	2.4	○	●																			
		SNMM250724-PH	2.4	●	●																			
	SNMM250732-PH	3.2	○	●																				
	SNMM250924-PH	2.4	●	●																				
SNMM250932-PH	3.2	○	●																					

● In Stock ○ Inquiry Each Time

External Toolholders: A135, A148, A155
Internal Toolholders: A160

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

● :Continuous Cutting ● :Light Interrupted Cutting

Application	Chipbreaker	Designation	Corner Radius	Coated															No Coated	Cermet		Coated Cermet									
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301									
				Heavy Cutting		SNMG120408-LR	0.8					●	●																		
SNMG120412-LR	1.2							●	●																						
SNMG150608-LR	0.8							●	●																						
SNMG150612-LR	1.2							●	●																						
SNMG190612-LR	1.2							●	●																						
SNMG190616-LR	1.6							●	●																						
	SNMG120408-KR	0.8									●	●																			
	SNMG120412-KR	1.2									●	●																			
	SNMG120416-KR	1.6									●	●																			
	SNMG150612-KR	1.2									●	●																			
	SNMG150616-KR	1.6									●	●																			
	SNMG190612-KR	1.2									●	●																			
	SNMG190616-KR	1.6									●	●																			
	○ Inquiry Each Time																														

● In Stock ○ Inquiry Each Time

External Toolholders: A135, A148, A155
Internal Toolholders: A160

Insert

External Toolholder




Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

Application	Chipbreaker	Designation	Corner Radius	Coated															No Coated	Cermet		Coated Cermet								
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301								
				Finishing		TNMG160404-PF	0.4	●	●																					
TNMG160408-PF	0.8	●	●																											
TNMG220404-PF	0.4	●	●																											
TNMG220408-PF	0.8	●	●																											
	TNMG160404-GF	0.4									●																			
	TNMG160408-GF	0.8									●																			
	TNMG160404-TF	0.4									●																			

● In Stock ○ Inquiry Each Time

External Toolholders: A137, A149
Internal Toolholders: A161, A168

● :Continuous Cutting ● :Light Interrupted Cutting

Application	Chipbreaker	Designation	Corner Radius	Coated												No Coated	Cermet	Coated Cermet							
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301			
Medium Cutting		TNMA110304	0.4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
		TNMA110308	0.8					●	●	●					●	●									
		TNMA160308	0.8																						
		TNMA160404	0.4																						
		TNMA160408	0.8																						
		TNMA160412	1.2																						
		TNMA160416	1.6																						
		TNMA220404	0.4																						
		TNMA220408	0.8																						
		TNMA220412	1.2																						
	TNMA220416	1.6																							
		TNMG160404-US	0.4																						
		TNMG160408-US	0.8																						
		TNMG160404-UG	0.4																						
		TNMG160408-UG	0.8																						
		TNMG160404R/L-C	0.4																						
		TNMG160408R/L-C	0.8																						
		TNMG160404-PU	0.4																						
		TNMG160408-PU	0.8																						
		TNMG160404-TQ	0.4																						
TNMG160408-TQ		0.8																							
	TNGG160401R/L-25UL	0.1																							
	TNGG160402R/L-25UL	0.2																							
	TNGG160404R/L-25UL	0.4																							
	TNGG160402R/L-24UL	0.2																							
	TNGG160404R/L-24UL	0.4																							
	TNGG160401R/L-15D	0.1																							
	TNGG160402R/L-15D	0.2																							
	TNGG160404R/L-15D	0.4																							
	TNGG160408R/L-15D	0.8																							
	TNGG160402R/L-15M	0.2																							
	TNGG160404R/L-15M	0.4																							
	TNGG160408R/L-15M	0.8																							

● In Stock ○ Inquiry Each Time

External Toolholders:A137,A149
Internal Toolholders:A161,A168

● : Continuous Cutting ● : Light Interrupted Cutting

Application		Chipbreaker	Designation	Corner Radius	Coated												No Coated	Cermet	Coated Cermet						
					TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301		
Heavy Cutting		TNMG160408-PR	0.8	○	●																				
		TNMG160412-PR	1.2	○	●																				
		TNMG220408-PR	0.8	○	●																				
		TNMG220412-PR	1.2	○	●																				
		TNMG220416-PR	1.6	○	●																				
		TNMG160408-LR	0.8				●	●																	
		TNMG160412-LR	1.2				●	●																	
		TNMG220408-LR	0.8				○	●																	
		TNMG160408-KR	0.8							●	●														
		TNMG160412-KR	1.2							●	●														
		TNMG220408-KR	0.8							●	●														
		TNMG220412-KR	1.2							●	●														
			TNMG220416-KR	1.6						●	●														

● In Stock ○ Inquiry Each Time

External Toolholders: A137, A149
Internal Toolholders: A161, A168

● : Continuous Cutting ● : Light Interrupted Cutting

Application		Chipbreaker	Designation	Corner Radius	Coated												No Coated	Cermet	Coated Cermet						
					TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301		
Finishing		VNMG160402-PF	0.2	○	●																				
		VNMG160404-PF	0.4	●	●																				
		VNMG160408-PF	0.8	●	●																				
		VNMG220404-PF	0.4	●	●																				
		VNMG220408-PF	0.8	●	●																				
		VNMG160404-TF	0.4						●																
Medium Cutting		VNMG160404-PM	0.4	●	●																				
		VNMG160408-PM	0.8	●	●																				
		VNMG160412-PM	1.2	●	●																				

● In Stock ○ Inquiry Each Time

External Toolholders: A138, A149
Internal Toolholders: A161, A169

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving










Miniature Tool

Insert	VN	Rhombic 35° Negative with Hole	P Steel	M Stainless	K Cast Iron	N Non-ferrous	S Superalloys	H Hard Materials	Application															
									Chipbreaker	Designation	Corner Radius	Coated										No Coated	Cermets	
												TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115		TMS3125	TH510
External Toolholder		VNMG160404-FM	0.4			●	●											●	●		●	●	●	●
		VNMG160408-FM	0.8			●	●																	
Internal Toolholder		VNMG160404-QM	0.4									●												
		VNMG160408-QM	0.8											●										
PSC Toolholder		VNMG160404-SF	0.4																●	○				
		VNMG160408-SF	0.8																	●	○			
Threading		VNMG160404-GM	0.4				●	●																
		VNMG160408-GM	0.8				●	●																
Parting, Grooving		VNMG160404-MP	0.4				●	●																
		VNMG160408-MP	0.8				●	●																
Miniature Tool		VNMG160404-MK	0.4										●	●										
		VNMG160408-MK	0.8											●	●									
Miniature Tool		VNMG160412-MK	1.2																					
		VNMG160412-MK	1.2																					
Miniature Tool		VNMG160404-UG	0.4																	○				
		VNMG160408-UG	0.8																		○			
Miniature Tool		VNMG160404-PU	0.4																			●		
		VNMG160408-PU	0.8																				●	
Miniature Tool		VNMG160408-KR	0.8											●	●									
		VNMG160412-KR	1.2												●	●								

● In Stock ○ Inquiry Each Time

 External Toolholders: A138, A149
 Internal Toolholders: A161, A169








● :Continuous Cutting ● :Light Interrupted Cutting

Application	Chipbreaker	Designation	Corner Radius	Coated													No Coated	Cermet	Coated Cermet					
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301		
Medium Cutting		WNMG080404-MK	0.4																					
		WNMG080408-MK	0.8																					
		WNMG080412-MK	1.2																					
		WNMA060404	0.4																					
		WNMA060408	0.8																					
		WNMA080404	0.4																					
		WNMA080408	0.8																					
		WNMA080412	1.2																					
		WNMA080416	1.6																					
		WNMG080404-US	0.4																					
		WNMG080408-US	0.8																					
		WNMG080404-UG	0.4																					
		WNMG080408-UG	0.8																					
		WNMG080404-PU	0.4																					
		WNMG080408-PU	0.8																					
		WNMG080412-PU	1.2																					
		WNMG080404-TQ	0.4																					
		WNMG080408-TQ	0.8																					
		WNMG080412-TQ	1.2																					
	Heavy Cutting		WNMG080408-PR	0.8	●	●																		
WNMG080412-PR			1.2	●	●																			
WNMG080416-PR			1.6	●	●																			
		WNMG080408-LR	0.8					●	●															
		WNMG080412-LR	1.2					●	●															
		WNMG080408-KR	0.8								●	●												
	WNMG080412-KR	1.2								●	●													

● In Stock ○ Inquiry Each Time

External Toolholders:A139,A150
Internal Toolholders:A161,A169

● :Continuous Cutting ● :Light Interrupted Cutting

Application	Chipbreaker	Designation	Corner Radius	Coated														No Coated	Cermet	Coated Cermet			
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301	
Finishing to Medium Cutting		CCGT0602005R/L-13U	0.05	●	●	●	●										●	●	●	●	●	●	
		CCGT060201R/L-13U	0.1					●	●									●	●				
		CCGT060202R/L-13U	0.2							●	●									●	●	●	●
		CCGT060204R/L-13U	0.4																				
		CCGT09T301R/L-15V	0.1															●					
		CCGT09T302R/L-15V	0.2																●				
		CCGT09T304R/L-15V	0.4																●				
		CCGT09T3003R/L-15U	0.03															○					
		CCGT09T3005R/L-15U	0.05															●					
		CCGT09T301R/L-15U	0.1															●					
		CCGT09T302R/L-15U	0.2																●				
		CCGT09T304R/L-15U	0.4																●				
		CCGT060201R/L-12U	0.1																	●			
		CCGT060202R/L-12U	0.2																	●			
		CCGT060204R/L-12U	0.4																	●			
		CCGT09T301R/L-15U	0.1																	●			
		CCGT09T302R/L-15U	0.2																	●			
		CCGT09T304R/L-15U	0.4																	●			
		CCGT09T302-AL	0.2																	●			
		CCGT09T304-AL	0.4																	●			
		CCGT09T308-AL	0.8																	●			
		CCGT120402-AL	0.2																	●			
		CCGT120404-AL	0.4																	●			
		CCGT120408-AL	0.8																	●			

● In Stock ○ Inquiry Each Time

External Toolholders:A140,A146,A151
Internal Toolholders:A162,A170

● :Continuous Cutting ● :Light Interrupted Cutting

Application	Chipbreaker	Designation	Corner Radius	Coated												No Coated	Cermet	Coated Cermet													
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301									
				Finishing to Medium Cutting		DCMT070202-PS	0.2	●	●						●	●									●	●		●	●	●	●
DCMT070204-PS	0.4	●	●								●	●												●	●		●	●			
DCMT070208-PS	0.8	●	●								●	●												●	●		●	●			
DCMT11T302-PS	0.2	●	●								●	●													●	●		●	●		
DCMT11T304-PS	0.4	●	●								●	●													●	●		●	●		
DCMT11T308-PS	0.8	●	●								●	●													●	●		●	●		
DCMT150404-PS	0.4	●	●								●	●																			
DCMT150408-PS	0.8	●	●							●	●	○	●																		
	DCMT070202-MM	0.2						○	●				●												●	●		●	●		
	DCMT070204-MM	0.4						●	●				●													●	●		●	●	
	DCMT070208-MM	0.8						○	●																		●	●		●	●
	DCMT11T302-MM	0.2						○	●				●													●	●		●	●	
	DCMT11T304-MM	0.4						●	●				●													●	●		●	●	
	DCMT11T308-MM	0.8						●	●				●													●	●		●	●	
	DCMT11T304-KS	0.4									●	●																			
	DCMT11T308-KS	0.8									●	●																			
	DCMT070204-CM	0.4									●																				
	DCMT070208-CM	0.8									●																				
	DCMT11T304-CM	0.4									●																				
	DCMT11T308-CM	0.8									●																				
	DCMT070202-UA	0.2																○													
	DCMT070204-UA	0.4																○													
	DCMT11T302-UA	0.2																○													
	DCMT11T304-UA	0.4																○													
	DCMT070202-UT	0.2																○													
	DCMT070204-UT	0.4																○													
	DCMT11T302-UT	0.2																○													
	DCMT11T304-UT	0.4																○													
	DCGT070201R/L-15V	0.1																				●									
	DCGT070202R/L-15V	0.2																					●								
	DCGT070204R/L-15V	0.4																					●								
	DCGT11T3003R/L-15V	0.03																					○								
	DCGT11T3005R/L-15V	0.05																						●							
	DCGT11T301R/L-15V	0.1																					●								
	DCGT11T302R/L-15V	0.2																						●							
	DCGT11T304R/L-15V	0.4																						●							

● In Stock ○ Inquiry Each Time

External Toolholders: A140, A146, A151
Internal Toolholders: A162, A170

Insert

External Toolholder

Internal Toolholder










PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

● :Continuous Cutting ● :Light Interrupted Cutting

Application	Chipbreaker	Designation	Corner Radius	Coated													No Coated	Cermet	Coated Cermet				
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301	
Finishing to Medium Cutting		DCGT070201R/L-12U	0.1	●	●	●	●										●	●	●	●	●	●	
		DCGT070202R/L-12U	0.2															●					
		DCGT070204R/L-12U	0.4															●					
		DCGT11T3005R/L-15U	0.05																				
		DCGT11T301R/L-15U	0.1															●					
		DCGT11T302R/L-15U	0.2															●					
		DCGT11T304R/L-15U	0.4															●					
		DCGT11T3005R/L-16X	0.05																				
		DCGT11T301R/L-16X	0.1															●					
		DCGT11T302R/L-16X	0.2															●					
		DCGT11T304R/L-16X	0.4															●					
		DCGT070201R/L-12U	0.1																●				
		DCGT070202R/L-12U	0.2																●				
		DCGT070204R/L-12U	0.4																●				
		DCGT0702005R/L-15V	0.05																	●			
		DCGT070201R/L-15V	0.1																	●			
		DCGT070202R/L-15V	0.2																	●			
		DCGT070204R/L-15V	0.4																	●			
		DCGT11T302R/L-15V	0.2																	●			
		DCGT11T304R/L-15V	0.4																	●			
		DCGT070201R/L-15M	0.1																	●			
		DCGT070202R/L-15M	0.2																	●			
		DCGT070204R/L-15M	0.4																	●			
		DCGT11T301R/L-15M	0.1																	●			
		DCGT11T302R/L-15M	0.2																	●			
		DCGT11T304R/L-15M	0.4																	●			
		DCGT11T3005R/L-15U	0.05																	●			
		DCGT11T301R/L-15U	0.1																	●			
		DCGT11T302R/L-15U	0.2																	●			
		DCGT11T304R/L-15U	0.4																	●			
DCGT070204-AL		0.4																	●				
DCGT070208-AL		0.8																	●				
DCGT11T302-AL		0.2																	●				
DCGT11T304-AL		0.4																	●				
DCGT11T308-AL		0.8																	●				
Miniature Tool		DCGT11T312-AL	1.2																●				

● In Stock ○ Inquiry Each Time

External Toolholders:A140,A146,A151
Internal Toolholders:A162,A170

● :Continuous Cutting ● :Light Interrupted Cutting

Application	Chipbreaker	Designation	Corner Radius	Coated												No Coated	Cermet	Coated Cermet				
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301
Finishing to Medium Cutting		SCMT09T304-PS	0.4	●	●																	
		SCMT09T308-PS	0.8	●	●							●	●								●	●
		SCMT120404-PS	0.4	●	●							●	●								●	●
		SCMT120408-PS	0.8	●	●							●	●								●	●
		SCMT09T308-MM	0.8				●	●														
		SCMT09T308-KS	0.8								●	●										
		SCMT120408-KS	0.8								●	●										
		SCMT120412-KS	1.2								●	●										
		SCMT09T304-CM	0.4																			
		SCMT09T308-CM	0.8																			
		SCMT120404-CM	0.4																			
		SCMT120408-CM	0.8																			
			SCMT120412-CM	1.2																		

● In Stock ○ Inquiry Each Time

External Toolholders:A141,A146








Application	Chipbreaker	Designation	Corner Radius	Coated												No Coated	Cermet	Coated Cermet					
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301	
Finishing to Medium Cutting		TCMT090204-PS	0.4	●	●																		
		TCMT110202-PS	0.2	●	●																		
		TCMT110204-PS	0.4	●	●																		
		TCMT110208-PS	0.8	●	●																		
		TCMT16T304-PS	0.4	●	●																		
		TCMT16T308-PS	0.8	●	●																		
		TCMT110202-MM	0.2										●	○						●	●		
		TCMT110204-MM	0.4										●	○						●	●		
		TCMT110208-MM	0.8																				
		TCMT16T304-MM	0.4																				
		TCMT16T308-MM	0.8																				

● In Stock ○ Inquiry Each Time

External Toolholders:A143,A147
Internal Toolholders:A164,A172

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

● :Continuous Cutting ● :Light Interrupted Cutting

		TC																												
		Triangular 60°	P	Steel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							
		Positive 7°	M	Stainless				●	●	●								●	●											
		with Hole	K	Cast Iron				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							
			N	Non-ferrous															●											
			S	Superalloys											●	●														
			H	Hard Materials											●															
Application		Chipbreaker	Designation		Corner Radius	Coated												No Coated	Cermets		Coated Cermets									
						TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120		TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301					
External Toolholder		TCMT110204-KS		0.4											●	●														
		TCMT16T304-KS		0.4												●	●													
		TCMT16T308-KS		0.8												●	●													
		Internal Toolholder		TCMT090204-CM		0.4								●																
				TCMT090208-CM		0.8									●															
				TCMT110204-CM		0.4									●															
				TCMT110208-CM		0.8									●															
				TCMT16T304-CM		0.4									●															
				TCMT16T308-CM		0.8									●															
TCMT16T312-CM				1.2									●																	
PSC Toolholder				TCMT110202-UA		0.2														○										
		TCMT110204-UA		0.4															○											
		TCMT110202-UT		0.2														○												
		TCMT110204-UT		0.4															○											
Threading		TCGT0902005R/L-15V		0.05															●											
		TCGT090201R/L-15V		0.1																●										
		TCGT090202R/L-15V		0.2																	●									
		TCGT090204R/L-15V		0.4																	●									
		TCGT1102005R/L-15V		0.05																	●									
		TCGT110201R/L-15V		0.1																	●									
		TCGT110202R/L-15V		0.2																	●									
		TCGT110204R/L-15V		0.4																	●									
Parting, Grooving		TCGT110301R/L-10U		0.1																			●							
		TCGT110302R/L-10U		0.2																				●						
Miniature Tool		TCGT090204-AL		0.4																	●									
		TCGT110204-AL		0.4																		●								
		TCGT16T302-AL		0.2																			●							
		TCGT16T304-AL		0.4																			●							
		TCGT16T308-AL		0.8																			●							

● In Stock ○ Inquiry Each Time

External Toolholders: A143,A147
Internal Toolholders: A164,A172

● :Continuous Cutting ◐ :Light Interrupted Cutting

Application		Chipbreaker	Designation	Corner Radius	Coated													No Coated	Cermet	Coated Cermet			
					TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301
					TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301
Finishing to Medium Cutting		TPMT110202-MM	0.2																				
		TPMT110204-MM	0.4																				
		TPGH080202R/L-15K	0.2																				
		TPGH080204R/L-15K	0.4																				
		TPGH090201R/L-15K	0.1																				
		TPGH090202R/L-15K	0.2																				
		TPGH090204R/L-15K	0.4																				
		TPGH110302R/L-15K	0.2																				
		TPGH080201R/L-15K	0.1																				
		TPGH080202R/L-15K	0.2																				
		TPGH080204R/L-15K	0.4																				
		TPGH090201R/L-15K	0.1																				
		TPGH090202R/L-15K	0.2																				
		TPGH090204R/L-15K	0.4																				
		TPGH110302R/L-15K	0.2																				
		TPGH110304R/L-15K	0.4																				
	TPGH110202R/L-15K	0.2																					
	TPGH110204R/L-15K	0.4																					

● In Stock ◐ Inquiry Each Time

Internal Toolholders:A165,A172

Application		Chipbreaker	Designation	Corner Radius	Coated													No Coated	Cermet	Coated Cermet			
					TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301
					TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301
Medium Cutting		VBMT160404-PS	0.4	●	●																		
		VBMT160408-PS	0.8	●	●																		
		VBMT160412-PS	1.2	●	●																		

● In Stock ◐ Inquiry Each Time

External Toolholders:A143,A147,A152
Internal Toolholders:A166,A173



● :Continuous Cutting ○ :Light Interrupted Cutting

Insert	VB	Rhombic 35° Positive 5° with Hole	P Steel	M Stainless	K Cast Iron	N Non-ferrous	S Superalloys	H Hard Materials	Coated														No Coated	Cermet	Coated Cermet		
									TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320	TC580	TC230	GT601	GT301
									Application	Chipbreaker	Designation	Corner Radius	TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TH510	TJ15	TJ20U	TN320
External Toolholder		VBMT110304-MM	0.4					●	●																		
		VBMT110308-MM	0.8					○	●																		
		VBMT160402-MM	0.2					●	●																		
		VBMT160404-MM	0.4					●	●						●	○											
		VBMT160408-MM	0.8					●	●						●	○											
Internal Toolholder		VBMT160408-KS	0.8									●	●														
PSC Toolholder		VBMT110304-CM	0.4							●																	
		VBMT160404-CM	0.4							●																	
		VBMT160408-CM	0.8							●																	
		VBMT160412-CM	1.2							●																	
Threading		VBGT1103005R/L-15V	0.05														●										
		VBGT110301R/L-15V	0.1														●										
		VBGT110302R/L-15V	0.2														●										
		VBGT110304R/L-15V	0.4														●										
Parting, Grooving		VBGT1103005R/L-14VI	0.05													●											
		VBGT110301R/L-14VI	0.1													●											
		VBGT110302R/L-14VI	0.2													●											
		VBGT110304R/L-14VI	0.4													●											
Miniature Tool		VBGT1103005R/L-15M	0.05																		●						
		VBGT110301R/L-15M	0.1																			●					
		VBGT110302R/L-15M	0.2																			●					
		VBGT110304R/L-15M	0.4																			●					
		VBGT110302-AL	0.2																			●					
		VBGT110304-AL	0.4																			●					
		VBGT160402-AL	0.2																			●					
		VBGT160404-AL	0.4																			●					

● In Stock ○ Inquiry Each Time

External Toolholders: A143, A147, A152
Internal Toolholders: A166, A173

● :Continuous Cutting ● :Light Interrupted Cutting

Insert

External Toolholder




Internal Toolholder

PSC Toolholder

Threading


Parting , Grooving

Miniature Tool

Application	Chipbreaker	Designation	Corner Radius	Coated														No Coated	Cermet		Coated Cermet							
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120	TK910	TK920	TMS3115	TMS3125	TI620	TJ15	TJ20U	TN200	TC580	TC230	GT601	GT301						
Finishing to Medium Cutting		WCMT06T304-PS	0.4	●	●																	●	●	●	●			
		WCMT06T308-PS	0.8	●	●									●	●										●	●	●	●
		WCMX040208	0.8													●												
		WCMX050308	0.8													●												
		WCMX06T308	0.8													●												
		WCMX080412	1.2													●												
		WCGX030208	0.8															●										
		WCGX040208	0.8															●										
		WCGX050308	0.8															●										
		WCGX06T308	0.8															●										
WCGX080412		1.2															●											

● In Stock ○ Inquiry Each Time

● :Continuous Cutting ● :Light Interrupted Cutting



RC	Round	P	Steel		●	●	●	●																
	Positive 7°	M	Stainless						●	●	●													
		K	Cast Iron							●	●	●												
with Hole	N	Non-ferrous																						
	S	Superalloys										●	●											
		H	Hard Materials																					
Application	Chipbreaker	Designation	Corner Radius	Coated													No Coated	Cermet		Coated Cermet				
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120		TK910	TK920	TMS3115	TMS3125	TI620	TJ15	TJ20U	TN200	TC580	TC230	GT601	GT301	
Heavy Cutting		RCMX160600-HR	8.0	●	○																			
		RCMX200600-HR	10.0	●	○																			
		RCMX250700-HR	12.5	●	○																			
		RCMX320900-HR	16.0	●	○																			

● In Stock ○ Inquiry Each Time

External Toolholders:A158

- Insert
- External Toolholder
- Internal Toolholder
- PSC Toolholder
- Threading
- Parting, Grooving
- Miniature Tool

● :Continuous Cutting ● :Light Interrupted Cutting

LN	Oblong 90°	P	Steel		●	●	●	●																	
	Negative	M	Stainless						●	●	●														
		K	Cast Iron							●	●	●													
with Hole	N	Non-ferrous																							
	S	Superalloys										●	●												
		H	Hard Materials																						
Application	Chipbreaker	Designation	Corner Radius	Coated													No Coated	Cermet		Coated Cermet					
				TP710	TP720	TP7110	TP7220	TM8110	TM8220	TG4120		TK910	TK920	TMS3115	TMS3125	TI620	TJ15	TJ20U	TN200	TC580	TC230	GT601	GT301		
Heavy Cutting		LNMX191940-RF	4.0	●	○																				
Heavy Cutting		LNMX301940-RM	4.0	●	○																				

● In Stock ○ Inquiry Each Time

Insert

TOTIME ceramic insert is in good wear-resistance and shock-resistance in high speed cutting. Pure raw materials give stability and fine microstructure to the products. Shaped bodies are completely condensed so that the finished goods are strong and resistant against fracture and wear .

External Toolholder

- Improved work efficiency by increasing cutting speed on extremely higher than carbide inserts.
- Longer tool life through excellent wear resistance.
- Precise cutting and superior surface roughness.

Internal Toolholder


Grade	Workpiece Material	Advantages
K30G	Gray Cast Iron (FC)	Al ₂ O ₃ +TiCN Excellent wear resistance A basic choice for machining hardened steel and alloy steel
	Malleable (FCMB) Chilled Cast Iron	
KC30G	Carbon Steel	Al ₂ O ₃ +TiCN+TiN coated Excellent wear resistance Finishing for hardened steel and cast iron
	Alloy Steel	
	Bearing Steel	
H70G	Gray Cast Iron (FC)	Al ₂ O ₃ +ZrO ₂ Finishing, semi-finishing of cast iron and steel
	Steel (HRC45≤)	
C60G	Ductile Cast Iron	TiC+Al ₂ O ₃ High thermal shock resistance Usable with coolant Finishing for ductile cast iron

PSC Toolholder


Threading

Parting , Grooving


Miniature Tool

CN		Rhombic 80°	P	Steel	•	•	•								
		Negative	M	Stainless											
			K	Cast Iron	•	•	•	•							
		with Hole	N	Non-ferrous											
			S	Superalloys											
			H	Hard Materials	•	•									
Application	Chipbreaker	Designation	Corner Radius	CERAMIC											
				K30G	KC30G	H70G	C60G								
Medium Cutting		CNGA120404	0.4	•	•	•	•								
		CNGA120408	0.8	•	•	•	•								
		CNGA120412	1.2	•	•		•								

External Toolholders: A134, A148, A153
Internal Toolholders: A160, A168

DN		Rhombic 55°	P	Steel	•	•	•								
		Negative	M	Stainless											
			K	Cast Iron	•	•	•	•							
		with Hole	N	Non-ferrous											
			S	Superalloys											
			H	Hard Materials	•	•									
Application	Chipbreaker	Designation	Corner Radius	CERAMIC											
				K30G	KC30G	H70G	C60G								
Medium Cutting		DNGA150404	0.4	•	•	•	•								
		DNGA150408	0.8	•	•	•	•								


External Toolholders: A135, A148
Internal Toolholders: A160, A168

SN		Square 90°	P	Steel	•	•	•								
		Negative	M	Stainless											
			K	Cast Iron	•	•	•	•							
		with Hole	N	Non-ferrous											
			S	Superalloys											
			H	Hard Materials	•	•									
Application	Chipbreaker	Designation	Corner Radius	CERAMIC											
				K30G	KC30G	H70G	C60G								
Medium Cutting		SNGA120404	0.4	•	•	•	•								
		SNGA120408	0.8	•	•	•	•								


External Toolholders: A135, A148, A155
Internal Toolholders: A160

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

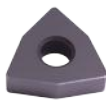
Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

TN		Triangular 60°	P	Steel	•	•	•						
		Negative with Hole	M	Stainless									
K	Cast Iron		•	•	•	•							
N	Non-ferrous												
S	Superalloys												
		H	Hard Materials		•	•							
Application	Chipbreaker	Designation	Corner Radius	CERAMIC									
Medium Cutting		TNGA160404	0.4	•	•	•	•						
		TNGA160408	0.8	•	•	•	•						
		TNGA160412	1.2	•	•		•						

External Toolholders: A137, A149
Internal Toolholders: A161, A168

VN		Rhombic 35°	P	Steel	•	•	•						
		Negative with Hole	M	Stainless									
K	Cast Iron		•	•	•	•							
N	Non-ferrous												
S	Superalloys												
		H	Hard Materials		•	•							
Application	Chipbreaker	Designation	Corner Radius	CERAMIC									
Medium Cutting		VNGA160404	0.4	•	•	•							
		VNGA160408	0.8	•	•	•							
		VNGA160412	1.2	•	•								

External Toolholders: A138, A149
Internal Toolholders: A161, A169

WN		Trigon 80°	P	Steel	•	•	•						
		Negative with Hole	M	Stainless									
K	Cast Iron		•	•	•	•							
N	Non-ferrous												
S	Superalloys												
		H	Hard Materials		•	•							
Application	Chipbreaker	Designation	Corner Radius	CERAMIC									
Medium Cutting		WNGA080404	0.4	•	•	•							
		WNGA080408	0.8	•	•	•							
		WNGA080412	1.2	•	•								

External Toolholders: A138, A149
Internal Toolholders: A161, A169

CBN

CBN Guidance For Grade And Chipbreaker

A30-33

CBN Standard Inserts

A34-94

CBN Application

A95

PCD

PCD Guidance For Grade And Chipbreaker

A96-100

PCD Standard Inserts

A101-129

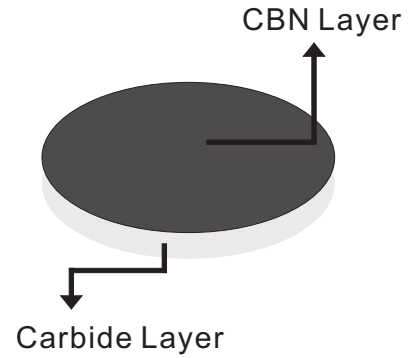
PCD Application

A130-133

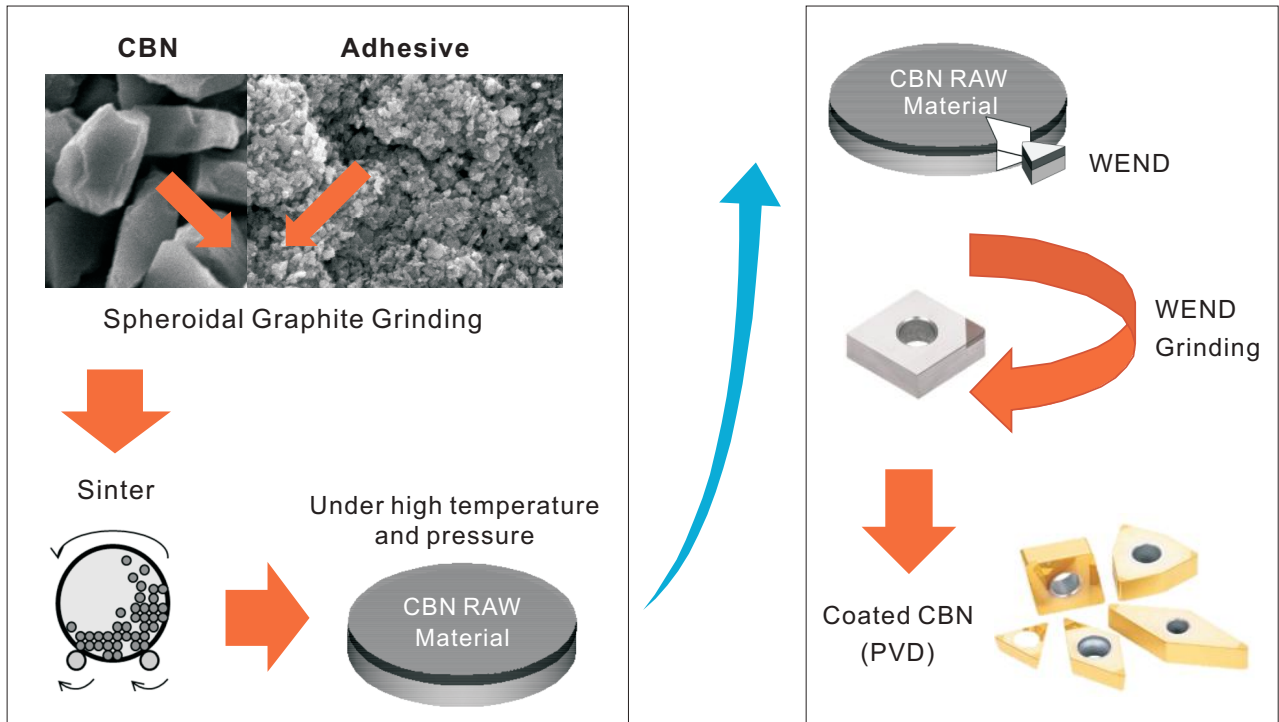
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

Characteristics of Cubic Boron Nitride (CBN)

Cubic boron nitride (CBN) is an excellent tool material with high hardness, high heat resistance and high chemical inertness. It can be applied to difficult-to-machine materials such as hardened steel, cast iron, superalloy and powder metal. Due to its high temperature resistance, high hardness, strong cutting force and low friction coefficient, CBN inserts enable to produce workpieces with outstanding surface roughness and maintain long life, high efficiency and stable performance.



CBN Production Process



Hardness Cutting Tool

Hardness of Carbide → 1500HV

Hardness of CBN → 3000HV

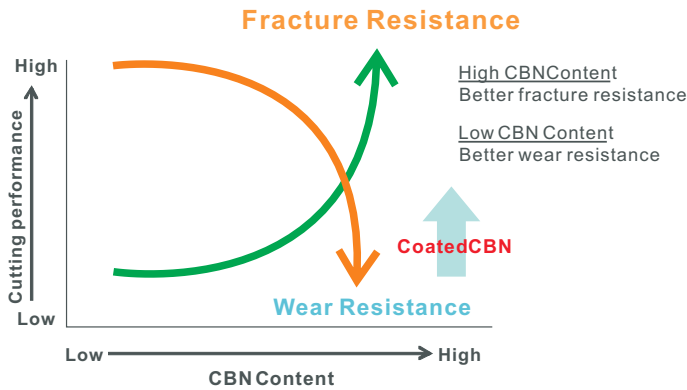
Capable of processing high hardness materials



Hardness x 3 Workpiece Material

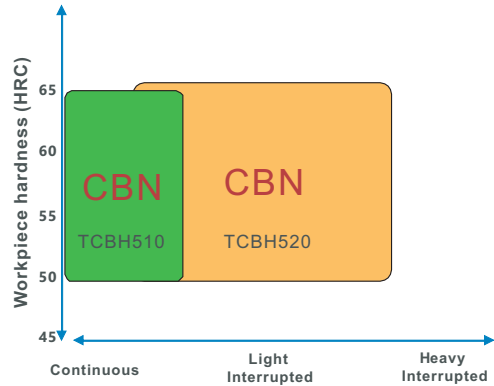
Steel → 240HV **x3=720HV**
 Hardened Steel → 700HV **x3=2100HV**

Relationship curve between cutting performance and CBN content in processing hardened steel



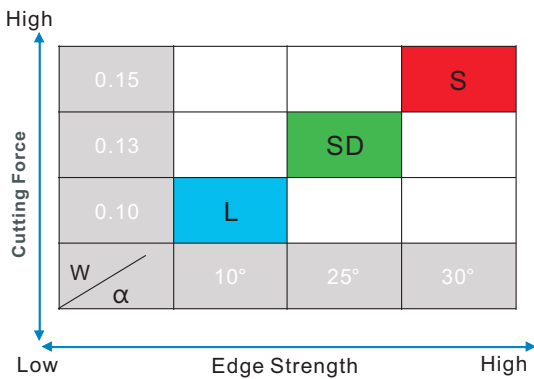
Coating CBN increases wear resistance!

CBN Application Range



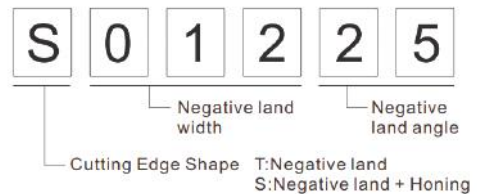
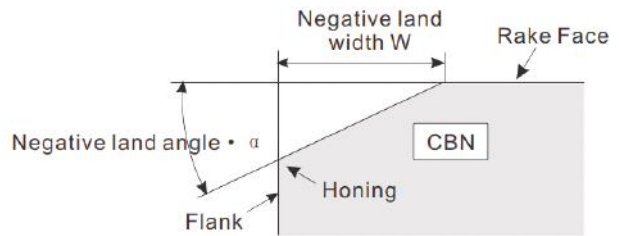
CBN is suitable for processing workpieces With hardness exceeding HRC50

Edge Treatment



SD: Standard Edge
 L: Low Cutting Force Edge
 S: Strong Edge

CBN Application Range



EX: S01225
 → 25° / 0.12mm Negative Land with Honing

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

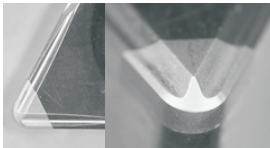
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

CBN Chipbreaker

Chipbreaker incorporated on the CBN cutting edge to maintain chip control capabilities throughout the machining process.

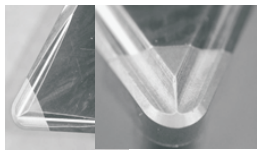
Unique chipbreaker design can be applied to both hardened and non-hardened parts with effective chip control.

• Medium to Rough Cutting



DOC: $ap=0.25\sim 0.75\text{mm}$
 feed : $f=0.05\sim 0.20\text{mm/rev}$

• Rough Cutting



DOC: $ap=0.50\sim 1.0\text{mm}$
 feed : $f=0.05\sim 0.20\text{mm/rev}$

Finishing of Hardened Steel

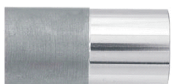
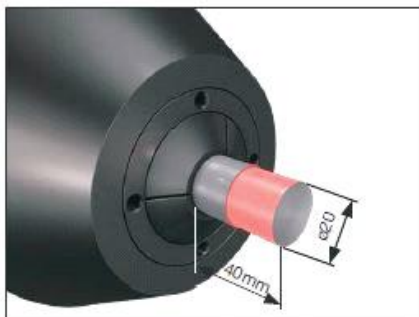
Without chip slot

With chip slot

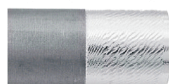
Work Material: Carbursed Steel (60HRC Automotive Component)
Tool No: 2-CCGT060204-HF
Cutting Conditions: $V_c=80\text{m/min}$, $f=0.08\text{mm/rev}$
 $ap=0.15\text{mmWet}$

Coated CBN

Excellent surface formed by chipbreaker



Due to low cutting force, chatter stability is greatly improved



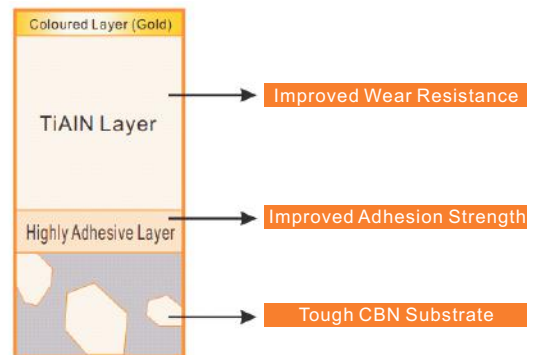
Competitor (without breaker)

TCCH620



General-purpose grade suitable for typical hardened steel machining applications. Achieves further stability in machining of wide range of hardened steel components.

General-purpose Machining (Low to Medium speed, Unstable Cutting)



Application of highly wear-resistant TiAlN coating to a tough substrate. Machining stability in low-rigidity environments and high-load cutting is dramatically improved.

Recommended Grades

	Grade	CBN Content (%)	Grain Size (µm)	Work Material		Features	Application
Uncoated	TCBH510	50 to 55	3	H	Hardened Steel	General-purpose grade for hardened steel machining with a high degree of fracture and wear resistance.	Bearing Steel Carburised Steel
	TCBH520	60 to 65	2		Hardened Steel	Achieve ultimate cutting edge strength. Suitable for light interrupted cutting.	Bearing Steel Carburised Steel
	TCBK100	90 to 95	2	K	Gray Cast Iron	Grade exhibiting wear and fracture resistance in cutting of cast iron.	Cylinder Block and Head
	TCBX800	90 to 95	1	S	Sintered Alloy	Grade exhibiting improved wear and fracture resistance in cutting of sintered alloy.	Sintered Parts Valve Seat Ring
	TCBS700	90 to 95	4		Heat-resistant Alloy	Provides long tool life in the finishing of Heat-resistant Alloy	Aerospace Parts
coated	TCCH620	65 to 70	2	H	Hardened Steel	Utilising a tough substrate along with a highly wear-resistant and adhesive coating layer, to achieve long tool life in general-purpose to high-efficiency machining.	Bearing Steel Carburised Steel

Cutting Conditions

ISO	Work Material	Grade	Cutting Condition		
			Vc (m/min)	f (mm/rev)	ap(mm)
H	Mould Steel	TCBH510/TCBH520	90-110	0.1-0.2	0.1-0.5
	Hardened Steel (>HRC 45)	TCBH510/TCBH520	120-250	0.1-0.5	0.5-2.5
	Hardened Steel (>HRC 45)	TCCH620	90-110 150-250	0.1-0.2 0.1-0.5	0.1-0.5 0.5-2.5
K	Gray Cast Iron	TCBK100	400-1500	0.1-0.8	3.0
S	<16%Co Sintered Ni-based Heat-resistant Alloy	TCBX800 TCBS700	20-40 40-100	0.1-0.25 0.05-0.2	0.1-1.0 0.1-1.0

Insert Edge Specification Overview

ISO	Work Material	Grade	Standard				Low Cutting Force Type				Strong Edge Type			
			Code	α	W	Honing	Code	α	W	Honing	Code	α	W	Honing
H	Hardened Steel	TCBH510	S01015	15°	0.10	Yes	S01010	10°	0.1	Yes	S01530	30°	0.15	Yes
		TCBH520	S01325	25°	0.13	Yes					S03035	35°	0.30	Yes
		TCCH620												
K	Gray Cast Iron	TCBK100	S01520	20°	0.15	Yes	T01015	15°	0.1	No	S01530	30°	0.15	Yes
							HL	-	-	Yes	S03035	35°	0.30	Yes
S	Sintered Alloy Heat-resistant Alloy	TCBX800 TCBS700	S01325	25°	0.13	Yes	T01015	15°	0.1	No	S01530	30°	0.15	Yes
							HL	-	-	Yes	S03035	35°	0.30	Yes


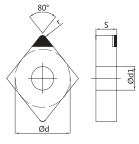
★ Customer can choose special insert edge according to exact demand




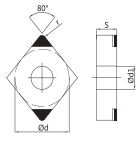
CN Rhombic 80°
Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●					●	●		


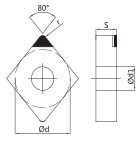
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
	CNGA090302	●	●	●	●			1	Φ9.525	3.18	3.81	0.2	
	CNGA090304	●	●	●	●			1	Φ9.525	3.18	3.81	0.4	
	CNGA090306	●	●	●	●			1	Φ9.525	3.18	3.81	0.6	
	CNGA090308	●	●	●	●			1	Φ9.525	3.18	3.81	0.8	


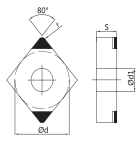
Multi-tip insert

	2-CNGA090302	●	●	●	●			2	Φ9.525	3.18	3.81	0.2	
	2-CNGA090304	●	●	●	●			2	Φ9.525	3.18	3.81	0.4	
	2-CNGA090306	●	●	●	●			2	Φ9.525	3.18	3.81	0.6	
	2-CNGA090308	●	●	●	●			2	Φ9.525	3.18	3.81	0.8	


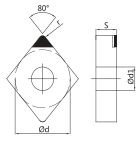
Single-tip insert

	CNGA09T302	●	●	●	●			1	Φ9.525	3.97	3.81	0.2	
	CNGA09T304	●	●	●	●			1	Φ9.525	3.97	3.81	0.4	
	CNGA09T306	●	●	●	●			1	Φ9.525	3.97	3.81	0.6	
	CNGA09T308	●	●	●	●			1	Φ9.525	3.97	3.81	0.8	

Multi-tip insert

	2-CNGA09T302	●	●	●	●			2	Φ9.525	3.97	3.81	0.2	
	2-CNGA09T304	●	●	●	●			2	Φ9.525	3.97	3.81	0.4	
	2-CNGA09T306	●	●	●	●			2	Φ9.525	3.97	3.81	0.6	
	2-CNGA09T308	●	●	●	●			2	Φ9.525	3.97	3.81	0.8	

Single-tip insert

	CNGA090402	●	●	●	●			1	Φ9.525	4.76	3.81	0.2	
	CNGA090404	●	●	●	●			1	Φ9.525	4.76	3.81	0.4	
	CNGA090408	●	●	●	●			1	Φ9.525	4.76	3.81	0.8	
	CNGA090412	●	●	●	●			1	Φ9.525	4.76	3.81	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


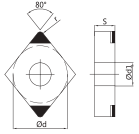

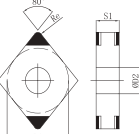
CN Rhombic 80°
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●			●	●		


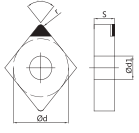
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


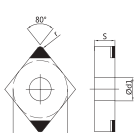

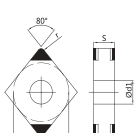
Multi-tip insert

	2-CNGA090402	●	●	●	●			2	Φ9.525	4.76	3.81	0.2	
	2-CNGA090404	●	●	●	●			2	Φ9.525	4.76	3.81	0.4	
	2-CNGA090408	●	●	●	●			2	Φ9.525	4.76	3.81	0.8	
	2-CNGA090412	●	●	●	●			2	Φ9.525	4.76	3.81	1.2	
	4-CNGA090402	●	●	●	●			4	Φ9.525	4.76	3.81	0.2	
	4-CNGA090404	●	●	●	●			4	Φ9.525	4.76	3.81	0.4	
	4-CNGA090408	●	●	●	●			4	Φ9.525	4.76	3.81	0.8	
	4-CNGA090412	●	●	●	●			4	Φ9.525	4.76	3.81	1.2	

Single-tip insert

	CNGA120402	●	●	●	●			1	Φ12.7	4.76	5.16	0.2	
	CNGA120404	●	●	●	●			1	Φ12.7	4.76	5.16	0.4	
	CNGA120408	●	●	●	●			1	Φ12.7	4.76	5.16	0.8	
	CNGA120412	●	●	●	●			1	Φ12.7	4.76	5.16	1.2	

Multi-tip insert

	2-CNGA120402	●	●	●	●			2	Φ12.7	4.76	5.16	0.2	
	2-CNGA120404	●	●	●	●			2	Φ12.7	4.76	5.16	0.4	
	2-CNGA120408	●	●	●	●			2	Φ12.7	4.76	5.16	0.8	
	2-CNGA120412	●	●	●	●			2	Φ12.7	4.76	5.16	1.2	
	4-CNGA120402	●	●	●	●			4	Φ12.7	4.76	5.16	0.2	
	4-CNGA120404	●	●	●	●			4	Φ12.7	4.76	5.16	0.4	
	4-CNGA120408	●	●	●	●			4	Φ12.7	4.76	5.16	0.8	
	4-CNGA120412	●	●	●	●			4	Φ12.7	4.76	5.16	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving

Miniature Tool


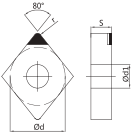
CN Rhombic 80°
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


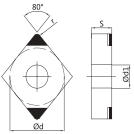
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


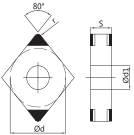
Single-tip insert

	CNGA160602	●	●	●	●			1	Φ15.875	6.35	6.35	0.2	
	CNGA160604	●	●	●	●			1	Φ15.875	6.35	6.35	0.4	
	CNGA160608	●	●	●	●			1	Φ15.875	6.35	6.35	0.8	
	CNGA160612	●	●	●	●			1	Φ15.875	6.35	6.35	1.2	


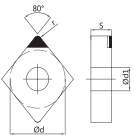
Multi-tip insert

	2-CNGA160602	●	●	●	●			2	Φ15.875	6.35	6.35	0.2	
	2-CNGA160604	●	●	●	●			2	Φ15.875	6.35	6.35	0.4	
	2-CNGA160608	●	●	●	●			2	Φ15.875	6.35	6.35	0.8	
	2-CNGA160612	●	●	●	●			2	Φ15.875	6.35	6.35	1.2	

Multi-tip insert

	4-CNGA160602	●	●	●	●			4	Φ15.875	6.35	6.35	0.2	
	4-CNGA160604	●	●	●	●			4	Φ15.875	6.35	6.35	0.4	
	4-CNGA160608	●	●	●	●			4	Φ15.875	6.35	6.35	0.8	
	4-CNGA160612	●	●	●	●			4	Φ15.875	6.35	6.35	1.2	

Single-tip insert

	CNGA190604	●	●	●	●			1	Φ19.05	6.35	7.94	0.4	
	CNGA190608	●	●	●	●			1	Φ19.05	6.35	7.94	0.8	
	CNGA190610	●	●	●	●			1	Φ19.05	6.35	7.94	1.0	
	CNGA190612	●	●	●	●			1	Φ19.05	6.35	7.94	1.2	
	CNGA190616	●	●	●	●			1	Φ19.05	6.35	7.94	1.6	
	CNGA190624	●	●	●	●			1	Φ19.05	6.35	7.94	2.4	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting , Grooving

Miniature Tool


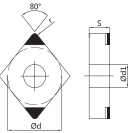

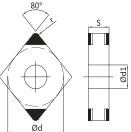
CN Rhombic 80°
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Multi-tip insert

	2-CNGA190604	●	●	●	●			●	●				
	2-CNGA190608	●	●	●	●			●	●				
	2-CNGA190610	●	●	●	●			●	●				
	2-CNGA190612	●	●	●	●			●	●				
	2-CNGA190616	●	●	●	●			●	●				
	2-CNGA190624	●	●	●	●			●	●				
	4-CNGA190604	●	●	●	●			●	●				
	4-CNGA190608	●	●	●	●			●	●				
	4-CNGA190610	●	●	●	●			●	●				
	4-CNGA190612	●	●	●	●			●	●				
	4-CNGA190616	●	●	●	●			●	●				
	4-CNGA190624	●	●	●	●			●	●				

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Treading
Parting, Grooving
Miniature Tool


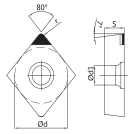
CC Rhombic 80°
Positive 7°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys				●				●	●			


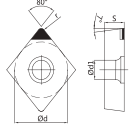
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						


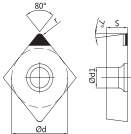
Single-tip insert

	CCMW03S102	●	●	●	●		1	Φ3.57	1.39	2.0	0.2	
	CCMW03S104	●	●	●	●		1	Φ3.57	1.39	2.0	0.4	
	CCMW04T002	●	●	●	●		1	Φ4.37	1.79	2.4	0.2	
	CCMW04T004	●	●	●	●		1	Φ4.37	1.79	2.4	0.4	


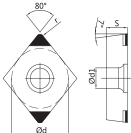
Single-tip insert

	CCGW050202	●	●	●	●		1	Φ5.56	2.38	2.4	0.2	
	CCGW050204	●	●	●	●		1	Φ5.56	2.38	2.4	0.4	
	CCGW050206	●	●	●	●		1	Φ5.56	2.38	2.4	0.6	


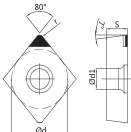
Single-tip insert

	CCGW060202	●	●	●	●		1	Φ6.35	2.38	2.8	0.2	
	CCGW060204	●	●	●	●		1	Φ6.35	2.38	2.8	0.4	
	CCGW060206	●	●	●	●		1	Φ6.35	2.38	2.8	0.6	
	CCGW060208	●	●	●	●		1	Φ6.35	2.38	2.8	0.8	

Multi-tip insert

	2-CCGW060202	●	●	●	●		2	Φ6.35	2.38	2.8	0.2	
	2-CCGW060204	●	●	●	●		2	Φ6.35	2.38	2.8	0.4	
	2-CCGW060206	●	●	●	●		2	Φ6.35	2.38	2.8	0.6	
	2-CCGW060208	●	●	●	●		2	Φ6.35	2.38	2.8	0.8	

Single-tip insert

	CCMW080202	●	●	●	●		1	Φ7.94	2.38	3.4	0.2	
	CCMW080204	●	●	●	●		1	Φ7.94	2.38	3.4	0.4	
	CCMW080206	●	●	●	●		1	Φ7.94	2.38	3.4	0.6	
	CCMW080208	●	●	●	●		1	Φ7.94	2.38	3.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting , Grooving

Miniature Tool


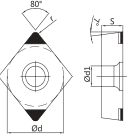
CC Rhombic 80°
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


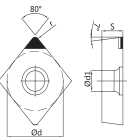
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


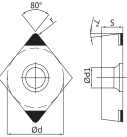
Multi-tip insert

	2-CCMW080202	●	●	●	●			●	●	2	Φ7.94	2.38	3.4	0.2	
	2-CCMW080204	●	●	●	●			●	●	2	Φ7.94	2.38	3.4	0.4	
	2-CCMW080206	●	●	●	●			●	●	2	Φ7.94	2.38	3.4	0.6	
	2-CCMW080208	●	●	●	●			●	●	2	Φ7.94	2.38	3.4	0.8	


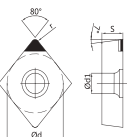
Single-tip insert

	CCGW09T302	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.2	
	CCGW09T304	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.4	
	CCGW09T306	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.6	
	CCGW09T308	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.8	


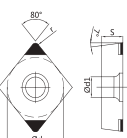
Multi-tip insert

	2-CCGW09T302	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.2	
	2-CCGW09T304	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.4	
	2-CCGW09T306	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.6	
	2-CCGW09T308	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.8	

Single-tip insert

	CCGW120402	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.2	
	CCGW120404	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.4	
	CCGW120406	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.6	
	CCGW120408	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.8	
	CCGW120412	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.2	

Multi-tip insert

	2-CCGW120402	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.2	
	2-CCGW120404	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.4	
	2-CCGW120406	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.6	
	2-CCGW120408	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.8	
	2-CCGW120412	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting, Grooving

Miniature Tool


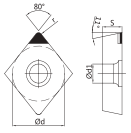
CP Rhombic 80°
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


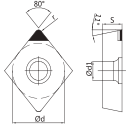
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


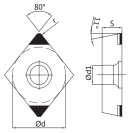
Single-tip insert

	CPGW050202	●	●	●	●			1	Φ5.56	2.38	2.4	0.2	
	CPGW050204	●	●	●	●			1	Φ5.56	2.38	2.4	0.4	
	CPGW050206	●	●	●	●			1	Φ5.56	2.38	2.4	0.6	


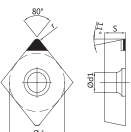
Single-tip insert

	CPGW060202	●	●	●	●			1	Φ6.35	2.38	2.8	0.2	
	CPGW060204	●	●	●	●			1	Φ6.35	2.38	2.8	0.4	
	CPGW060208	●	●	●	●			1	Φ6.35	2.38	2.8	0.8	


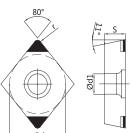
Multi-tip insert

	2-CPGW060202	●	●	●	●			2	Φ6.35	2.38	2.8	0.2	
	2-CPGW060204	●	●	●	●			2	Φ6.35	2.38	2.8	0.4	
	2-CPGW060208	●	●	●	●			2	Φ6.35	2.38	2.8	0.8	


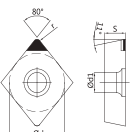
Single-tip insert

	CPGW080202	●	●	●	●			1	Φ7.94	2.38	2.8	0.2	
	CPGW080204	●	●	●	●			1	Φ7.94	2.38	2.8	0.4	
	CPGW080206	●	●	●	●			1	Φ7.94	2.38	2.8	0.6	
	CPGW080208	●	●	●	●			1	Φ7.94	2.38	2.8	0.8	

Multi-tip insert

	2-CPGW080202	●	●	●	●			2	Φ7.94	2.38	2.8	0.2	
	2-CPGW080204	●	●	●	●			2	Φ7.94	2.38	2.8	0.4	
	2-CPGW080206	●	●	●	●			2	Φ7.94	2.38	2.8	0.6	
	2-CPGW080208	●	●	●	●			2	Φ7.94	2.38	2.8	0.8	

Single-tip insert

	CPGW090302	●	●	●	●			1	Φ9.525	3.18	4.4	0.2	
	CPGW090304	●	●	●	●			1	Φ9.525	3.18	4.4	0.4	
	CPGW090306	●	●	●	●			1	Φ9.525	3.18	4.4	0.6	
	CPGW090308	●	●	●	●			1	Φ9.525	3.18	4.4	0.8	


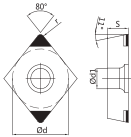
CP Rhombic 80°
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys			●				●	●		


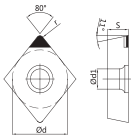
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						


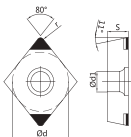
Multi-tip insert

	2-CPGW090302	●	●	●	●							
	2-CPGW090304	●	●	●	●							
	2-CPGW090306	●	●	●	●							
	2-CPGW090308	●	●	●	●							


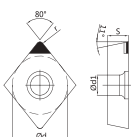
Single-tip insert

	CPGW09T302	●	●	●	●							
	CPGW09T304	●	●	●	●							
	CPGW09T306	●	●	●	●							
	CPGW09T308	●	●	●	●							

Multi-tip insert

	2-CPGW09T302	●	●	●	●							
	2-CPGW09T304	●	●	●	●							
	2-CPGW09T306	●	●	●	●							
	2-CPGW09T308	●	●	●	●							

Single-tip insert

	CPGW120402	●	●	●	●							
	CPGW120404	●	●	●	●							
	CPGW120406	●	●	●	●							
	CPGW120408	●	●	●	●							
	CPGW120410	●	●	●	●							
	CPGW120412	●	●	●	●							

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting, Grooving

Miniature Tool


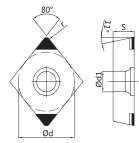
CP Rhombic 80°
Positive 11°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●					●	●		

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Multi-tip insert

	2-CPGW120402	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.2	
	2-CPGW120404	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.4	
	2-CPGW120406	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.6	
	2-CPGW120408	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.8	
	2-CPGW120410	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.0	
	2-CPGW120412	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting , Grooving

Miniature Tool


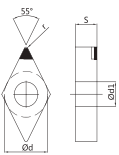
DN Rhombic 55°
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		


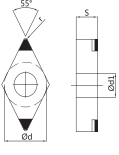
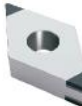
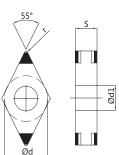
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


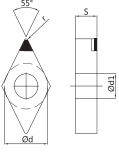
Single-tip insert

	DNGA110402	●	●	●	●			1	Φ9.525	4.76	3.8	0.2	
	DNGA110404	●	●	●	●			1	Φ9.525	4.76	3.8	0.4	
	DNGA110406	●	●	●	●			1	Φ9.525	4.76	3.8	0.6	
	DNGA110408	●	●	●	●			1	Φ9.525	4.76	3.8	0.8	

Multi-tip insert

	2-DNGA110402	●	●	●	●			2	Φ9.525	4.76	3.8	0.2	
	2-DNGA110404	●	●	●	●			2	Φ9.525	4.76	3.8	0.4	
	2-DNGA110406	●	●	●	●			2	Φ9.525	4.76	3.8	0.6	
	2-DNGA110408	●	●	●	●			2	Φ9.525	4.76	3.8	0.8	
	4-DNGA110402	●	●	●	●			4	Φ9.525	4.76	3.8	0.2	
	4-DNGA110404	●	●	●	●			4	Φ9.525	4.76	3.8	0.4	
	4-DNGA110406	●	●	●	●			4	Φ9.525	4.76	3.8	0.6	
	4-DNGA110408	●	●	●	●			4	Φ9.525	4.76	3.8	0.8	

Single-tip insert

	DNGA150402	●	●	●	●			1	Φ12.7	4.76	5.16	0.2	
	DNGA150404	●	●	●	●			1	Φ12.7	4.76	5.16	0.4	
	DNGA150406	●	●	●	●			1	Φ12.7	4.76	5.16	0.6	
	DNGA150408	●	●	●	●			1	Φ12.7	4.76	5.16	0.8	
	DNGA150410	●	●	●	●			1	Φ12.7	4.76	5.16	1.0	
	DNGA150412	●	●	●	●			1	Φ12.7	4.76	5.16	1.2	
	DNGA150416	●	●	●	●			1	Φ12.7	4.76	5.16	1.6	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving

Miniature Tool


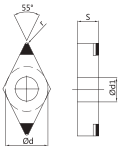

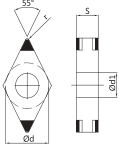
DN Rhombic 55° Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		


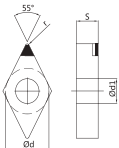
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Multi-tip insert

	2-DNGA150402	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	0.2	
	2-DNGA150404	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	0.4	
	2-DNGA150406	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	0.6	
	2-DNGA150408	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	0.8	
	2-DNGA150410	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	1.0	
	2-DNGA150412	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	1.2	
	2-DNGA150416	●	●	●	●			●	●	2	Φ12.7	4.76	5.16	1.6	
	4-DNGA150402	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	0.2	
	4-DNGA150404	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	0.4	
	4-DNGA150406	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	0.6	
	4-DNGA150408	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	0.8	
	4-DNGA150410	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	1.0	
	4-DNGA150412	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	1.2	
	4-DNGA150416	●	●	●	●			●	●	4	Φ12.7	4.76	5.16	1.6	

Single-tip insert

	DNGA150604	●	●	●	●			●	●	1	Φ12.7	6.35	5.16	0.4	
	DNGA150606	●	●	●	●			●	●	1	Φ12.7	6.35	5.16	0.6	
	DNGA150608	●	●	●	●			●	●	1	Φ12.7	6.35	5.16	0.8	
	DNGA150610	●	●	●	●			●	●	1	Φ12.7	6.35	5.16	1.0	
	DNGA150612	●	●	●	●			●	●	1	Φ12.7	6.35	5.16	1.2	
	DNGA150616	●	●	●	●			●	●	1	Φ12.7	6.35	5.16	1.6	


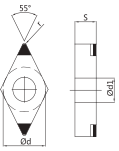
DN Rhombic 55°
Negative

H	Hard Materials	●	●	●								
K	Cast Iron		●	●								
S	Superalloys			●					●	●		


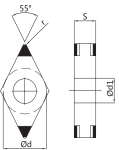
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						


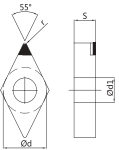
Multi-tip insert

	2-DNGA150604	●	●	●	●			2	Φ12.7	6.35	5.16	0.4	
	2-DNGA150606	●	●	●	●			2	Φ12.7	6.35	5.16	0.6	
	2-DNGA150608	●	●	●	●			2	Φ12.7	6.35	5.16	0.8	
	2-DNGA150610	●	●	●	●			2	Φ12.7	6.35	5.16	1.0	
	2-DNGA150612	●	●	●	●			2	Φ12.7	6.35	5.16	1.2	
	2-DNGA150616	●	●	●	●			2	Φ12.7	6.35	5.16	1.6	

Multi-tip insert

	4-DNGA150604	●	●	●	●			4	Φ12.7	6.35	5.16	0.4	
	4-DNGA150606	●	●	●	●			4	Φ12.7	6.35	5.16	0.6	
	4-DNGA150608	●	●	●	●			4	Φ12.7	6.35	5.16	0.8	
	4-DNGA150610	●	●	●	●			4	Φ12.7	6.35	5.16	1.0	
	4-DNGA150612	●	●	●	●			4	Φ12.7	6.35	5.16	1.2	
	4-DNGA150616	●	●	●	●			4	Φ12.7	6.35	5.16	1.6	

Single-tip insert

	DNGA190606	●	●	●	●			1	Φ15.875	6.35	6.35	0.6	
	DNGA190608	●	●	●	●			1	Φ15.875	6.35	6.35	0.8	
	DNGA190610	●	●	●	●			1	Φ15.875	6.35	6.35	1.0	
	DNGA190612	●	●	●	●			1	Φ15.875	6.35	6.35	1.2	
	DNGA190616	●	●	●	●			1	Φ15.875	6.35	6.35	1.6	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


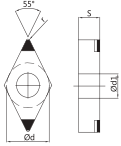

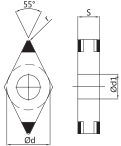
DN Rhombic 55°
Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys					●				●	●		

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Multi-tip insert

	2-DNGA190606	●	●	●	●			●	●					
	2-DNGA190608	●	●	●	●			●	●					
	2-DNGA190610	●	●	●	●			●	●					
	2-DNGA190612	●	●	●	●			●	●					
	2-DNGA190616	●	●	●	●			●	●					
	4-DNGA190606	●	●	●	●			●	●					
	4-DNGA190608	●	●	●	●			●	●					
	4-DNGA190610	●	●	●	●			●	●					
	4-DNGA190612	●	●	●	●			●	●					
	4-DNGA190616	●	●	●	●			●	●					

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting , Grooving
 Miniature Tool


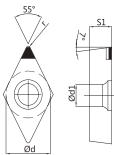
DC Rhombic 55°
Positive 7°

H	Hard Materials	●	●	●						
K	Cast Iron		●	●	●					
S	Superalloys				●			●	●	


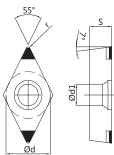
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


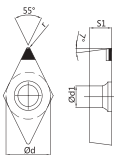
Single-tip insert

	DCGW070202	●	●	●	●			●	●	1	Φ6.35	2.38	2.8	0.2	
	DCGW070204	●	●	●	●			●	●	1	Φ6.35	2.38	2.8	0.4	
	DCGW070206	●	●	●	●			●	●	1	Φ6.35	2.38	2.8	0.6	
	DCGW070208	●	●	●	●			●	●	1	Φ6.35	2.3	2.8	0.8	


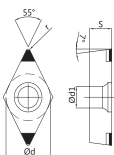
Multi-tip insert

	2-DCGW070202	●	●	●	●			●	●	2	Φ6.35	2.38	2.8	0.2	
	2-DCGW070204	●	●	●	●			●	●	2	Φ6.35	2.38	2.8	0.4	
	2-DCGW070206	●	●	●	●			●	●	2	Φ6.35	2.38	2.8	0.6	
	2-DCGW070208	●	●	●	●			●	●	2	Φ6.35	2.38	2.8	0.8	


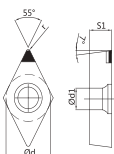
Single-tip insert

	DCGW090202	●	●	●	●			●	●	1	Φ7.94	2.38	3.4	0.2	
	DCGW090204	●	●	●	●			●	●	1	Φ7.94	2.38	3.4	0.4	
	DCGW090206	●	●	●	●			●	●	1	Φ7.94	2.38	3.4	0.6	
	DCGW090208	●	●	●	●			●	●	1	Φ7.94	2.38	3.4	0.8	

Multi-tip insert

	2-DCGW090202	●	●	●	●			●	●	2	Φ7.94	2.38	3.4	0.2	
	2-DCGW090204	●	●	●	●			●	●	2	Φ7.94	2.38	3.4	0.4	
	2-DCGW090206	●	●	●	●			●	●	2	Φ7.94	2.38	3.4	0.6	
	2-DCGW090208	●	●	●	●			●	●	2	Φ7.94	2.38	3.4	0.8	

Single-tip insert

	DCGW110302	●	●	●	●			●	●	1	Φ9.525	3.18	3.4	0.2	
	DCGW110304	●	●	●	●			●	●	1	Φ9.525	3.18	3.4	0.4	
	DCGW110306	●	●	●	●			●	●	1	Φ9.525	3.18	3.4	0.6	
	DCGW110308	●	●	●	●			●	●	1	Φ9.525	3.18	3.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


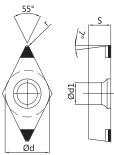
DC Rhombic 55°
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


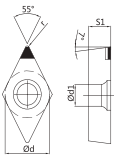
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						


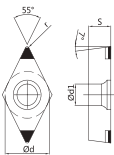
Multi-tip insert

	2-DCGW110302	●	●	●	●			2	Φ9.525	3.18	3.4	0.2	
	2-DCGW110304	●	●	●	●			2	Φ9.525	3.18	3.4	0.4	
	2-DCGW110306	●	●	●	●			2	Φ9.525	3.18	3.4	0.6	
	2-DCGW110308	●	●	●	●			2	Φ9.525	3.18	3.4	0.8	


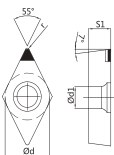
Single-tip insert

	DCGW11T302	●	●	●	●			1	Φ9.525	3.97	4.4	0.2	
	DCGW11T304	●	●	●	●			1	Φ9.525	3.97	4.4	0.4	
	DCGW11T306	●	●	●	●			1	Φ9.525	3.97	4.4	0.6	
	DCGW11T308	●	●	●	●			1	Φ9.525	3.97	4.4	0.8	


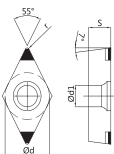
Multi-tip insert

	2-DCGW11T302	●	●	●	●			2	Φ9.525	3.97	4.4	0.2	
	2-DCGW11T304	●	●	●	●			2	Φ9.525	3.97	4.4	0.4	
	2-DCGW11T306	●	●	●	●			2	Φ9.525	3.97	4.4	0.6	
	2-DCGW11T308	●	●	●	●			2	Φ9.525	3.97	4.4	0.8	

Single-tip insert

	DCGW110402	●	●	●	●			1	Φ9.525	4.76	4.5	0.2	
	DCGW110404	●	●	●	●			1	Φ9.525	4.76	4.5	0.4	
	DCGW110406	●	●	●	●			1	Φ9.525	4.76	4.5	0.6	
	DCGW110408	●	●	●	●			1	Φ9.525	4.76	4.5	0.8	

Multi-tip insert

	2-DCGW110402	●	●	●	●			2	Φ9.525	4.76	3.4	0.2	
	2-DCGW110404	●	●	●	●			2	Φ9.525	4.76	4.5	0.4	
	2-DCGW110406	●	●	●	●			2	Φ9.525	4.76	4.5	0.6	
	2-DCGW110408	●	●	●	●			2	Φ9.525	4.76	4.5	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting , Grooving

Miniature Tool


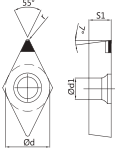
DC Rhombic 55°
Positive 7°

H	Hard Materials	●	●	●									
K	Cast Iron				●								
S	Superalloys							●	●				


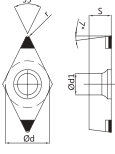
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Single-tip insert

	DCGW150404	●	●	●	●			●	●				
	DCGW150406	●	●	●	●			●	●				
	DCGW150408	●	●	●	●			●	●				
	DCGW150410	●	●	●	●			●	●				
	DCGW150412	●	●	●	●			●	●				
	DCGW150416	●	●	●	●			●	●				

Multi-tip insert

	2-DCGW150404	●	●	●	●			●	●				
	2-DCGW150406	●	●	●	●			●	●				
	2-DCGW150408	●	●	●	●			●	●				
	2-DCGW150410	●	●	●	●			●	●				
	2-DCGW150412	●	●	●	●			●	●				
	2-DCGW150416	●	●	●	●			●	●				

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


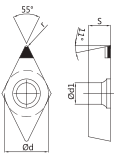
DP Rhombic 55°
Positive 11°

H	Hard Materials	●	●	●								
K	Cast Iron		●	●	●							
S	Superalloys				●				●	●		


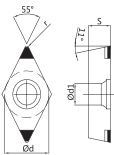
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


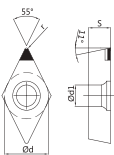
Single-tip insert

	DPGW070202	●	●	●	●			1	Φ6.35	2.38	2.8	0.2	
	DPGW070204	●	●	●	●			1	Φ6.35	2.38	2.8	0.4	
	DPGW070206	●	●	●	●			1	Φ6.35	2.38	2.8	0.6	
	DPGW070208	●	●	●	●			1	Φ6.35	2.38	2.8	0.8	


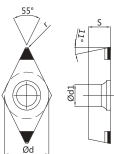
Multi-tip insert

	2-DPGW070202	●	●	●	●			2	Φ6.35	2.38	2.8	0.2	
	2-DPGW070204	●	●	●	●			2	Φ6.35	2.38	2.8	0.4	
	2-DPGW070206	●	●	●	●			2	Φ6.35	2.38	2.8	0.6	
	2-DPGW070208	●	●	●	●			2	Φ6.35	2.38	2.8	0.8	


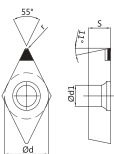
Single-tip insert

	DPGW090202	●	●	●	●			1	Φ7.94	2.38	3.4	0.2	
	DPGW090204	●	●	●	●			1	Φ7.94	2.38	3.4	0.4	
	DPGW090206	●	●	●	●			1	Φ7.94	2.38	3.4	0.6	
	DPGW090208	●	●	●	●			1	Φ7.94	2.38	3.4	0.8	

Multi-tip insert

	2-DPGW090202	●	●	●	●			2	Φ7.94	2.38	3.4	0.2	
	2-DPGW090204	●	●	●	●			2	Φ7.94	2.38	3.4	0.4	
	2-DPGW090206	●	●	●	●			2	Φ7.94	2.38	3.4	0.6	
	2-DPGW090208	●	●	●	●			2	Φ7.94	2.38	3.4	0.8	

Single-tip insert

	DPGW110302	●	●	●	●			1	Φ9.525	3.18	3.4	0.2	
	DPGW110304	●	●	●	●			1	Φ9.525	3.18	3.4	0.4	
	DPGW110306	●	●	●	●			1	Φ9.525	3.18	3.4	0.6	
	DPGW110308	●	●	●	●			1	Φ9.525	3.18	3.4	0.8	

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool


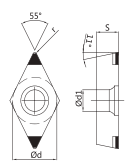
DP Rhombic 55°
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


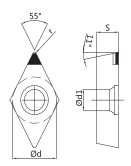
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


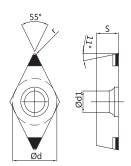
Multi-tip insert

	2-DPGW110302	●	●	●	●			●	●	2	Φ9.525	3.18	3.4	0.2	
	2-DPGW110304	●	●	●	●			●	●	2	Φ9.525	3.18	3.4	0.4	
	2-DPGW110306	●	●	●	●			●	●	2	Φ9.525	3.18	3.4	0.6	
	2-DPGW110308	●	●	●	●			●	●	2	Φ9.525	3.18	3.4	0.8	


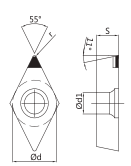
Single-tip insert

	DPGW11T302	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.2	
	DPGW11T304	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.4	
	DPGW11T306	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.6	
	DPGW11T308	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.8	

Multi-tip insert

	2-DPGW11T302	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.2	
	2-DPGW11T304	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.4	
	2-DPGW11T306	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.6	
	2-DPGW11T308	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.8	

Single-tip insert

	DPGW110402	●	●	●	●			●	●	1	Φ9.525	4.76	4.5	0.2	
	DPGW110404	●	●	●	●			●	●	1	Φ9.525	4.76	4.5	0.4	
	DPGW110406	●	●	●	●			●	●	1	Φ9.525	4.76	4.5	0.6	
	DPGW110408	●	●	●	●			●	●	1	Φ9.525	4.76	4.5	0.8	

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Treading
Parting / Grooving
Miniature Tool


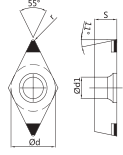
DP Rhombic 55°
Positive 11°

H	Hard Materials	●	●	●						
K	Cast Iron		●	●	●					
S	Superalloys				●			●	●	


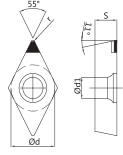
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


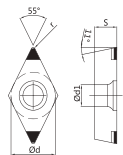
Multi-tip insert

	2-DPGW110402	●	●	●	●			2	Φ9.525	4.76	3.4	0.2	
	2-DPGW110404	●	●	●	●			2	Φ9.525	4.76	3.4	0.4	
	2-DPGW110406	●	●	●	●			2	Φ9.525	4.76	3.4	0.6	
	2-DPGW110408	●	●	●	●			2	Φ9.525	4.76	3.4	0.8	

Single-tip insert

	DPGW150404	●	●	●	●			1	Φ12.7	4.76	5.5	0.4	
	DPGW150406	●	●	●	●			1	Φ12.7	4.76	5.5	0.6	
	DPGW150408	●	●	●	●			1	Φ12.7	4.76	5.5	0.8	
	DPGW150410	●	●	●	●			1	Φ12.7	4.76	5.5	1.0	
	DPGW150412	●	●	●	●			1	Φ12.7	4.76	5.5	1.2	
	DPGW150416	●	●	●	●			1	Φ12.7	4.76	5.5	1.6	

Multi-tip insert

	2-DPGW150404	●	●	●	●			2	Φ12.7	4.76	5.5	0.4	
	2-DPGW150406	●	●	●	●			2	Φ12.7	4.76	5.5	0.6	
	2-DPGW150408	●	●	●	●			2	Φ12.7	4.76	5.5	0.8	
	2-DPGW150410	●	●	●	●			2	Φ12.7	4.76	5.5	1.0	
	2-DPGW150412	●	●	●	●			2	Φ12.7	4.76	5.5	1.2	
	2-DPGW150416	●	●	●	●			2	Φ12.7	4.76	5.5	1.6	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


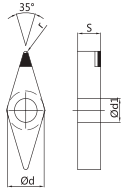
VN Rhombic 35°
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys				●			●	●		


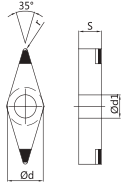

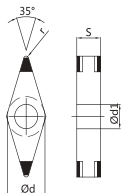
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Single-tip insert

	VNGA160402	●	●	●	●			●	●	1	Φ9.525	4.76	3.8	0.2	
	VNGA160404	●	●	●	●			●	●	1	Φ9.525	4.76	3.8	0.4	
	VNGA160406	●	●	●	●			●	●	1	Φ9.525	4.76	3.8	0.6	
	VNGA160408	●	●	●	●			●	●	1	Φ9.525	4.76	3.8	0.8	
	VNGA160410	●	●	●	●			●	●	1	Φ9.525	4.76	3.8	1.0	
	VNGA160412	●	●	●	●			●	●	1	Φ9.525	4.76	3.8	1.2	

Multi-tip insert

	2-VNGA160402	●	●	●	●			●	●	2	Φ9.525	4.76	3.8	0.2	
	2-VNGA160404	●	●	●	●			●	●	2	Φ9.525	4.76	3.8	0.4	
	2-VNGA160406	●	●	●	●			●	●	2	Φ9.525	4.76	3.8	0.6	
	2-VNGA160408	●	●	●	●			●	●	2	Φ9.525	4.76	3.8	0.8	
	2-VNGA160410	●	●	●	●			●	●	2	Φ9.525	4.76	3.8	1.0	
	2-VNGA160412	●	●	●	●			●	●	2	Φ9.525	4.76	3.8	1.2	
	4-VNGA160402	●	●	●	●			●	●	4	Φ9.525	4.76	3.8	0.2	
	4-VNGA160404	●	●	●	●			●	●	4	Φ9.525	4.76	3.8	0.4	
	4-VNGA160406	●	●	●	●			●	●	4	Φ9.525	4.76	3.8	0.6	
	4-VNGA160408	●	●	●	●			●	●	4	Φ9.525	4.76	3.8	0.8	
	4-VNGA160410	●	●	●	●			●	●	4	Φ9.525	4.76	3.8	1.0	
	4-VNGA160412	●	●	●	●			●	●	4	Φ9.525	4.76	3.8	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving


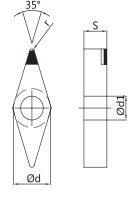

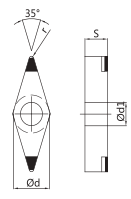

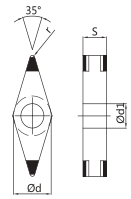
Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting , Grooving
 Miniature Tool

VN Rhombic 35°
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile	
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700							
Single-tip insert														
	VNGA220410	●	●	●	●		●	●	1	Φ12.7	4.76	5.16	1.0	
	VNGA220412	●	●	●	●		●	●	1	Φ12.7	4.76	5.16	1.2	
	VNGA220416	●	●	●	●		●	●	1	Φ12.7	4.76	5.16	1.6	
	VNGA220404	●	●	●	●		●	●	1	Φ12.7	4.76	5.16	0.4	
	VNGA220408	●	●	●	●		●	●	1	Φ12.7	4.76	5.16	0.8	
Multi-tip insert														
	2-VNGA220404	●	●	●	●		●	●	2	Φ12.7	4.76	5.16	0.4	
	2-VNGA220408	●	●	●	●		●	●	2	Φ12.7	4.76	5.16	0.8	
	2-VNGA220410	●	●	●	●		●	●	2	Φ12.7	4.76	5.16	1.0	
	2-VNGA220412	●	●	●	●		●	●	2	Φ12.7	4.76	5.16	1.2	
	2-VNGA220416	●	●	●	●		●	●	2	Φ12.7	4.76	5.16	1.6	
	4-VNGA220404	●	●	●	●		●	●	4	Φ12.7	4.76	5.16	0.4	
	4-VNGA220408	●	●	●	●		●	●	4	Φ12.7	4.76	5.16	0.8	
	4-VNGA220410	●	●	●	●		●	●	4	Φ12.7	4.76	5.16	1.0	
	4-VNGA220412	●	●	●	●		●	●	4	Φ12.7	4.76	5.16	1.2	
	4-VNGA220416	●	●	●	●		●	●	4	Φ12.7	4.76	5.16	1.6	

VB Rhombic 35°
Positive 5°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys				●			●	●		

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Single-tip insert

	VBGW110302	●	●	●	●			●	●	1	Φ6.35	3.18	2.8	0.2	
	VBGW110304	●	●	●	●			●	●	1	Φ6.35	3.18	2.8	0.4	
	VBGW110306	●	●	●	●			●	●	1	Φ6.35	3.18	2.8	0.6	
	VBGW110308	●	●	●	●			●	●	1	Φ6.35	3.18	2.8	0.8	

Multi-tip insert

	2-VBGW110302	●	●	●	●			●	●	2	Φ6.35	3.18	2.8	0.2	
	2-VBGW110304	●	●	●	●			●	●	2	Φ6.35	3.18	2.8	0.4	
	2-VBGW110306	●	●	●	●			●	●	2	Φ6.35	3.18	2.8	0.6	
	2-VBGW110308	●	●	●	●			●	●	2	Φ6.35	3.18	2.8	0.8	

Single-tip insert

	VBGW160404	●	●	●	●			●	●	1	Φ9.525	4.76	4.4	0.4	
	VBGW160406	●	●	●	●			●	●	1	Φ9.525	4.76	4.4	0.6	
	VBGW160408	●	●	●	●			●	●	1	Φ9.525	4.76	4.4	0.8	
	VBGW160410	●	●	●	●			●	●	1	Φ9.525	4.76	4.4	1.0	
	VBGW160412	●	●	●	●			●	●	1	Φ9.525	4.76	4.4	1.2	

Multi-tip insert

	2-VBGW160404	●	●	●	●			●	●	2	Φ9.525	4.76	4.4	0.4	
	2-VBGW160406	●	●	●	●			●	●	2	Φ9.525	4.76	4.4	0.6	
	2-VBGW160408	●	●	●	●			●	●	2	Φ9.525	4.76	4.4	0.8	
	2-VBGW160410	●	●	●	●			●	●	2	Φ9.525	4.76	4.4	1.0	
	2-VBGW160412	●	●	●	●			●	●	2	Φ9.525	4.76	4.4	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting / Grooving

Miniature Tool


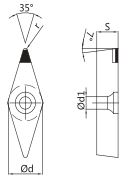
VC Rhombic 35°
Positive 7°

H	Hard Materials	●	●	●						
K	Cast Iron		●	●	●					
S	Superalloys					●			●	●


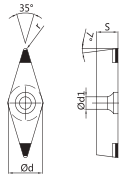
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


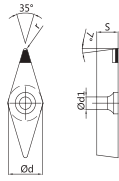
Single-tip insert

	VCGW080202	●	●	●	●			1	Φ4.76	2.38	2.3	0.2	
	VCGW080204	●	●	●	●			1	Φ4.76	2.38	2.3	0.4	
	VCGW080206	●	●	●	●			1	Φ4.76	2.38	2.3	0.6	
	VCGW080208	●	●	●	●			1	Φ4.76	2.38	2.3	0.8	


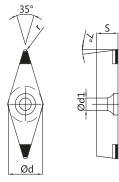
Multi-tip insert

	2-VCGW080202	●	●	●	●			2	Φ4.76	2.38	2.3	0.2	
	2-VCGW080204	●	●	●	●			2	Φ4.76	2.38	2.3	0.4	
	2-VCGW080206	●	●	●	●			2	Φ4.76	2.38	2.3	0.6	
	2-VCGW080208	●	●	●	●			2	Φ4.76	2.38	2.3	0.8	


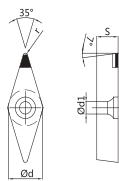
Single-tip insert

	VCGW110302	●	●	●	●			1	Φ6.35	3.18	2.8	0.2	
	VCGW110304	●	●	●	●			1	Φ6.35	3.18	2.8	0.4	
	VCGW110306	●	●	●	●			1	Φ6.35	3.18	2.8	0.6	
	VCGW110308	●	●	●	●			1	Φ6.35	3.18	2.8	0.8	

Multi-tip insert

	2-VCGW110302	●	●	●	●			2	Φ6.35	3.18	2.8	0.2	
	2-VCGW110304	●	●	●	●			2	Φ6.35	3.18	2.8	0.4	
	2-VCGW110306	●	●	●	●			2	Φ6.35	3.18	2.8	0.6	
	2-VCGW110308	●	●	●	●			2	Φ6.35	3.18	2.8	0.8	

Single-tip insert

	VCGW160404	●	●	●	●			1	Φ9.525	4.67	4.4	0.4	
	VCGW160406	●	●	●	●			1	Φ9.525	4.67	4.4	0.6	
	VCGW160408	●	●	●	●			1	Φ9.525	4.67	4.4	0.8	
	VCGW160410	●	●	●	●			1	Φ9.525	4.67	4.4	1.0	
	VCGW160412	●	●	●	●			1	Φ9.525	4.67	4.4	1.2	


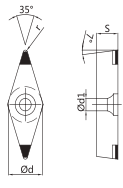
VC Rhombic 35°
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●				●	●	


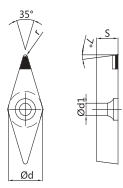
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


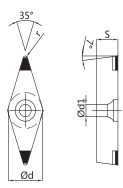
Multi-tip insert

	2-VCGW160404	●	●	●	●			●	●					
	2-VCGW160406	●	●	●	●			●	●					
	2-VCGW160408	●	●	●	●			●	●					
	2-VCGW160410	●	●	●	●			●	●					
	2-VCGW160412	●	●	●	●			●	●					

Single-tip insert

	VCMW220512	●	●	●	●			●	●					
	VCMW220516	●	●	●	●			●	●					
	VCMW220520	●	●	●	●			●	●					

Multi-tip insert

	2-VCMW220512	●	●	●	●			●	●					
	2-VCMW220516	●	●	●	●			●	●					
	2-VCMW220520	●	●	●	●			●	●					

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


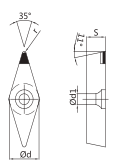
VP Rhombic 35°
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys				●			●	●		


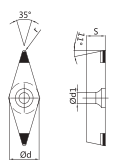
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


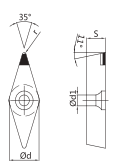
Single-tip insert

	VPGW080202	●	●	●	●			1	Φ4.76	2.38	2.3	0.2	
	VPGW080204	●	●	●	●			1	Φ4.76	2.38	2.3	0.4	
	VPGW080208	●	●	●	●			1	Φ4.76	2.38	2.3	0.8	


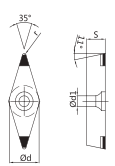
Multi-tip insert

	2-VPGW080204	●	●	●	●			2	Φ4.76	2.38	2.3	0.4	
	2-VPGW080208	●	●	●	●			2	Φ4.76	2.38	2.3	0.8	

Single-tip insert

	VPGW110302	●	●	●	●			1	Φ6.35	3.18	2.8	0.2	
	VPGW110304	●	●	●	●			1	Φ6.35	3.18	2.8	0.4	
	VPGW110306	●	●	●	●			1	Φ6.35	3.18	2.8	0.6	
	VPGW110308	●	●	●	●			1	Φ6.35	3.18	2.8	0.8	

Multi-tip insert

	2-VPGW110302	●	●	●	●			2	Φ6.35	3.18	2.8	0.2	
	2-VPGW110304	●	●	●	●			2	Φ6.35	3.18	2.8	0.4	
	2-VPGW110306	●	●	●	●			2	Φ6.35	3.18	2.8	0.6	
	2-VPGW110308	●	●	●	●			2	Φ6.35	3.18	2.8	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

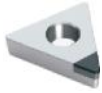
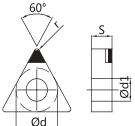
TN Triangular 60° Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	

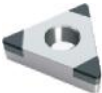
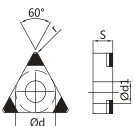
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						


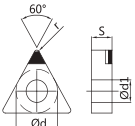
Single-tip insert

	TNGA110302	●	●	●	●			1	Φ6.35	3.18	2.3	0.2	
	TNGA110304	●	●	●	●			1	Φ6.35	3.18	2.3	0.4	
	TNGA110306	●	●	●	●			1	Φ6.35	3.18	2.3	0.6	
	TNGA110308	●	●	●	●			1	Φ6.35	3.18	2.3	0.8	


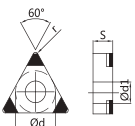
Multi-tip insert

	3-TNGA110302	●	●	●	●			3	Φ6.35	3.18	2.3	0.2	
	3-TNGA110304	●	●	●	●			3	Φ6.35	3.18	2.3	0.4	
	3-TNGA110306	●	●	●	●			3	Φ6.35	3.18	2.3	0.6	
	3-TNGA110308	●	●	●	●			3	Φ6.35	3.18	2.3	0.8	

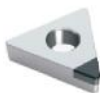
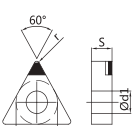
Single-tip insert

	TNGA130304	●	●	●	●			1	Φ7.95	3.18	3.15	0.4	
	TNGA130306	●	●	●	●			1	Φ7.95	3.18	3.15	0.6	
	TNGA130308	●	●	●	●			1	Φ7.95	3.18	3.15	0.8	
	TNGA130312	●	●	●	●			1	Φ7.95	3.18	3.15	1.2	

Multi-tip insert

	3-TNGA130304	●	●	●	●			3	Φ7.95	3.18	3.15	0.4	
	3-TNGA130306	●	●	●	●			3	Φ7.95	3.18	3.15	0.6	
	3-TNGA130308	●	●	●	●			3	Φ7.95	3.18	3.15	0.8	
	3-TNGA130312	●	●	●	●			3	Φ7.95	3.18	3.15	1.2	

Single-tip insert

	TNGA160404	●	●	●	●			1	Φ9.525	4.46	3.8	0.4	
	TNGA160406	●	●	●	●			1	Φ9.525	4.76	3.8	0.6	
	TNGA160408	●	●	●	●			1	Φ9.525	4.76	3.8	0.8	
	TNGA160410	●	●	●	●			1	Φ9.525	4.76	3.8	1.0	
	TNGA160412	●	●	●	●			1	Φ9.525	4.76	3.8	1.2	
	TNGA160416	●	●	●	●			1	Φ9.525	4.76	3.8	1.6	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving

Miniature Tool

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

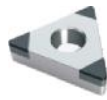
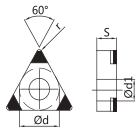
TN Triangular 60° Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys				●			●	●		

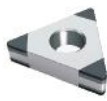
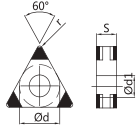
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						

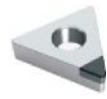
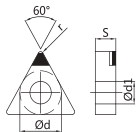
Multi-tip insert

	3-TNGA160404	●	●	●	●	●	3	Φ9.525	4.76	3.8	0.4	
	3-TNGA160406	●	●	●	●	●	3	Φ9.525	4.76	3.8	0.6	
	3-TNGA160408	●	●	●	●	●	3	Φ9.525	4.76	3.8	0.8	
	3-TNGA160410	●	●	●	●	●	3	Φ9.525	4.76	3.8	1.0	
	3-TNGA160412	●	●	●	●	●	3	Φ9.525	4.76	3.8	1.2	
	3-TNGA160416	●	●	●	●	●	3	Φ9.525	4.76	3.8	1.6	

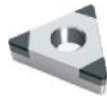
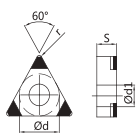
Multi-tip insert

	6-TNGA160404	●	●	●	●	●	6	Φ9.525	4.76	3.8	0.4	
	6-TNGA160406	●	●	●	●	●	6	Φ9.525	4.76	3.8	0.6	
	6-TNGA160408	●	●	●	●	●	6	Φ9.525	4.76	3.8	0.8	
	6-TNGA160410	●	●	●	●	●	6	Φ9.525	4.76	3.8	1.0	
	6-TNGA160412	●	●	●	●	●	6	Φ9.525	4.76	3.8	1.2	
	6-TNGA160416	●	●	●	●	●	6	Φ9.525	4.76	3.8	1.6	

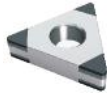
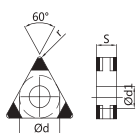
Single-tip insert

	TNGA220408	●	●	●	●	●	1	Φ12.7	4.76	5.16	0.8	
	TNGA220412	●	●	●	●	●	1	Φ12.7	4.76	5.16	1.2	
	TNGA220416	●	●	●	●	●	1	Φ12.7	4.76	5.16	1.6	

Multi-tip insert

	3-TNGA220408	●	●	●	●	●	3	Φ12.7	4.76	5.16	0.8	
	3-TNGA220412	●	●	●	●	●	3	Φ12.7	4.76	5.16	1.2	
	3-TNGA220416	●	●	●	●	●	3	Φ12.7	4.76	5.16	1.6	

Multi-tip insert

	6-TNGA220408	●	●	●	●	●	6	Φ12.7	4.76	5.16	0.8	
	6-TNGA220412	●	●	●	●	●	6	Φ12.7	4.76	5.16	1.2	
	6-TNGA220416	●	●	●	●	●	6	Φ12.7	4.76	5.16	1.6	

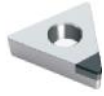
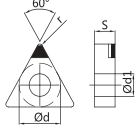
TN Triangular 60° Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●				●	●	


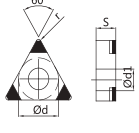
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

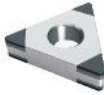
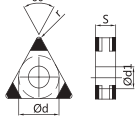
Single-tip insert

	TNGA270608	●	●	●	●			1	Φ15.875	6.35	6.35	0.8	
	TNGA270610	●	●	●	●			1	Φ15.875	6.35	6.35	1.0	
	TNGA270612	●	●	●	●			1	Φ15.875	6.35	6.35	1.2	
	TNGA270616	●	●	●	●			1	Φ15.875	6.35	6.35	1.6	
	TNGA270620	●	●	●	●			1	Φ15.875	6.35	6.35	2.0	

Multi-tip insert

	3-TNGA270608	●	●	●	●			3	Φ15.875	6.35	6.35	0.8	
	3-TNGA270610	●	●	●	●			3	Φ15.875	6.35	6.35	1.0	
	3-TNGA270612	●	●	●	●			3	Φ15.875	6.35	6.35	1.2	
	3-TNGA270616	●	●	●	●			3	Φ15.875	6.35	6.35	1.6	
	3-TNGA270620	●	●	●	●			3	Φ15.875	6.35	6.35	2.0	

Multi-tip insert

	6-TNGA270608	●	●	●	●			6	Φ15.875	6.35	6.35	0.8	
	6-TNGA270610	●	●	●	●			6	Φ15.875	6.35	6.35	1.0	
	6-TNGA270612	●	●	●	●			6	Φ15.875	6.35	6.35	1.2	
	6-TNGA270616	●	●	●	●			6	Φ15.875	6.35	6.35	1.6	
	6-TNGA270620	●	●	●	●			6	Φ15.875	6.35	6.35	2.0	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting , Grooving
 Miniature Tool


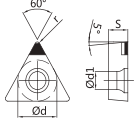
TB Triangular 60°
Positive 5°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys				●				●	●			

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Single-tip insert

	TBGW060102	●	●	●	●			1	Φ3.97	1.59	2.2	0.2	
	TBGW060104	●	●	●	●			1	Φ3.97	1.59	2.2	0.4	


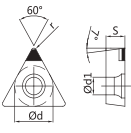
TC Triangular 60°
Positive 7°

H	Hard Materials	●	●	●									
K	Cast Iron			●									
S	Superalloys							●	●				


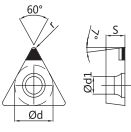
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


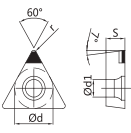
Single-tip insert

	TCGW060102	●	●	●	●			1	Φ3.97	1.59	2.2	0.2	
	TCGW060104	●	●	●	●			1	Φ3.97	1.59	2.2	0.4	


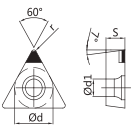
Single-tip insert

	TCGW06T102	●	●	●	●			1	Φ3.97	1.98	2.2	0.2	
	TCGW06T104	●	●	●	●			1	Φ3.97	1.98	2.2	0.4	


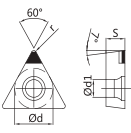
Single-tip insert

	TCGW060202	●	●	●	●			1	Φ3.97	2.38	2.2	0.2	
	TCGW060204	●	●	●	●			1	Φ3.97	2.38	2.2	0.4	

Single-tip insert

	TCGW080202	●	●	●	●			1	Φ4.76	2.38	2.3	0.2	
	TCGW080204	●	●	●	●			1	Φ4.76	2.38	2.3	0.4	
	TCGW080206	●	●	●	●			1	Φ4.76	2.38	2.3	0.6	

Single-tip insert

	TCGW090202	●	●	●	●			1	Φ5.56	2.38	2.5	0.2	
	TCGW090204	●	●	●	●			1	Φ5.56	2.38	2.5	0.4	
	TCGW090206	●	●	●	●			1	Φ5.56	2.38	2.5	0.6	
	TCGW090208	●	●	●	●			1	Φ5.56	2.38	2.5	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting / Grooving

Miniature Tool

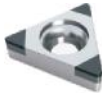
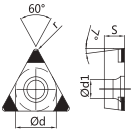
TC Triangular 60°
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


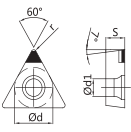
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


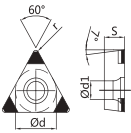
Multi-tip insert

	3-TCGW090202	●	●	●	●			3	Φ5.56	2.38	2.5	0.2	
	3-TCGW090204	●	●	●	●			3	Φ5.56	2.38	2.5	0.4	
	3-TCGW090206	●	●	●	●			3	Φ5.56	2.38	2.5	0.6	
	3-TCGW090208	●	●	●	●			3	Φ5.56	2.38	2.5	0.8	


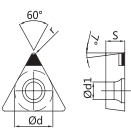
Single-tip insert

	TCGW110202	●	●	●	●			1	Φ6.35	2.38	2.8	0.2	
	TCGW110204	●	●	●	●			1	Φ6.35	2.38	2.8	0.4	
	TCGW110206	●	●	●	●			1	Φ6.35	2.38	2.8	0.6	
	TCGW110208	●	●	●	●			1	Φ6.35	2.38	2.8	0.8	


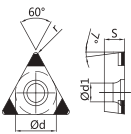
Multi-tip insert

	3-TCGW110202	●	●	●	●			3	Φ6.35	2.38	2.8	0.2	
	3-TCGW110204	●	●	●	●			3	Φ6.35	2.38	2.8	0.4	
	3-TCGW110206	●	●	●	●			3	Φ6.35	2.38	2.8	0.6	
	3-TCGW110208	●	●	●	●			3	Φ6.35	2.38	2.8	0.8	

Single-tip insert

	TCGW110302	●	●	●	●			1	Φ6.35	3.18	2.8	0.2	
	TCGW110304	●	●	●	●			1	Φ6.35	3.18	2.8	0.4	
	TCGW110306	●	●	●	●			1	Φ6.35	3.18	2.8	0.6	
	TCGW110308	●	●	●	●			1	Φ6.35	3.18	2.8	0.8	

Multi-tip insert

	3-TCGW110302	●	●	●	●			3	Φ6.35	3.18	2.8	0.2	
	3-TCGW110304	●	●	●	●			3	Φ6.35	3.18	2.8	0.4	
	3-TCGW110306	●	●	●	●			3	Φ6.35	3.18	2.8	0.6	
	3-TCGW110308	●	●	●	●			3	Φ6.35	3.18	2.8	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

TC Triangular 60°
Positive 7°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●				●	●			

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Single-tip insert

	TCGW11T304	●	●	●	●			1	Φ6.35	3.97	2.8	0.4	
	TCGW11T306	●	●	●	●			1	Φ6.35	3.97	2.8	0.6	
	TCGW11T308	●	●	●	●			1	Φ6.35	3.97	2.8	0.8	

Single-tip insert

	TCGW16T304	●	●	●	●			1	Φ9.525	3.97	4.4	0.4	
	TCGW16T306	●	●	●	●			1	Φ9.525	3.97	4.4	0.6	
	TCGW16T308	●	●	●	●			1	Φ9.525	3.97	4.4	0.8	
	TCGW16T310	●	●	●	●			1	Φ9.525	3.97	4.4	1.0	
	TCGW16T312	●	●	●	●			1	Φ9.525	3.97	4.4	1.2	

Multi-tip insert

	3-TCGW16T304	●	●	●	●			3	Φ9.525	3.97	4.4	0.4	
	3-TCGW16T306	●	●	●	●			3	Φ9.525	3.97	4.4	0.6	
	3-TCGW16T308	●	●	●	●			3	Φ9.525	3.97	4.4	0.8	
	3-TCGW16T310	●	●	●	●			3	Φ9.525	3.97	4.4	1.0	
	3-TCGW16T312	●	●	●	●			3	Φ9.525	3.97	4.4	1.2	

Single-tip insert

	TCGW160404	●	●	●	●			1	Φ9.525	4.76	4.4	0.4	
	TCGW160406	●	●	●	●			1	Φ9.525	4.76	4.4	0.6	
	TCGW160408	●	●	●	●			1	Φ9.525	4.76	4.4	0.8	
	TCGW160410	●	●	●	●			1	Φ9.525	4.76	4.4	1.0	
	TCGW160412	●	●	●	●			1	Φ9.525	4.76	4.4	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting / Grooving


Miniature Tool

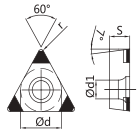
Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting , Grooving
 Miniature Tool

TC Triangular 60°
Positive 7°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys				●				●	●			

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile	
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700							
Multi-tip insert														
	3-TCGW160404	●	●	●	●			●	●	3	Φ9.525	4.76	4.4	0.4
	3-TCGW160406	●	●	●	●			●	●	3	Φ9.525	4.76	4.4	0.6
	3-TCGW160408	●	●	●	●			●	●	3	Φ9.525	4.76	4.4	0.8
	3-TCGW160410	●	●	●	●			●	●	3	Φ9.525	4.76	4.4	1.0
	3-TCGW160412	●	●	●	●			●	●	3	Φ9.525	4.76	4.4	1.2



TP Triangular 60°
Positive 11°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●					●	●		

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						

Single-tip insert

	TPGW080202	●	●	●	●		1	Φ4.76	2.38	2.4	0.2	
	TPGW080204	●	●	●	●		1	Φ4.76	2.38	2.4	0.4	
	TPGW080206	●	●	●	●		1	Φ4.76	2.38	2.4	0.6	

Single-tip insert

	TPGW090202	●	●	●	●		1	Φ5.56	2.38	2.8	0.2	
	TPGW090204	●	●	●	●		1	Φ5.56	2.38	2.8	0.4	
	TPGW090206	●	●	●	●		1	Φ5.56	2.38	2.8	0.6	
	TPGW090208	●	●	●	●		1	Φ5.56	2.38	2.8	0.8	

Single-tip insert

	TPGW110202	●	●	●	●		1	Φ6.35	2.38	2.8	0.2	
	TPGW110204	●	●	●	●		1	Φ6.35	2.38	2.8	0.4	
	TPGW110206	●	●	●	●		1	Φ6.35	2.38	2.8	0.6	
	TPGW110208	●	●	●	●		1	Φ6.35	2.38	2.8	0.8	

Multi-tip insert

	3-TPGW110202	●	●	●	●		3	Φ6.35	2.38	2.8	0.2	
	3-TPGW110204	●	●	●	●		3	Φ6.35	2.38	2.8	0.4	
	3-TPGW110206	●	●	●	●		3	Φ6.35	2.38	2.8	0.6	
	3-TPGW110208	●	●	●	●		3	Φ6.35	2.38	2.8	0.8	

Single-tip insert

	TPGW110302	●	●	●	●		1	Φ6.35	3.18	2.8	0.2	
	TPGW110304	●	●	●	●		1	Φ6.35	3.18	2.8	0.4	
	TPGW110306	●	●	●	●		1	Φ6.35	3.18	2.8	0.6	
	TPGW110308	●	●	●	●		1	Φ6.35	3.18	2.8	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

TP Triangular 60°
Positive 11°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●				●	●			

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Multi-tip insert

	3-TPGW110302	●	●	●	●			3	Φ6.35	3.18	2.8	0.2	
	3-TPGW110304	●	●	●	●			3	Φ6.35	3.18	2.8	0.4	
	3-TPGW110306	●	●	●	●			3	Φ6.35	3.18	2.8	0.6	
	3-TPGW110308	●	●	●	●			3	Φ6.35	3.18	2.8	0.8	

Single-tip insert

	TPGW160304	●	●	●	●			1	Φ9.525	3.18	4.4	0.4	
	TPGW160306	●	●	●	●			1	Φ9.525	3.18	4.4	0.6	
	TPGW160308	●	●	●	●			1	Φ9.525	3.18	4.4	0.8	
	TPGW160312	●	●	●	●			1	Φ9.525	3.18	4.4	1.2	

Multi-tip insert

	3-TPGW160304	●	●	●	●			3	Φ9.525	3.18	4.4	0.4	
	3-TPGW160306	●	●	●	●			3	Φ9.525	3.18	4.4	0.6	
	3-TPGW160308	●	●	●	●			3	Φ9.525	3.18	4.4	0.8	
	3-TPGW160312	●	●	●	●			3	Φ9.525	3.18	4.4	1.2	

Single-tip insert

	TPGW16T304	●	●	●	●			1	Φ9.525	3.97	4.4	0.4	
	TPGW16T306	●	●	●	●			1	Φ9.525	3.97	4.4	0.6	
	TPGW16T308	●	●	●	●			1	Φ9.525	3.97	4.4	0.8	
	TPGW16T312	●	●	●	●			1	Φ9.525	3.97	4.4	1.2	

Multi-tip insert

	3-TPGW16T304	●	●	●	●			3	Φ9.525	3.97	4.4	0.4	
	3-TPGW16T306	●	●	●	●			3	Φ9.525	3.97	4.4	0.6	
	3-TPGW16T308	●	●	●	●			3	Φ9.525	3.97	4.4	0.8	
	3-TPGW16T312	●	●	●	●			3	Φ9.525	3.97	4.4	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


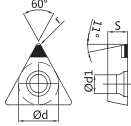
TP Triangular 60°
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●				●	●	


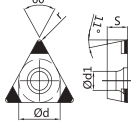
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Single-tip insert

	TPGW160402	●	●	●	●			1	Φ9.525	4.76	4.4	0.2	
	TPGW160404	●	●	●	●			1	Φ9.525	4.76	4.4	0.4	
	TPGW160406	●	●	●	●			1	Φ9.525	4.76	4.4	0.6	
	TPGW160408	●	●	●	●			1	Φ9.525	4.76	4.4	0.8	
	TPGW160412	●	●	●	●			1	Φ9.525	4.76	4.4	1.2	

Multi-tip insert

	3-TPGW160402	●	●	●	●			3	Φ9.525	4.76	4.4	0.2	
	3-TPGW160404	●	●	●	●			3	Φ9.525	4.76	4.4	0.4	
	3-TPGW160406	●	●	●	●			3	Φ9.525	4.76	4.4	0.6	
	3-TPGW160408	●	●	●	●			3	Φ9.525	4.76	4.4	0.8	
	3-TPGW160412	●	●	●	●			3	Φ9.525	4.76	4.4	1.2	

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool


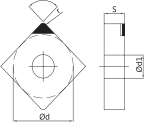
SN Square 90°
Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys					●				●	●		


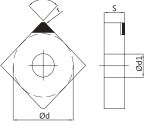
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


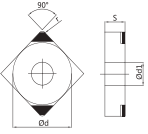
Single-tip insert

	SNGA07T204	●	●	●	●			1	Φ7.94	2.78	3.15	0.4	
	SNGA07T206	●	●	●	●			1	Φ7.94	2.78	3.15	0.6	
	SNGA07T208	●	●	●	●			1	Φ7.94	2.78	3.15	0.8	


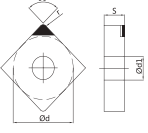
Single-tip insert

	SNGA090304	●	●	●	●			1	Φ9.525	3.18	3.8	0.4	
	SNGA090306	●	●	●	●			1	Φ9.525	3.18	3.8	0.6	
	SNGA090308	●	●	●	●			1	Φ9.525	3.18	3.8	0.8	
	SNGA090310	●	●	●	●			1	Φ9.525	3.18	3.8	1.0	
	SNGA090312	●	●	●	●			1	Φ9.525	3.18	3.8	1.2	

Multi-tip insert

	2-SNGA090304	●	●	●	●			2	Φ9.525	3.18	3.8	0.4	
	2-SNGA090306	●	●	●	●			2	Φ9.525	3.18	3.8	0.6	
	2-SNGA090308	●	●	●	●			2	Φ9.525	3.18	3.8	0.8	
	2-SNGA090310	●	●	●	●			2	Φ9.525	3.18	3.8	1.0	
	2-SNGA090312	●	●	●	●			2	Φ9.525	3.18	3.8	1.2	

Single-tip insert

	SNGA120404	●	●	●	●			1	Φ12.7	4.76	5.16	0.4	
	SNGA120406	●	●	●	●			1	Φ12.7	4.76	5.16	0.6	
	SNGA120408	●	●	●	●			1	Φ12.7	4.76	5.16	0.8	
	SNGA120410	●	●	●	●			1	Φ12.7	4.76	5.16	1.0	
	SNGA120412	●	●	●	●			1	Φ12.7	4.76	5.16	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


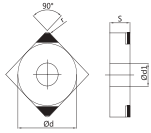
SN Square 90°
Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●				●	●			


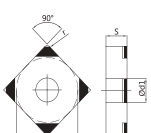
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						


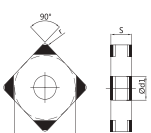
Multi-tip insert

	2-SNGA120404	●	●	●	●								
	2-SNGA120406	●	●	●	●								
	2-SNGA120408	●	●	●	●								
	2-SNGA120410	●	●	●	●								
	2-SNGA120412	●	●	●	●								


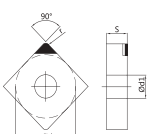
Multi-tip insert

	4-SNGA120404	●	●	●	●								
	4-SNGA120406	●	●	●	●								
	4-SNGA120408	●	●	●	●								
	4-SNGA120410	●	●	●	●								
	4-SNGA120412	●	●	●	●								
	4-SNGA120416	●	●	●	●								

Multi-tip insert

	8-SNGA120404	●	●	●	●								
	8-SNGA120406	●	●	●	●								
	8-SNGA120408	●	●	●	●								
	8-SNGA120410	●	●	●	●								
	8-SNGA120412	●	●	●	●								
	8-SNGA120416	●	●	●	●								

Single-tip insert

	SNGA150604	●	●	●	●								
	SNGA150608	●	●	●	●								
	SNGA150610	●	●	●	●								
	SNGA150612	●	●	●	●								
	SNGA150616	●	●	●	●								

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving

Miniature Tool


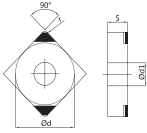
SN Square 90° Negative

H	Hard Materials	●	●	●										
K	Cast Iron		●	●										
S	Superalloys				●				●	●				


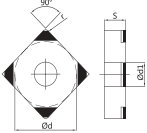
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBK800	TCBS700						


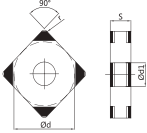
Multi-tip insert

	2-SNGA150604	●	●	●	●			2	Φ15.875	6.35	6.35	0.4	
	2-SNGA150608	●	●	●	●			2	Φ15.875	6.35	6.35	0.8	
	2-SNGA150610	●	●	●	●			2	Φ15.875	6.35	6.35	1.0	
	2-SNGA150612	●	●	●	●			2	Φ15.875	6.35	6.35	1.2	
	2-SNGA150616	●	●	●	●			2	Φ15.875	6.35	6.35	1.6	


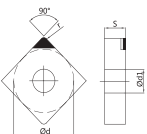
Multi-tip insert

	4-SNGA150604	●	●	●	●			4	Φ15.875	6.35	6.35	0.4	
	4-SNGA150608	●	●	●	●			4	Φ15.875	6.35	6.35	0.8	
	4-SNGA150610	●	●	●	●			4	Φ15.875	6.35	6.35	1.0	
	4-SNGA150612	●	●	●	●			4	Φ15.875	6.35	6.35	1.2	
	4-SNGA150616	●	●	●	●			4	Φ15.875	6.35	6.35	1.6	

Multi-tip insert

	8-SNGA150604	●	●	●	●			8	Φ15.875	6.35	6.35	0.4	
	8-SNGA150608	●	●	●	●			8	Φ15.875	6.35	6.35	0.8	
	8-SNGA150610	●	●	●	●			8	Φ15.875	6.35	6.35	1.0	
	8-SNGA150612	●	●	●	●			8	Φ15.875	6.35	6.35	1.2	
	8-SNGA150616	●	●	●	●			8	Φ15.875	6.35	6.35	1.6	

Single-tip insert

	SNGA190608	●	●	●	●			1	Φ19.05	6.35	7.94	0.8	
	SNGA190612	●	●	●	●			1	Φ19.05	6.35	7.94	1.2	
	SNGA190616	●	●	●	●			1	Φ19.05	6.35	7.94	1.6	

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool


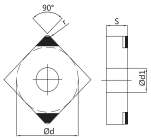
SN Square 90°
Negative

H	Hard Materials	●	●	●										
K	Cast Iron		●	●										
S	Superalloys				●					●	●			


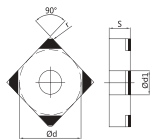
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


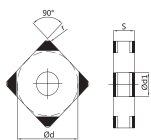
Multi-tip insert

	2-SNGA190608	●	●	●	●			2	Φ19.05	6.35	7.94	0.8	
	2-SNGA190612	●	●	●	●			2	Φ19.05	6.35	7.94	1.2	
	2-SNGA190616	●	●	●	●			2	Φ19.05	6.35	7.94	1.6	

Multi-tip insert

	4-SNGA190608	●	●	●	●			4	Φ19.05	6.35	7.94	0.8	
	4-SNGA190612	●	●	●	●			4	Φ19.05	6.35	7.94	1.2	
	4-SNGA190616	●	●	●	●			4	Φ19.05	6.35	7.94	1.6	

Multi-tip insert

	8-SNGA190608	●	●	●	●			8	Φ19.05	6.35	7.94	0.8	
	8-SNGA190612	●	●	●	●			8	Φ19.05	6.35	7.94	1.2	
	8-SNGA190616	●	●	●	●			8	Φ19.05	6.35	7.94	1.6	

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool


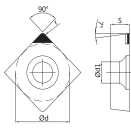
SC Square 90°
Positive 7°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys								●	●			


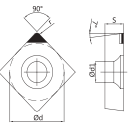
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


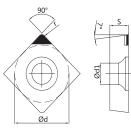
Single-tip insert

	SCGW050202	●	●	●	●			1	Φ5.56	2.38	2.2	0.2	
	SCGW050204	●	●	●	●			1	Φ5.56	2.38	2.2	0.4	


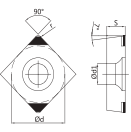
Single-tip insert

	SCGW060202	●	●	●	●			1	Φ6.35	2.38	2.2	0.2	
	SCGW060204	●	●	●	●			1	Φ6.35	2.38	2.2	0.4	
	SCGW060208	●	●	●	●			1	Φ6.35	2.38	2.2	0.8	


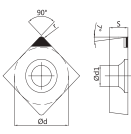
Single-tip insert

	SCGW070202	●	●	●	●			1	Φ7.94	2.38	3.4	0.2	
	SCGW070204	●	●	●	●			1	Φ7.94	2.38	3.4	0.4	
	SCGW070206	●	●	●	●			1	Φ7.94	2.38	3.4	0.6	
	SCGW070208	●	●	●	●			1	Φ7.94	2.38	3.4	0.8	

Multi-tip insert

	2-SCGW070202	●	●	●	●			2	Φ7.94	2.38	3.4	0.2	
	2-SCGW070204	●	●	●	●			2	Φ7.94	2.38	3.4	0.4	
	2-SCGW070206	●	●	●	●			2	Φ7.94	2.38	3.4	0.6	
	2-SCGW070208	●	●	●	●			2	Φ7.94	2.38	3.4	0.8	

Single-tip insert

	SCGW090302	●	●	●	●			1	Φ9.525	3.18	4.4	0.2	
	SCGW090304	●	●	●	●			1	Φ9.525	3.18	4.4	0.4	
	SCGW090306	●	●	●	●			1	Φ9.525	3.18	4.4	0.6	
	SCGW090308	●	●	●	●			1	Φ9.525	3.18	4.4	0.8	


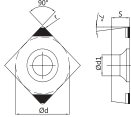
SC Square 90°
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys					●			●	●	


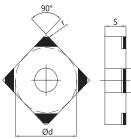
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


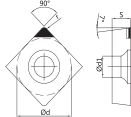
Multi-tip insert

	2-SCGW090302	●	●	●	●			●	●					
	2-SCGW090304	●	●	●	●			●	●					
	2-SCGW090306	●	●	●	●			●	●					
	2-SCGW090308	●	●	●	●			●	●					


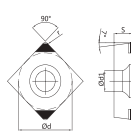
Multi-tip insert

	4-SCGW090302	●	●	●	●			●	●					
	4-SCGW090304	●	●	●	●			●	●					
	4-SCGW090306	●	●	●	●			●	●					
	4-SCGW090308	●	●	●	●			●	●					


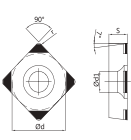
Single-tip insert

	SCGW09T302	●	●	●	●			●	●					
	SCGW09T304	●	●	●	●			●	●					
	SCGW09T306	●	●	●	●			●	●					
	SCGW09T308	●	●	●	●			●	●					

Multi-tip insert

	2-SCGW09T302	●	●	●	●			●	●					
	2-SCGW09T304	●	●	●	●			●	●					
	2-SCGW09T306	●	●	●	●			●	●					
	2-SCGW09T308	●	●	●	●			●	●					

Multi-tip insert

	4-SCGW09T302	●	●	●	●			●	●					
	4-SCGW09T304	●	●	●	●			●	●					
	4-SCGW09T306	●	●	●	●			●	●					
	4-SCGW09T308	●	●	●	●			●	●					

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting, Grooving

Miniature Tool


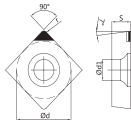
SC Square 90°
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		


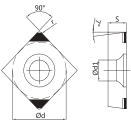
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


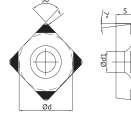
Single-tip insert

	SCGW120404	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.4	
	SCGW120406	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.6	
	SCGW120408	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.8	
	SCGW120410	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.0	
	SCGW120412	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.2	

Multi-tip insert

	2-SCGW120404	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.4	
	2-SCGW120406	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.6	
	2-SCGW120408	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.8	
	2-SCGW120410	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.0	
	2-SCGW120412	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.2	

Multi-tip insert

	4-SCGW120404	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	0.4	
	4-SCGW120406	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	0.6	
	4-SCGW120408	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	0.8	
	4-SCGW120410	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	1.0	
	4-SCGW120412	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting , Grooving

Miniature Tool


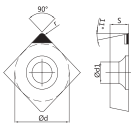
SP Square 90°
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●				●	●	


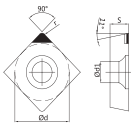
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


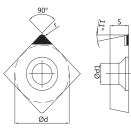
Single-tip insert

	SPGW060202	●	●	●	●			1	Φ6.35	2.38	2.8	0.2	
	SPGW060204	●	●	●	●			1	Φ6.35	2.38	2.8	0.4	


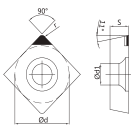
Single-tip insert

	SPGW070202	●	●	●	●			1	Φ7.94	2.38	3.4	0.2	
	SPGW070204	●	●	●	●			1	Φ7.94	2.38	3.4	0.4	
	SPGW070208	●	●	●	●			1	Φ7.94	2.38	3.4	0.8	


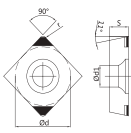
Single-tip insert

	SPGW070302	●	●	●	●			1	Φ7.94	3.18	3.4	0.2	
	SPGW070304	●	●	●	●			1	Φ7.94	3.18	3.4	0.4	
	SPGW070308	●	●	●	●			1	Φ7.94	3.18	3.4	0.8	

Single-tip insert

	SPGW090302	●	●	●	●			1	Φ9.525	3.18	3.4	0.2	
	SPGW090304	●	●	●	●			1	Φ9.525	3.18	3.4	0.4	
	SPGW090306	●	●	●	●			1	Φ9.525	3.18	3.4	0.6	
	SPGW090308	●	●	●	●			1	Φ9.525	3.18	3.4	0.8	

Multi-tip insert

	2-SPGW090302	●	●	●	●			2	Φ9.525	3.18	3.4	0.2	
	2-SPGW090304	●	●	●	●			2	Φ9.525	3.18	3.4	0.4	
	2-SPGW090306	●	●	●	●			2	Φ9.525	3.18	3.4	0.6	
	2-SPGW090308	●	●	●	●			2	Φ9.525	3.18	3.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool


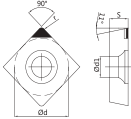
SP Square 90°
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		


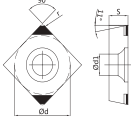
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


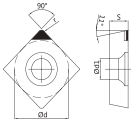
Single-tip insert

	SPGW09T304	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.4	
	SPGW09T306	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.6	
	SPGW09T308	●	●	●	●			●	●	1	Φ9.525	3.97	4.4	0.8	


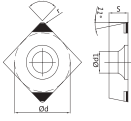
Multi-tip insert

	2-SPGW09T304	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.4	
	2-SPGW09T306	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.6	
	2-SPGW09T308	●	●	●	●			●	●	2	Φ9.525	3.97	4.4	0.8	


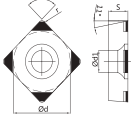
Single-tip insert

	SPGW120404	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.4	
	SPGW120406	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.6	
	SPGW120408	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	0.8	
	SPGW120410	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.0	
	SPGW120412	●	●	●	●			●	●	1	Φ12.7	4.76	5.5	1.2	

Multi-tip insert

	2-SPGW120404	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.4	
	2-SPGW120406	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.6	
	2-SPGW120408	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	0.8	
	2-SPGW120410	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.0	
	2-SPGW120412	●	●	●	●			●	●	2	Φ12.7	4.76	5.5	1.2	

Multi-tip insert

	4-SPGW120404	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	0.4	
	4-SPGW120406	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	0.6	
	4-SPGW120408	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	0.8	
	4-SPGW120410	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	1.0	
	4-SPGW120412	●	●	●	●			●	●	4	Φ12.7	4.76	5.5	1.2	


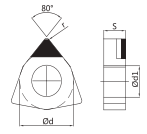
WN Trigon 80°
Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys				●				●	●	


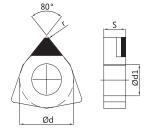
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100						


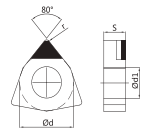
Single-tip insert

	WNGA06T302	●	●	●	●							
	WNGA06T304	●	●	●	●							
	WNGA06T306	●	●	●	●							
	WNGA06T308	●	●	●	●							

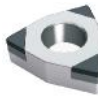
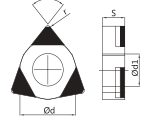
Single-tip insert

	WNGA060404	●	●	●	●							
	WNGA060406	●	●	●	●							
	WNGA060408	●	●	●	●							

Single-tip insert

	WNGA080404	●	●	●	●							
	WNGA080406	●	●	●	●							
	WNGA080408	●	●	●	●							
	WNGA080410	●	●	●	●							
	WNGA080412	●	●	●	●							

Multi-tip insert

	3-WNGA080404	●	●	●	●							
	3-WNGA080406	●	●	●	●							
	3-WNGA080408	●	●	●	●							
	3-WNGA080410	●	●	●	●							
	3-WNGA080412	●	●	●	●							

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting / Grooving

Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting , Grooving
 Miniature Tool


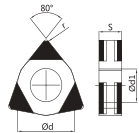
WN Trigon 80° Negative

H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCC H620	TCBK100	TCBK800	TCBS700						

Multi-tip insert


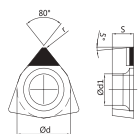
	6-WNGA080404	●	●	●	●			●	●				
	6-WNGA080406	●	●	●	●			●	●				
	6-WNGA080408	●	●	●	●			●	●				
	6-WNGA080410	●	●	●	●			●	●				
	6-WNGA080412	●	●	●	●			●	●				

WB Trigon 80° Positive 5°


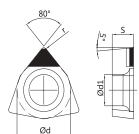
H	Hard Materials	●	●	●							
K	Cast Iron			●							
S	Superalloys							●	●		

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCC H620	TCBK100	TCBK800	TCBS700						

Single-tip insert

	WBGW060102	●	●	●	●			●	●				
	WBGW060104	●	●	●	●			●	●				

Single-tip insert


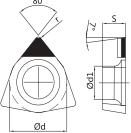
	WBGW080202	●	●	●	●			●	●				
	WBGW080204	●	●	●	●			●	●				

WC Trigon 80°
Positive 7°


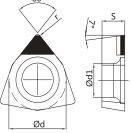
H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


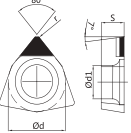
Single-tip insert

	WCGW020102	●	●	●	●			1	Φ3.97	1.59	2.3	0.2	
	WCGW020104	●	●	●	●			1	Φ3.97	1.59	2.3	0.4	


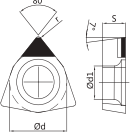
Single-tip insert

	WCGW040202	●	●	●	●			1	Φ6.35	2.38	2.8	0.2	
	WCGW040204	●	●	●	●			1	Φ6.35	2.38	2.8	0.4	

Single-tip insert

	WCGW050302	●	●	●	●			1	Φ7.94	3.18	3.5	0.2	
	WCGW050304	●	●	●	●			1	Φ7.94	3.18	3.5	0.4	
	WCGW050308	●	●	●	●			1	Φ7.94	3.18	3.5	0.8	

Single-tip insert

	WCGW06T302	●	●	●	●			1	Φ9.525	3.97	4.4	0.2	
	WCGW06T304	●	●	●	●			1	Φ9.525	3.97	4.4	0.4	
	WCGW06T308	●	●	●	●			1	Φ9.525	3.97	4.4	0.8	


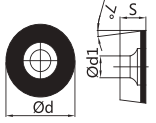
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Treading
Parting, Grooving
Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

RC Round Positive 7°


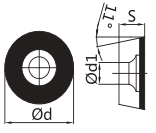
H	Hard Materials	●	●	●							
K	Cast Iron		●	●	●						
S	Superalloys							●	●		

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
	RCGW060200	●	●	●	●			—	Φ6	2.38	2.8	—	
	RCGW080300	●	●	●	●			—	Φ8	3.18	3.4	—	
	RCGW100300	●	●	●	●			—	Φ10	3.18	3.6	—	
	RCGW120400	●	●	●	●			—	Φ12	4.76	4.2	—	
	RCGW160600	●	●	●	●			—	Φ16	6.35	5.2	—	

RP Round Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron				●						
S	Superalloys							●	●		

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
	RPGW080300	●	●	●	●			—	Φ8	3.18	3.4	—	
	RPGW100400	●	●	●	●			—	Φ10	4.72	3.6	—	
	RPGW120400	●	●	●	●			—	Φ12	4.72	4.2	—	
	RPGW160400	●	●	●	●			—	Φ16	4.72	5.2	—	


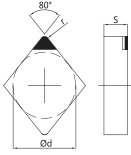
CN Rhombic 80°
Negative

H	Hard Materials	●	●	●										
K	Cast Iron		●	●										
S	Superalloys				●						●	●		


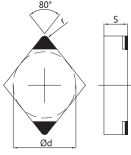
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


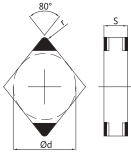
Single-tip insert

	CNGN120404	●	●	●	●			1	Φ12.7	4.76	—	0.4	
	CNGN120408	●	●	●	●			1	Φ12.7	4.76	—	0.8	
	CNGN120412	●	●	●	●			1	Φ12.7	4.76	—	1.2	

Multi-tip insert

	2-CNGN120404	●	●	●	●			2	Φ12.7	4.76	—	0.4	
	2-CNGN120408	●	●	●	●			2	Φ12.7	4.76	—	0.8	
	2-CNGN120412	●	●	●	●			2	Φ12.7	4.76	—	1.2	

Multi-tip insert

	4-CNGN120404	●	●	●	●			4	Φ12.7	4.76	—	0.4	
	4-CNGN120408	●	●	●	●			4	Φ12.7	4.76	—	0.8	
	4-CNGN120412	●	●	●	●			4	Φ12.7	4.76	—	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving


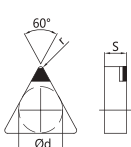
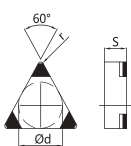


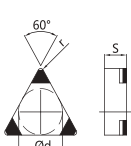
Miniature Tool

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

TN Triangular 60° Negative

H	Hard Materials	●	●	●																
K	Cast Iron				●															
S	Superalloys									●	●									

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
Single-tip insert													
	TNGN110302	●	●	●	●			1	Φ6.35	3.18	—	0.2	
	TNGN110304	●	●	●	●			1	Φ6.35	3.18	—	0.4	
	TNGN110306	●	●	●	●			1	Φ6.35	3.18	—	0.6	
Single-tip insert													
	TNGN160304	●	●	●	●			1	Φ9.525	3.18	—	0.4	
	TNGN160308	●	●	●	●			1	Φ9.525	3.18	—	0.8	
	TNGN160312	●	●	●	●			1	Φ9.525	3.18	—	1.2	
Multi-tip insert													
	3-TNGN160304	●	●	●	●			3	Φ9.525	3.18	—	0.4	
	3-TNGN160308	●	●	●	●			3	Φ9.525	3.18	—	0.8	
	3-TNGN160312	●	●	●	●			3	Φ9.525	3.18	—	1.2	
Single-tip insert													
	TNGN160404	●	●	●	●			1	Φ9.525	4.76	—	0.4	
	TNGN160408	●	●	●	●			1	Φ9.525	4.76	—	0.8	
	TNGN160412	●	●	●	●			1	Φ9.525	4.76	—	1.2	
	TNGN160416	●	●	●	●			1	Φ9.525	4.76	—	1.6	
Multi-tip insert													
	3-TNGN160404	●	●	●	●			3	Φ9.525	4.76	—	0.4	
	3-TNGN160408	●	●	●	●			3	Φ9.525	4.76	—	0.8	
	3-TNGN160412	●	●	●	●			3	Φ9.525	4.76	—	1.2	
	3-TNGN160416	●	●	●	●			3	Φ9.525	4.76	—	1.6	


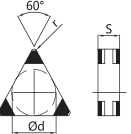
TN Triangular 60° Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●									
S	Superalloys				●								

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						

Multi-tip insert

	6-TNGN160404	●	●	●	●			6	Φ9.525	4.76	—	0.4	
	6-TNGN160408	●	●	●	●			6	Φ9.525	4.76	—	0.8	
	6-TNGN160412	●	●	●	●			6	Φ9.525	4.76	—	1.2	
	6-TNGN160416	●	●	●	●			6	Φ9.525	4.76	—	1.6	


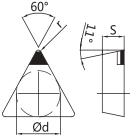


Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

TP Triangular 60°
Positive 11°

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys				●				●	●			

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						
Single-tip insert													
	TPGN090202	●	●	●	●			1	Φ5.56	2.38	—	0.2	
	TPGN090204	●	●	●	●			1	Φ5.56	2.38	—	0.4	
	TPGN090208	●	●	●	●			1	Φ5.56	2.38	—	0.8	
Single-tip insert													
	TPGN110302	●	●	●	●			1	Φ6.35	3.18	—	0.2	
	TPGN110304	●	●	●	●			1	Φ6.35	3.18	—	0.4	
	TPGN110308	●	●	●	●			1	Φ6.35	3.18	—	0.8	
Single-tip insert													
	TPGN160304	●	●	●	●			1	Φ9.525	3.18	—	0.4	
	TPGN160308	●	●	●	●			1	Φ9.525	3.18	—	0.8	
	TPGN160312	●	●	●	●			1	Φ9.525	3.18	—	1.2	
Multi-tip insert													
	3-TPGN160304	●	●	●	●			3	Φ9.525	3.18	—	0.4	
	3-TPGN160308	●	●	●	●			3	Φ9.525	3.18	—	0.8	
	3-TPGN160312	●	●	●	●			3	Φ9.525	3.18	—	1.2	
Single-tip insert													
	TPGN160404	●	●	●	●			1	Φ9.525	4.76	—	0.4	
	TPGN160408	●	●	●	●			1	Φ9.525	4.76	—	0.8	
	TPGN160412	●	●	●	●			1	Φ9.525	4.76	—	1.2	
	TPGN160416	●	●	●	●			1	Φ9.525	4.76	—	1.6	


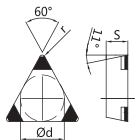
TP Triangular 60°
Positive 11°

H	Hard Materials	●	●	●							
K	Cast Iron		●	●							
S	Superalloys			●				●	●		


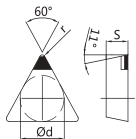
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


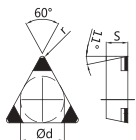
Multi-tip insert

	3-TPGN160404	●	●	●	●			●	●		—	0.4	
	3-TPGN160408	●	●	●	●			●	●		—	0.8	
	3-TPGN160412	●	●	●	●			●	●		—	1.2	
	3-TPGN160416	●	●	●	●			●	●		—	1.6	

Single-tip insert

	TPGN220408	●	●	●	●			●	●		—	0.8	
	TPGN220412	●	●	●	●			●	●		—	1.2	
	TPGN220416	●	●	●	●			●	●		—	1.6	

Multi-tip insert

	3-TPGN220408	●	●	●	●			●	●		—	0.8	
	3-TPGN220412	●	●	●	●			●	●		—	1.2	
	3-TPGN220416	●	●	●	●			●	●		—	1.6	

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool


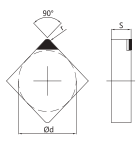
SN Square 90°
Negative

H	Hard Materials	●	●	●									
K	Cast Iron		●	●	●								
S	Superalloys					●				●	●		


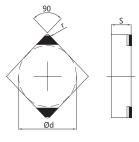
● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated		Coated		No Coated		Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TCBH510	TCBH520	TCCH620	TCBK100	TCBX800	TCBS700						


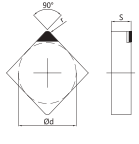
Single-tip insert

	SNGN090302	●	●	●	●			1	Φ9.525	3.18	—	0.2	
	SNGN090304	●	●	●	●			1	Φ9.525	3.18	—	0.4	
	SNGN090308	●	●	●	●			1	Φ9.525	3.18	—	0.8	


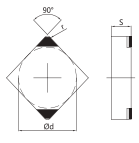
Multi-tip insert

	2-SNGN090302	●	●	●	●			2	Φ9.525	3.18	—	0.2	
	2-SNGN090304	●	●	●	●			2	Φ9.525	3.18	—	0.4	
	2-SNGN090308	●	●	●	●			2	Φ9.525	3.18	—	0.8	


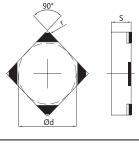
Single-tip insert

	SNGN120404	●	●	●	●			1	Φ12.7	4.76	—	0.4	
	SNGN120408	●	●	●	●			1	Φ12.7	4.76	—	0.8	
	SNGN120412	●	●	●	●			1	Φ12.7	4.76	—	1.2	


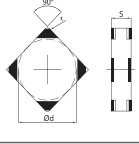
Multi-tip insert

	2-SNGN120404	●	●	●	●			2	Φ12.7	4.76	—	0.4	
	2-SNGN120408	●	●	●	●			2	Φ12.7	4.76	—	0.8	
	2-SNGN120412	●	●	●	●			2	Φ12.7	4.76	—	1.2	

Multi-tip insert

	4-SNGN120404	●	●	●	●			4	Φ12.7	4.76	—	0.4	
	4-SNGN120408	●	●	●	●			4	Φ12.7	4.76	—	0.8	
	4-SNGN120412	●	●	●	●			4	Φ12.7	4.76	—	1.2	

Multi-tip insert

	8-SNGN120404	●	●	●	●			8	Φ12.7	4.76	—	0.4	
	8-SNGN120408	●	●	●	●			8	Φ12.7	4.76	—	0.8	
	8-SNGN120412	●	●	●	●			8	Φ12.7	4.76	—	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

Solid type

- Monolithic sintering structure, no strength and internal stress defects caused by welding.
- Suitable for rough machining occasions with large cutting depth and heavy cutting.



Strong welding type

- Ultra high welding strength is suitable for harsh cutting environment with long life and safety requirements.



Material Introduction

	Grade	Work Material	Features	Application
Uncoated	TBN7000	Hardened Steel Hardened Cast Iron	Excellent overall performance with universal application. Excellent wear resistance.	Semi-Finishing Finishing
	TBN9500 H	Hardened Steel	Exhibiting wear and fracture resistance in cutting of hardened steel.	Finishing
	TBS7000	Hardened Steel Hardened Cast Iron	Excellent overall performance with universal application. Excellent wear resistance.	Finishing
	TBN7200	K Grey Cast Iron	Exhibiting improved wear and fracture resistance in cutting of Grey Cast Iron.	Heavy cutting
	TBS7200			Finishing
	TBN3500 S	High Nickel Chrome High Hardness Alloy Cast Iron High Manganese Steel	Excellent impact resistance and wear resistance.	Heavy cutting

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting Grooving

Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool


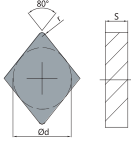

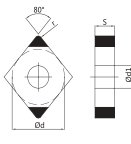
CN Rhombic 80°
Negative

H	Hard Materials	●	●	●							
K	Cast Iron				●	●					
S	Superalloys						●				

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert


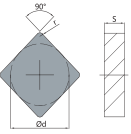

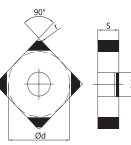
	CNMN120404	●	●	●	●	●	●	4	Φ12.7	4.76	—	0.4	
	CNMN120408	●	●	●	●	●	●	4	Φ12.7	4.76	—	0.8	
	CNMN120412	●	●	●	●	●	●	4	Φ12.7	4.76	—	1.2	
	CNGA120404-4T			●	●	●	●	4	Φ12.7	4.76	5.16	0.4	
	CNGA120408-4T			●	●	●	●	4	Φ12.7	4.76	5.16	0.8	
	CNGA120412-4T			●	●	●	●	4	Φ12.7	4.76	5.16	1.2	
	CNGA160404-4T			●	●	●	●	4	Φ15.875	6.35	6.35	0.4	
	CNGA160408-4T			●	●	●	●	4	Φ15.875	6.35	6.35	0.8	
	CNGA160412-4T			●	●	●	●	4	Φ15.875	6.35	6.35	1.2	

SN Square 90°
Negative

H	Hard Materials	●	●	●							
K	Cast Iron				●	●					
S	Superalloys						●				

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert

	SNMN090304	●	●	●	●	●	●	8	Φ9.525	3.18	—	0.4	
	SNMN090308	●	●	●	●	●	●	8	Φ9.525	3.18	—	0.8	
	SNMN090312	●	●	●	●	●	●	8	Φ9.525	3.18	—	1.2	
	SNMN120404	●	●	●	●	●	●	8	Φ12.7	4.76	—	0.4	
	SNMN120408	●	●	●	●	●	●	8	Φ12.7	4.76	—	0.8	
	SNGA120404-8T			●	●	●	●	8	Φ12.7	4.76	5.16	0.4	
	SNGA120408-8T			●	●	●	●	8	Φ12.7	4.76	5.16	0.8	
	SNGA120412-8T			●	●	●	●	8	Φ12.7	4.76	5.16	1.2	


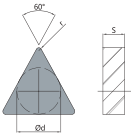

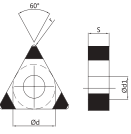
TN Triangular 60° Negative

H	Hard Materials	●	●	●									
K	Cast Iron				●	●							
S	Superalloys						●						

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert


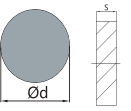
	TNGN110304	●	●		●	●			6	Φ6.35	3.18	—	0.4	
	TNGN110308	●	●		●	●			6	Φ6.35	3.18	—	0.8	
	TNGN110312	●	●		●	●			6	Φ6.35	3.18	—	1.2	
	TNGN160404		●		●	●			6	Φ9.525	4.76	—	0.4	
	TNGN160408		●		●	●			6	Φ9.525	4.76	—	0.8	
	TNGN160412		●		●	●			6	Φ9.525	4.76	—	1.2	
	TNGA160404-6T			●	●				6	Φ9.525	4.76	3.8	0.4	
	TNGA160408-6T			●	●				6	Φ9.525	4.76	3.8	0.8	
	TNGA160412-6T			●	●				6	Φ9.525	4.76	3.8	1.2	

RN Round Negative

H	Hard Materials	●	●	●									
K	Cast Iron				●	●							
S	Superalloys						●						

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert

	RNMN090300	●	●		●	●			—	Φ9.525	3.18	—	—	
	RNMN120400	●	●		●	●			—	Φ12.7	4.76	—	—	
	RNGN090300	●	●		●	●			—	Φ9.525	3.18	—	—	
	RNGN120400	●	●		●	●			—	Φ12.7	4.76	—	—	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving


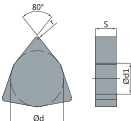

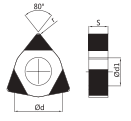
Miniature Tool

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

WN Trigon 80°
Negative


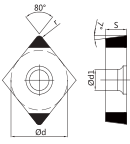
H	Hard Materials	•	•	•							
K	Cast Iron				•	•					
S	Superalloys						•				

• : Continuous Cutting ◐ : Light Interrupted Cutting

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						
Multi-tip insert													
	WNMN080404	•	•		•	•		6	Φ12.7	4.76	—	0.4	
	WNMN080408	•	•		•	•		6	Φ12.7	4.76	—	0.8	
	WNMN080412	•	•		•	•		6	Φ12.7	4.76	—	1.2	
	WNGA080404-6T			•	•			6	Φ12.7	4.76	5.16	0.4	
	WNGA080408-6T			•	•			6	Φ12.7	4.76	5.16	0.8	
	WNGA080412-6T			•	•			6	Φ12.7	4.76	5.16	1.2	

CC Rhombic 80°
Positive 7°

H	Hard Materials	•	•	•							
K	Cast Iron				•	•					
S	Superalloys						•				

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						
Multi-tip insert													
	CCGW09T304-2T			•	•			2	Φ9.525	3.97	4.4	0.4	
	CCGW09T308-2T			•	•			2	Φ9.525	3.97	4.4	0.8	
	CCGW09T312-2T			•	•			2	Φ9.525	3.97	4.4	1.2	
	CCGW120404-2T			•	•			2	Φ12.7	4.76	5.5	0.4	
	CCGW120408-2T			•	•			2	Φ12.7	4.76	5.5	0.8	
	CCGW120412-2T			•	•			2	Φ12.7	4.76	5.5	1.2	


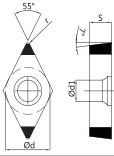
DC Rhombic 55°
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron				●	●					
S	Superalloys						●				

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert


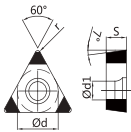
	DCGW11T304-2T			●	●				2	Φ9.525	3.97	4.4	0.4	
	DCGW11T308-2T			●	●				2	Φ9.525	3.97	4.4	0.8	
	DCGW11T312-2T			●	●				2	Φ9.525	3.97	4.4	1.2	

TC Triangular 60°
Positive 7°

H	Hard Materials	●	●	●							
K	Cast Iron				●	●					
S	Superalloys						●				

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert

	TCGW110304-3T			●	●				3	Φ6.35	3.18	2.8	0.4	
	TCGW110308-3T			●	●				3	Φ6.35	3.18	2.8	0.8	
	TCGW110312-3T			●	●				3	Φ6.35	3.18	2.8	1.2	

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool


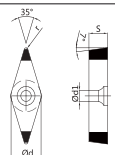
VB Rhombic 35°
Positive 5°

H	Hard Materials	●	●	●								
K	Cast Iron				●	●						
S	Superalloys						●					

● : Continuous Cutting ● : Light Interrupted Cutting

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert


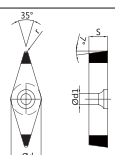
	VBGW160404-2T			●	●				2	Φ9.525	4.76	4.4	0.4	
	VBGW160408-2T			●	●				2	Φ9.525	4.76	4.4	0.8	
	VBGW160412-2T			●	●				2	Φ9.525	4.76	4.4	1.2	

VC Rhombic 35°
Positive 7°

H	Hard Materials	●	●	●								
K	Cast Iron				●	●						
S	Superalloys						●					


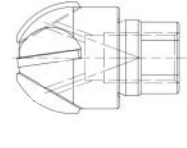
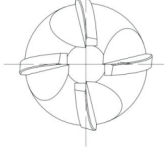

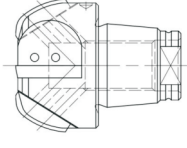
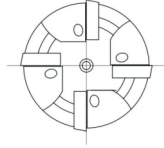

Insert shape	Designation	No Coated						Number of tips	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TBN7000	TBN9500	TBS7000	TBN7200	TBS7200	TBN3500						

Multi-tip insert

	VCGW160404-2T			●	●				2	Φ9.525	4.76	4.4	0.4	
	VCGW160408-2T			●	●				2	Φ9.525	4.76	4.4	0.8	
	VCGW160412-2T			●	●				2	Φ9.525	4.76	4.4	1.2	

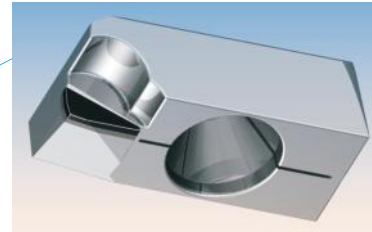
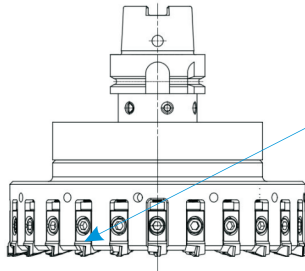
CBN ballnose tool

CV joint machining tool introduction

 <p>Straight connection</p> <p>Taper connection</p>	Straight shank	No air coolant hole	Maching position: Ball track
			
	RTS shank	Air coolant hole	
			

Auto parts face milling

Milling cutter and cartridge



- App : Face milling
- Feature : Cartridge can be adjusted.

Non standard scheme design

Cylinder block cutting tool

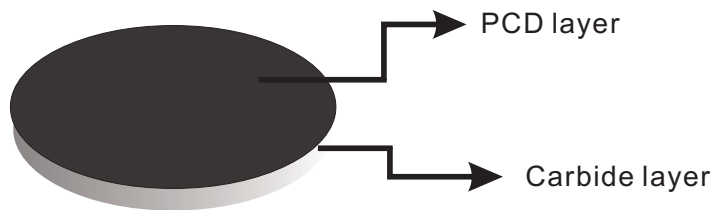


Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

Polycrystalline Diamond (PCD)

TOTIME diamond material is a synthetic diamond sintered under high temperatures and pressures. PCD (Polycrystalline diamond) is ideal for non-ferrous metals and non-metals.

- Applicable for non-ferrous metals, non-metals turning, milling and other various type of cutting.
- Long tool life due to extreme hardness.
- Capable of high cutting speeds which increases cutting productivity.
- Reduced edge build-up allows for high precision cutting.
- Diversified applications for cutting of non-ferrous materials and non-metals.



Recommended Grades

Grade	Grain Size (μm)	Transverse Rupture Strength (Gpa)	Work Material	Features
TDC2000	6	1.7	CFPR Composite Materials	Special blade design, excellent wear resistance.
TDA1000	10	1.4	Medium and Low Si Aluminum Alloy Si<13%	Demonstrates optimum wear and fracture resistance and excellent edge sharpness.
TDA1500	25	1.2	High Si Aluminum Alloy Si>13%	Exhibiting wear and fracture resistance in cutting of aluminum alloy.

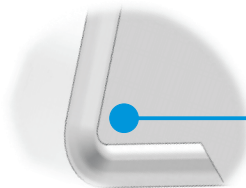
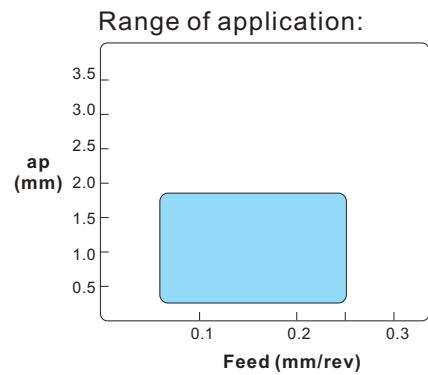
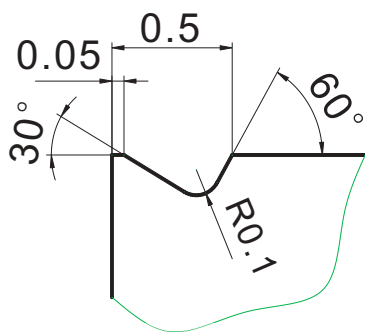
Cutting conditions

Work Material	Grade	Cutting Condition		
		Vc (m/min)	f (mm/rev)	ap(mm)
Medium and Low Si Aluminum Alloy Si<13%	TDA1000	900-3000	0.1-0.4	0.1-0.4
High Si Aluminum Alloy Si>13%	TDA1500	300-700	0.1-0.4	0.1-0.4
Carbon Fiber	TDC2000	200-1500	0.05-0.3	0.1-3.0

PCD Chipbreaker

- Provides excellent chip control in medium finishing and finishing of aluminium alloy.
- Solves chip control problems and dramatically improves work efficiency.
- Achieves long, stable tool life by employing high-toughness grade.

FF Chipbreaker FF Rough/semi-finish slot type

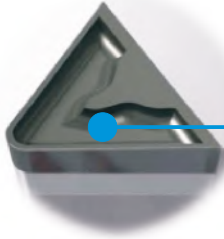
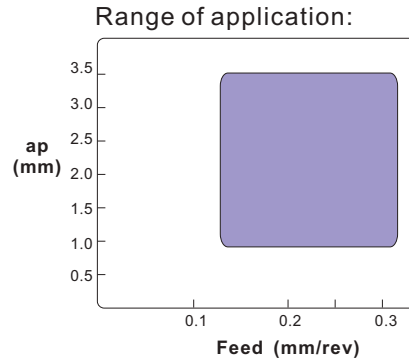
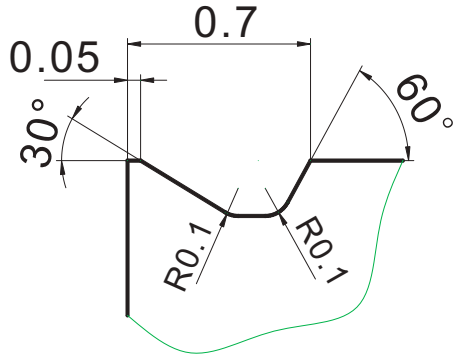


Finely breaks chips in machining cast materials

<p>Machining Details: Internal Boring of Transmission Components</p>		<p>Without chip slot</p>
		<p>With chip slot</p>
<p>Work Material :A6061 Tool No. :2-VCMT110302-FF Cutting Conditions :Vc=200m/min, f=0.20mm/rev ap=0.10mm Wet</p>		

- Insert
- External Toolholder
- Internal Toolholder
- PSC Toolholder
- Threading
- Parting, Grooving
- Miniature Tool

KF Chipbreaker KF Rough/semi-finish chip slot type



Provides good chip control at shallow depths of cut for wrought materials.

Machining Details: Internal Boring of Machine Components		Without chip slot
		<p>With chip slot</p>
Work Material	:ADC12	
Tool No.	:4-TPMT110304-KF	
Cutting Conditions	:Vc=400m/min, f=0.23mm/rev ap=1.20mm Wet	

★ Customer can choose according to exact demand

Single Crystal Diamond

Single crystal diamond is considered to be the most ideal tool material for ultra-precision machining, and the tools made have extremely high hardness and wear resistance. Low friction coefficient and high elastic modulus. High thermal conductivity, low thermal expansion coefficient and low affinity with non-ferrous metals. However, the characteristics of materials are also doomed to high experimental cost, high processing difficulty and small processing space.

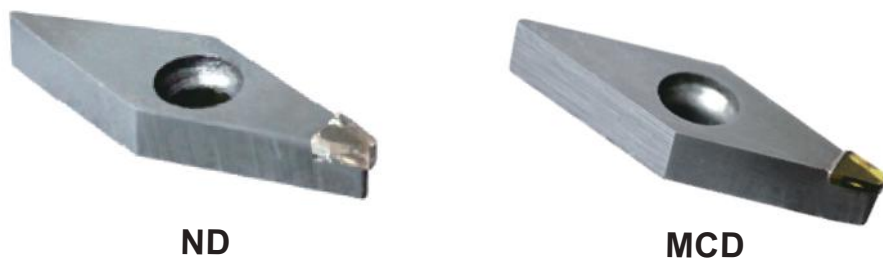
Classification



Natural Diamond (ND)

Synthetic Diamond (MCD)

Standard inserts



ND

MCD

The precision of blade contour can reach 5 μm;
 More sharp edge and longer service life;
 Adopt ISO international standards;
 Mainly including C-type, D-type, V-type, and other series of standard inserts.

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Single Crystal Diamond

The company has launched diversified diamond single crystal ultra precision machining tool systems, widely used in ultra precision turning, milling, drilling, and nano high polishing table, surface processing. At the same time, the cutting tools can be developed and customized according to the processing needs of customers.

● Milling cutter



- The sharp edge ensures the good quality of the machined surface;
- More excellent wear resistance and longer service life;
- It is suitable for side milling, slot milling, contour milling and spiral interpolation milling of precision parts;
- Specification diameter: $\varnothing 3$ - $\varnothing 20$

● Dresser




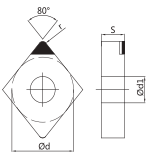

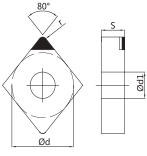

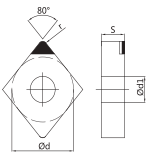
- Single / multiple natural diamond finishing tools are used;
- Suitable for all kinds of cylindrical grinding machines, centerless grinding machines, surface grinding machines and special grinding wheels;
- Stable quality, complete specifications and convenient use;
- Longer life and durability.

● Non-standard tool



- The precision of fine grinding edge contour can reach $5 \mu m$;
- Finish grinding the edge contour according to the forming size of the workpiece, and complete the high-precision shape machining at one time.

CN Rhombic 80°
Negative

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	CNGA090302	●	●	●	●	●	—	Φ9.525	3.18	3.18	0.2	
	CNGA090304	●	●	●	●	●	—	Φ9.525	3.18	3.18	0.4	
	CNGA090306	●	●	●	●	●	—	Φ9.525	3.18	3.18	0.6	
	CNGA090308	●	●	●	●	●	—	Φ9.525	3.18	3.18	0.8	
	CNGA09T302	●	●	●	●	●	—	Φ9.525	3.97	3.81	0.2	
	CNGA09T304	●	●	●	●	●	—	Φ9.525	3.97	3.81	0.4	
	CNGA09T306	●	●	●	●	●	—	Φ9.525	3.97	3.81	0.6	
	CNGA09T308	●	●	●	●	●	—	Φ9.525	9.97	3.81	0.8	
	CNGA120402	●	●	●	●	●	—	Φ12.7	4.76	5.16	0.2	
	CNGA120404	●	●	●	●	●	—	Φ12.7	4.76	5.16	0.4	
	CNGA120408	●	●	●	●	●	—	Φ12.7	4.76	5.16	0.8	
	CNGA120412	●	●	●	●	●	—	Φ12.7	4.76	5.16	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


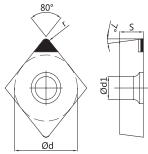

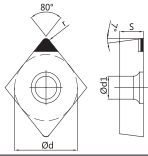

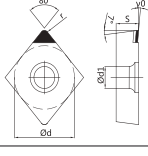

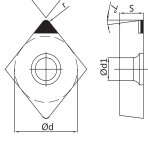

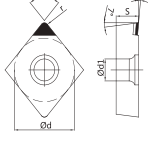

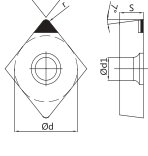

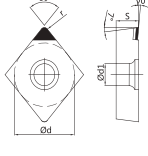
Threading

Parting, Grooving


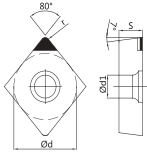

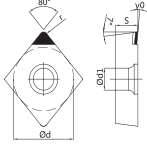

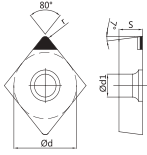

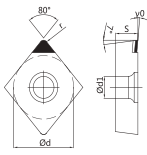
Miniature Tool

CC Rhombic 80°
Positive 7°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	CCMW03S102	●	●	●	●	●	—	Φ3.57	1.39	2	0.2	
	CCMW03S104	●	●	●	●	●	—	Φ3.57	1.39	2	0.4	
	CCMW04T002	●	●	●	●	●	—	Φ4.37	1.79	2	0.2	
	CCMW04T004	●	●	●	●	●	—	Φ4.37	1.79	2	0.4	
	CCGW050202	●	●	●	●	●	—	Φ5.56	2.38	2.4	0.2	
	CCGW050204	●	●	●	●	●	—	Φ5.56	2.38	2.4	0.4	
	CCGW050206	●	●	●	●	●	—	Φ5.56	2.38	2.4	0.6	
	CCGT050202	●	●	●	●	●	3°~5°	Φ5.56	2.38	2.4	0.2	
	CCGT050204	●	●	●	●	●	3°~5°	Φ5.56	2.38	2.4	0.4	
	CCGT050206	●	●	●	●	●	3°~5°	Φ5.56	2.38	2.4	0.6	
	CCGW060202	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.2	
	CCGW060204	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.4	
	CCGW060206	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.6	
	CCGW060208	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.8	
	CCGT060202	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.2	
	CCGT060204	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.4	
	CCGT060206	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.6	
	CCGT060208	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.8	
	CCMW080202	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.2	
	CCMW080204	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.4	
	CCMW080206	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.6	
	CCMW080208	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.8	
	CCMT080202	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.2	
	CCMT080204	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.4	
	CCMT080206	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.6	
	CCMT080208	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.8	

CC Rhombic 80°
Positive 7°

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	CCGW09T302	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.2	
	CCGW09T304	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.4	
	CCGW09T306	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.6	
	CCGW09T308	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.8	
	CCGT09T302	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	0.2	
	CCGT09T304	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	0.4	
	CCGT09T306	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	0.6	
	CCGT09T308	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	0.8	
	CCGW120402	●	●	●	●	●	—	Φ12.7	4.76	5.5	0.2	
	CCGW120404	●	●	●	●	●	—	Φ12.7	4.76	5.5	0.4	
	CCGW120406	●	●	●	●	●	—	Φ12.7	4.76	5.5	0.6	
	CCGW120408	●	●	●	●	●	—	Φ12.7	4.76	5.5	0.8	
	CCGW120412	●	●	●	●	●	—	Φ12.7	4.76	5.5	1.2	
	CCGT120402	●	●	●	●	●	5°~10°	Φ12.7	4.76	5.5	0.2	
	CCGT120404	●	●	●	●	●	5°~10°	Φ12.7	4.76	5.5	0.4	
	CCGT120406	●	●	●	●	●	5°~10°	Φ12.7	4.76	5.5	0.6	
	CCGT120408	●	●	●	●	●	5°~10°	Φ12.7	4.76	5.5	0.8	
	CCGT120412	●	●	●	●	●	5°~10°	Φ12.7	4.76	5.5	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


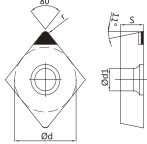

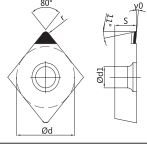

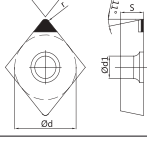

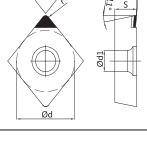

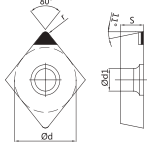

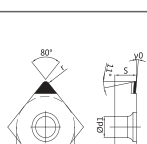

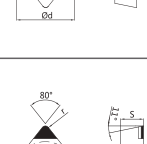
Threading

Parting / Grooving

Miniature Tool

CP Rhombic 80°
Positive 11°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	CPGW050202	●	●	●	●	●		—	Φ5.56	2.38	2.4	0.2	
	CPGW050204	●	●	●	●	●		—	Φ5.56	2.38	2.4	0.4	
	CPGW050206	●	●	●	●	●		—	Φ5.56	2.38	2.4	0.6	
	CPGT050202	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.4	0.2	
	CPGT050204	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.4	0.4	
	CPGT050206	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.4	0.6	
	CPGW060202	●	●	●	●	●		—	Φ6.35	2.38	2.8	0.2	
	CPGW060204	●	●	●	●	●		—	Φ6.35	2.38	2.8	0.4	
	CPGW060208	●	●	●	●	●		—	Φ6.35	2.38	2.8	0.8	
	CPGT060202	●	●	●	●	●		3°~5°	Φ6.35	2.38	2.8	0.2	
	CPGT060204	●	●	●	●	●		3°~5°	Φ6.35	2.38	2.8	0.4	
	CPGT060208	●	●	●	●	●		3°~5°	Φ6.35	2.38	2.8	0.8	
	CPGW080202	●	●	●	●	●		—	Φ7.94	2.38	2.8	0.2	
	CPGW080204	●	●	●	●	●		—	Φ7.94	2.38	2.8	0.4	
	CPGW080206	●	●	●	●	●		—	Φ7.94	2.38	2.8	0.6	
	CPGW080208	●	●	●	●	●		—	Φ7.94	2.38	2.8	0.8	
	CPGT080202	●	●	●	●	●		3°~5°	Φ7.94	2.38	2.8	0.2	
	CPGT080204	●	●	●	●	●		3°~5°	Φ7.94	2.38	2.8	0.4	
	CPGT080206	●	●	●	●	●		3°~5°	Φ7.94	2.38	2.8	0.6	
	CPGT080208	●	●	●	●	●		3°~5°	Φ7.94	2.38	2.8	0.8	
	CPGW090302	●	●	●	●	●		—	Φ9.525	3.18	4.4	0.2	
	CPGW090304	●	●	●	●	●		—	Φ9.525	3.18	4.4	0.4	
	CPGW090306	●	●	●	●	●		—	Φ9.525	3.18	4.4	0.6	
	CPGW090308	●	●	●	●	●		—	Φ9.525	3.18	4.4	0.8	

CP Rhombic 80°
Positive 11°

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile	
		TDA1000	TDA1500	TDC2000	MCD	ND							
	CPGT090302	●	●	●	●	●		5°~10°	Φ9.525	3.18	4.4	0.2	
	CPGT090304	●	●	●	●	●		5°~10°	Φ9.525	3.18	4.4	0.4	
	CPGT090306	●	●	●	●	●		5°~10°	Φ9.525	3.18	4.4	0.6	
	CPGT090308	●	●	●	●	●		5°~10°	Φ9.525	3.18	4.4	0.8	
	CPGW09T302	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.2	
	CPGW09T304	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.4	
	CPGW09T306	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.6	
	CPGW09T308	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.8	
	CPGT09T302	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.2	
	CPGT09T304	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.4	
	CPGT09T306	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.6	
	CPGT09T308	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.8	
	CPGW120402	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.2	
	CPGW120404	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.4	
	CPGW120408	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.8	
	CPGW120410	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.0	
	CPGW120412	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.2	
	CPGT120402	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.2	
	CPGT120404	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.4	
	CPGT120408	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.8	
	CPGT120410	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.0	
	CPGT120412	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


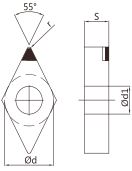

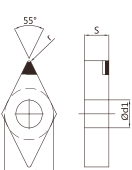

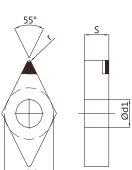
Threading

Parting, Grooving

Miniature Tool

DN Rhombic 55°
Negative

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile	
		TDA1000	TDA1500	TDC2000	MCD	ND							
	DNGA110402	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.2	
	DNGA110404	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.4	
	DNGA110406	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.6	
	DNGA110408	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.8	
	DNGA150402	●	●	●	●	●		—	Φ12.7	4.76	5.16	0.2	
	DNGA150404	●	●	●	●	●		—	Φ12.7	4.76	5.16	0.4	
	DNGA150408	●	●	●	●	●		—	Φ12.7	4.76	5.16	0.8	
	DNGA150410	●	●	●	●	●		—	Φ12.7	4.76	5.16	1.0	
	DNGA150412	●	●	●	●	●		—	Φ12.7	4.76	5.16	1.2	
	DNGA150604	●	●	●	●	●		—	Φ12.7	6.35	5.16	0.4	
	DNGA150608	●	●	●	●	●		—	Φ12.7	6.35	5.16	0.8	
	DNGA150610	●	●	●	●	●		—	Φ12.7	6.35	5.16	1.0	
	DNGA150612	●	●	●	●	●		—	Φ12.7	6.35	5.16	1.2	

DC Rhombic 55°
Positive 7°

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	DCGW070202	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.2	
	DCGW070204	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.4	
	DCGW070206	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.6	
	DCGW070208	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.8	
	DCGT070202	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.2	
	DCGT070204	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.4	
	DCGT070206	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.6	
	DCGT070208	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.8	
	DCGW090202	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.2	
	DCGW090204	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.4	
	DCGW090206	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.6	
	DCGW090208	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.8	
	DCGT090202	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.2	
	DCGT090204	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.4	
	DCGT090206	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.6	
	DCGT090208	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.8	
	DCGW110302	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.2	
	DCGW110304	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.4	
	DCGW110308	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.8	
	DCGT110302	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.2	
	DCGT110304	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.4	
	DCGT110308	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.8	
	DCGW11T302	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.2	
	DCGW11T304	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.4	
	DCGW11T306	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.6	
	DCGW11T308	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


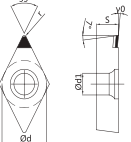

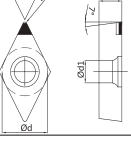

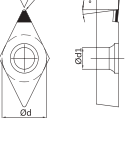

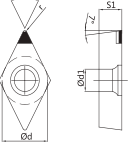

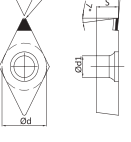
Threading

Parting / Grooving


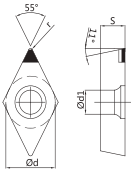

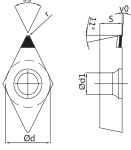

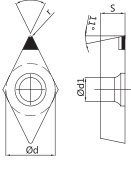

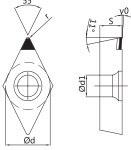

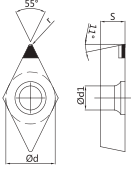

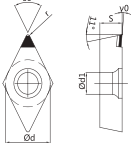
Miniature Tool

DC Rhombic 55°
Positive 7°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	DCGT11T302	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.2	
	DCGT11T304	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.4	
	DCGT11T306	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.6	
	DCGT11T308	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.8	
	DCGW110402	●	●	●	●	●		—	Φ9.525	4.76	4.5	0.2	
	DCGW110404	●	●	●	●	●		—	Φ9.525	4.76	4.5	0.4	
	DCGW110406	●	●	●	●	●		—	Φ9.525	4.76	4.5	0.6	
	DCGT110402	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.2	
	DCGT110404	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.4	
	DCGT110406	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.6	
	DCGT110408	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.8	
	DCGW150404	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.4	
	DCGW150406	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.6	
	DCGW150408	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.8	
	DCGW150410	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.0	
	DCGW150412	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.2	
	DCGW150416	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.6	
	DCGT150404	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.4	
	DCGT150406	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.6	
	DCGT150408	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.8	
	DCGT150410	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.0	
	DCGT150412	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.2	
	DCGT150416	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.6	

DP Rhombic 55°
Positive 11°


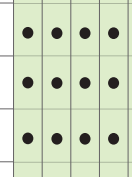
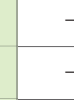
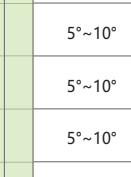
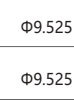
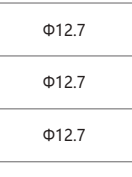
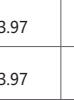


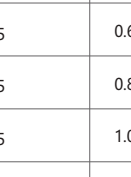
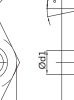
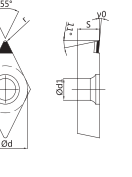
Insert shape	Designation	Material code					Rake angle (γ ₀)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	DPGW070202	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.2	
	DPGW070204	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.4	
	DPGW070206	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.6	
	DPGW070208	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.8	
	DPGT070202	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.2	
	DPGT070204	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.4	
	DPGT070206	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.6	
	DPGT070208	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.8	
	DPGW090202	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.2	
	DPGW090204	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.4	
	DPGW090206	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.6	
	DPGW090208	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.8	
	DPGT090202	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.2	
	DPGT090204	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.4	
	DPGT090206	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.6	
	DPGT090208	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.8	
	DPGW110302	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.2	
	DPGW110304	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.4	
	DPGW110306	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.6	
	DPGW110308	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.8	
	DPGT110302	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.2	
	DPGT110304	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.4	
	DPGT110306	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.6	
	DPGT110308	●	●	●	●	●	5°~10°	Φ9.525	3.18	3.4	0.8	

Insert


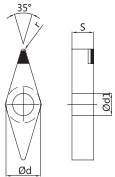
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

DP Rhombic 55°
Positive 11°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	DPGW11T302	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.2	
	DPGW11T304	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.4	
	DPGW11T306	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.6	
	DPGW11T308	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.8	
	DPGT11T302	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.2	
	DPGT11T304	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.4	
	DPGT11T306	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.6	
	DPGT11T308	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.8	
	DPGW110402	●	●	●	●	●		—	Φ9.525	4.76	4.4	0.2	
	DPGW110404	●	●	●	●	●		—	Φ9.525	4.76	4.4	0.4	
	DPGW110406	●	●	●	●	●		—	Φ9.525	4.76	4.4	0.6	
	DPGW110408	●	●	●	●	●		—	Φ9.525	4.76	4.4	0.8	
	DPGT110402	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.2	
	DPGT110404	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.4	
	DPGT110406	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.6	
	DPGT110408	●	●	●	●	●		5°~10°	Φ9.525	4.76	4.5	0.8	
	DPGW150404	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.4	
	DPGW150406	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.6	
	DPGW150408	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.8	
	DPGW150410	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.0	
	DPGW150412	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.2	
	DPGT150404	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.4	
	DPGT150406	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.6	
	DPGT150408	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.8	
	DPGT150410	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.0	
	DPGT150412	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.2	


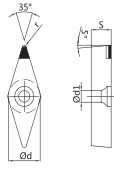

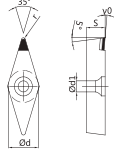

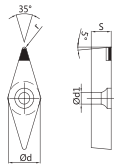

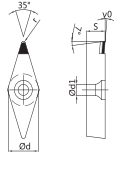
VN Rhombic 35°
Negative

Insert shape	Designation	Material code						rake angle (γ ₀)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	VNGA160402	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.2	
	VNGA160404	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.4	
	VNGA160408	●	●	●	●	●		—	Φ9.525	4.76	3.8	0.8	
	VNGA160410	●	●	●	●	●		—	Φ9.525	4.76	3.8	1.0	
	VNGA160412	●	●	●	●	●		—	Φ9.525	4.76	3.8	1.2	


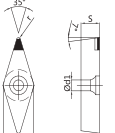

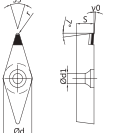

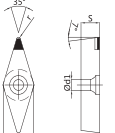

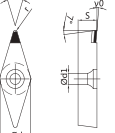

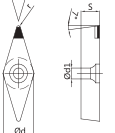

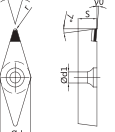
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

VB Rhombic 35°
Positive 5°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle (γ_0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter ($\Phi d1$)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	VBGW110302	●	●	●	●	●	—	$\Phi 6.35$	3.18	2.8	0.2		
	VBGW110304	●	●	●	●	●	—	$\Phi 6.35$	3.18	2.8	0.4		
	VBGW110306	●	●	●	●	●	—	$\Phi 6.35$	3.18	2.8	0.6		
	VBGW110308	●	●	●	●	●	—	$\Phi 6.35$	3.18	2.8	0.8		
	VBGT110302	●	●	●	●	●	3°~5°	$\Phi 6.35$	3.18	2.8	0.2		
	VBGT110304	●	●	●	●	●	3°~5°	$\Phi 6.35$	3.18	2.8	0.4		
	VBGT110306	●	●	●	●	●	3°~5°	$\Phi 6.35$	3.18	2.8	0.6		
	VBGT110308	●	●	●	●	●	3°~5°	$\Phi 6.35$	3.18	2.8	0.8		
	VBGW160404	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	0.4		
	VBGW160406	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	0.6		
	VBGW160408	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	0.8		
	VBGW160410	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	1.0		
	VBGW160412	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	1.2		
	VBGT160404	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	0.4		
	VBGT160406	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	0.6		
	VBGT160408	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	0.8		
	VBGT160410	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	1.0		
	VBGT160412	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	1.2		

VC Rhombic 35°
Positive 7

Insert shape	Designation	Material code					Rake angle (γ_0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter ($\Phi d1$)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	VCGW080202	●	●	●	●	●	—	$\Phi 4.76$	2.38	2.3	0.2	
	VCGW080204	●	●	●	●	●	—	$\Phi 4.76$	2.38	2.3	0.4	
	VCGW080208	●	●	●	●	●	—	$\Phi 4.76$	2.38	2.3	0.8	
	VCGT080202	●	●	●	●	●	3°~5°	$\Phi 4.76$	2.38	2.3	0.2	
	VCGT080204	●	●	●	●	●	3°~5°	$\Phi 4.76$	2.38	2.3	0.4	
	VCGT080208	●	●	●	●	●	3°~5°	$\Phi 4.76$	2.38	2.3	0.8	
	VCGW110302	●	●	●	●	●	—	$\Phi 6.35$	3.18	2.8	0.2	
	VCGW110304	●	●	●	●	●	—	$\Phi 6.35$	3.18	2.8	0.4	
	VCGW110308	●	●	●	●	●	—	$\Phi 6.35$	3.18	2.8	0.8	
	VCGT110302	●	●	●	●	●	3°~5°	$\Phi 6.35$	3.18	2.8	0.2	
	VCGT110304	●	●	●	●	●	3°~5°	$\Phi 6.35$	3.18	2.8	0.4	
	VCGT110308	●	●	●	●	●	3°~5°	$\Phi 6.35$	3.18	2.8	0.8	
	VCGW160404	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	0.4	
	VCGW160408	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	0.8	
	VCGW160410	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	1.0	
	VCGW160412	●	●	●	●	●	—	$\Phi 9.525$	4.76	4.4	1.2	
	VCGT160404	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	0.4	
	VCGT160408	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	0.8	
	VCGT160410	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	1.0	
	VCGT160412	●	●	●	●	●	5°~10°	$\Phi 9.525$	4.76	4.4	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


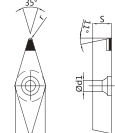

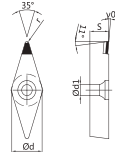

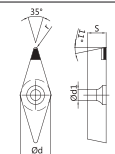

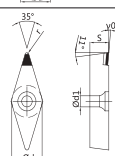
Threading

Parting / Grooving


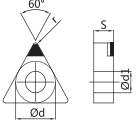
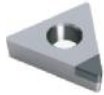
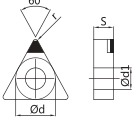
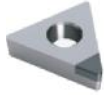
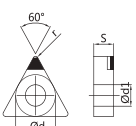
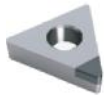
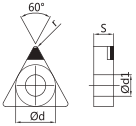
Miniature Tool

VP Rhombic 35°
Positive 11°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	VPGW080202	●	●	●	●	●		—	Φ4.76	2.38	2.3	0.2	
	VPGW080204	●	●	●	●	●		—	Φ4.76	2.38	2.3	0.4	
	VPGW080208	●	●	●	●	●		—	Φ4.76	2.38	2.3	0.8	
	VPGT080202	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.3	0.2	
	VPGT080204	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.3	0.4	
	VPGT080208	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.3	0.8	
	VPGW110302	●	●	●	●	●		—	Φ6.35	3.18	2.8	0.2	
	VPGW110304	●	●	●	●	●		—	Φ6.35	3.18	2.8	0.4	
	VPGW110308	●	●	●	●	●		—	Φ6.35	3.18	2.8	0.8	
	VPGT110302	●	●	●	●	●		3°~5°	Φ6.35	3.18	2.8	0.2	
	VPGT110304	●	●	●	●	●		3°~5°	Φ6.35	3.18	2.8	0.4	
	VPGT110308	●	●	●	●	●		3°~5°	Φ6.35	3.18	2.8	0.8	

TN Triangular 60°
Negative

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	TNGA110302	●	●	●	●	●	—	Φ6.35	3.18	2.3	0.2	
	TNGA110304	●	●	●	●	●	—	Φ6.35	3.18	2.3	0.4	
	TNGA110308	●	●	●	●	●	—	Φ6.35	3.18	2.3	0.8	
	TNGA160404	●	●	●	●	●	—	Φ9.525	4.76	3.8	0.4	
	TNGA160408	●	●	●	●	●	—	Φ9.525	4.76	3.8	0.8	
	TNGA160412	●	●	●	●	●	—	Φ9.525	4.76	3.8	1.2	
	TNGA160416	●	●	●	●	●	—	Φ9.525	4.76	3.8	1.6	
	TNGA220408	●	●	●	●	●	—	Φ12.7	4.76	5.16	0.8	
	TNGA220412	●	●	●	●	●	—	Φ12.7	4.76	5.16	1.2	
	TNGA220416	●	●	●	●	●	—	Φ12.7	4.76	5.16	1.6	
	TNGA270608	●	●	●	●	●	—	Φ15.875	6.35	6.35	0.8	
	TNGA270612	●	●	●	●	●	—	Φ15.875	6.35	6.35	1.2	
	TNGA270616	●	●	●	●	●	—	Φ15.875	6.35	6.35	1.6	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


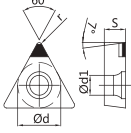
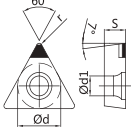

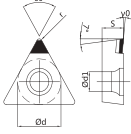

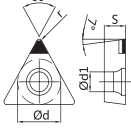

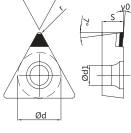
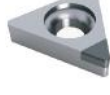
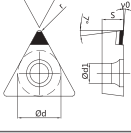

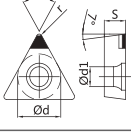
Threading

Parting, Grooving

Miniature Tool

TC Triangular 60°
Positive 7°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle (γ_0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd_1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	TCGW060102	●	●	●	●	●	—	$\Phi 3.97$	1.59	2.2	0.2		
	TCGW060104	●	●	●	●	●	—	$\Phi 3.97$	1.59	2.2	0.4		
	TCGW06T102	●	●	●	●	●	—	$\Phi 3.97$	1.98	2.2	0.2		
	TCGW06T104	●	●	●	●	●	—	$\Phi 3.97$	1.98	2.2	0.4		
	TCGW060202	●	●	●	●	●	—	$\Phi 3.97$	2.38	2.2	0.2		
	TCGW060204	●	●	●	●	●	—	$\Phi 3.97$	2.38	2.2	0.4		
	TCGT060202	●	●	●	●	●	3°~5°	$\Phi 3.97$	2.38	2.2	0.2		
	TCGT060204	●	●	●	●	●	3°~5°	$\Phi 3.97$	2.38	2.2	0.4		
	TCGW080202	●	●	●	●	●	—	$\Phi 4.76$	2.38	2.3	0.2		
	TCGW080204	●	●	●	●	●	—	$\Phi 4.76$	2.38	2.3	0.4		
	TCGW080206	●	●	●	●	●	—	$\Phi 4.76$	2.38	2.3	0.6		
	TCGT080202	●	●	●	●	●	3°~5°	$\Phi 4.76$	2.38	2.3	0.2		
	TCGT080204	●	●	●	●	●	3°~5°	$\Phi 4.76$	2.38	2.3	0.4		
	TCGT080206	●	●	●	●	●	3°~5°	$\Phi 4.76$	2.38	2.3	0.6		
	TCGW090202	●	●	●	●	●	—	$\Phi 5.56$	2.38	2.3	0.2		
	TCGW090204	●	●	●	●	●	—	$\Phi 5.56$	2.38	2.3	0.4		
	TCGW090208	●	●	●	●	●	—	$\Phi 5.56$	2.38	2.3	0.8		
	TCGT090202	●	●	●	●	●	3°~5°	$\Phi 5.56$	2.38	2.3	0.2		
	TCGT090204	●	●	●	●	●	3°~5°	$\Phi 5.56$	2.38	2.3	0.4		
	TCGT090208	●	●	●	●	●	3°~5°	$\Phi 5.56$	2.38	2.3	0.8		
	TCGW110202	●	●	●	●	●	—	$\Phi 6.35$	2.38	2.3	0.2		
	TCGW110204	●	●	●	●	●	—	$\Phi 6.35$	2.38	2.3	0.4		
	TCGW110208	●	●	●	●	●	—	$\Phi 6.35$	2.38	2.3	0.8		

TC Triangular 60°
Positive 7°

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	TCGT110202	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.2	
	TCGT110204	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.4	
	TCGT110208	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.8	
	TCGW110302	●	●	●	●	●	—	Φ6.35	3.18	2.8	0.2	
	TCGW110304	●	●	●	●	●	—	Φ6.35	3.18	2.8	0.4	
	TCGW110308	●	●	●	●	●	—	Φ6.35	3.18	2.8	0.8	
	TCGT110302	●	●	●	●	●	3°~5°	Φ6.35	3.18	2.8	0.2	
	TCGT110304	●	●	●	●	●	3°~5°	Φ6.35	3.18	2.8	0.4	
	TCGT110308	●	●	●	●	●	3°~5°	Φ6.35	3.18	2.8	0.8	
	TCGW11T304	●	●	●	●	●	—	Φ6.35	3.97	2.8	0.4	
	TCGW11T306	●	●	●	●	●	—	Φ6.35	3.97	2.8	0.6	
	TCGW11T308	●	●	●	●	●	—	Φ6.35	3.97	2.8	0.8	
	TCGT11T304	●	●	●	●	●	5°~10°	Φ6.35	3.97	2.8	0.4	
	TCGT11T306	●	●	●	●	●	5°~10°	Φ6.35	3.97	2.8	0.6	
	TCGT11T308	●	●	●	●	●	5°~10°	Φ6.35	3.97	2.8	0.8	
	TCGW16T304	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.4	
	TCGW16T308	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.8	
	TCGW16T312	●	●	●	●	●	—	Φ9.525	3.97	4.4	1.2	
	TCGT16T304	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	0.4	
	TCGT16T308	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	0.8	
	TCGT16T312	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	1.2	
	TCGW160404	●	●	●	●	●	—	Φ9.525	4.76	4.4	0.4	
	TCGW160408	●	●	●	●	●	—	Φ9.525	4.76	4.4	0.8	
	TCGW160412	●	●	●	●	●	—	Φ9.525	4.76	4.4	1.2	
	TCGT160404	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	0.4	
	TCGT160408	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	0.8	
	TCGT160412	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


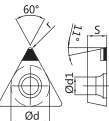
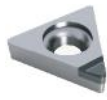
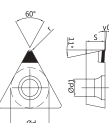

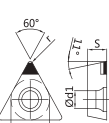

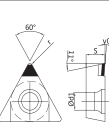

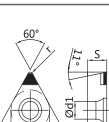

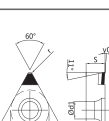

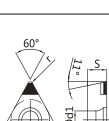

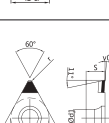
Treading

Parting / Grooving

Miniature Tool

TP Triangular 60°
Positive 11°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting ,Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	TPGW080202	●	●	●	●	●		—	Φ4.76	2.38	2.4	0.2	
	TPGW080204	●	●	●	●	●		—	Φ4.76	2.38	2.4	0.4	
	TPGW080206	●	●	●	●	●		—	Φ4.76	2.38	2.4	0.6	
	TPGT080202	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.4	0.2	
	TPGT080204	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.4	0.4	
	TPGT080206	●	●	●	●	●		3°~5°	Φ4.76	2.38	2.4	0.6	
	TPGW090202	●	●	●	●	●		—	Φ5.56	2.38	2.8	0.2	
	TPGW090204	●	●	●	●	●		—	Φ5.56	2.38	2.8	0.4	
	TPGW090208	●	●	●	●	●		—	Φ5.56	2.38	2.8	0.8	
	TPGT090202	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.8	0.2	
	TPGT090204	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.8	0.4	
	TPGT090208	●	●	●	●	●		3°~5°	Φ5.56	2.38	2.8	0.8	
	TPGW110202	●	●	●	●	●		—	Φ6.35	2.38	2.8	0.2	
	TPGW110204	●	●	●	●	●		—	Φ6.35	2.38	2.8	0.4	
	TPGW110208	●	●	●	●	●		—	Φ6.35	2.38	2.8	0.8	
	TPGT110202	●	●	●	●	●		3°~5°	Φ6.35	2.38	2.8	0.2	
	TPGT110204	●	●	●	●	●		3°~5°	Φ6.35	2.38	2.8	0.4	
	TPGT110208	●	●	●	●	●		3°~5°	Φ6.35	2.38	2.8	0.8	
	TPGW110302	●	●	●	●	●		—	Φ6.35	3.18	2.8	0.2	
	TPGW110304	●	●	●	●	●		—	Φ6.35	3.18	2.8	0.4	
	TPGW110308	●	●	●	●	●		—	Φ6.35	3.18	2.8	0.8	
	TPGT110302	●	●	●	●	●		3°~5°	Φ6.35	3.18	3.4	0.2	
	TPGT110304	●	●	●	●	●		3°~5°	Φ6.35	3.18	3.4	0.4	
	TPGT110308	●	●	●	●	●		3°~5°	Φ6.35	3.18	3.4	0.8	

TP Triangular 60°
Positive 11°

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	TPGW160304	●	●	●	●	●	—	Φ9.525	3.18	4.4	0.4	
	TPGW160308	●	●	●	●	●	—	Φ9.525	3.18	4.4	0.8	
	TPGW160312	●	●	●	●	●	—	Φ9.525	3.18	4.4	1.2	
	TPGT160304	●	●	●	●	●	3°~5°	Φ9.525	3.18	4.4	0.4	
	TPGT160308	●	●	●	●	●	3°~5°	Φ9.525	3.18	4.4	0.8	
	TPGT160312	●	●	●	●	●	3°~5°	Φ9.525	3.18	4.4	1.2	
	TPGW16T304	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.4	
	TPGW16T308	●	●	●	●	●	—	Φ9.525	3.97	4.4	0.8	
	TPGW16T312	●	●	●	●	●	—	Φ9.525	3.97	4.4	1.2	
	TPGT16T304	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	0.4	
	TPGT16T308	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	0.8	
	TPGT16T312	●	●	●	●	●	5°~10°	Φ9.525	3.97	4.4	1.2	
	TPGW160402	●	●	●	●	●	—	Φ9.525	4.76	4.4	0.2	
	TPGW160404	●	●	●	●	●	—	Φ9.525	4.76	4.4	0.4	
	TPGW160408	●	●	●	●	●	—	Φ9.525	4.76	4.4	0.8	
	TPGW160412	●	●	●	●	●	—	Φ9.525	4.76	4.4	1.2	
	TPGT160402	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	0.2	
	TPGT160404	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	0.4	
	TPGT160408	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	0.8	
	TPGT160412	●	●	●	●	●	5°~10°	Φ9.525	4.76	4.4	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving


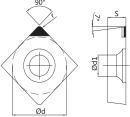

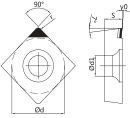

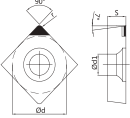

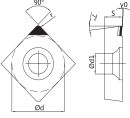

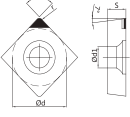

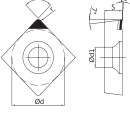

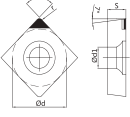

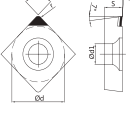
Miniature Tool

SN Square 90°
Negative

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Insert shape	Designation	Material code						rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	SNGA090304	●	●	●	●	●		—	Φ9.525	3.18	3.8	0.4	
	SNGA090308	●	●	●	●	●		—	Φ9.525	3.18	3.8	0.8	
	SNGA090312	●	●	●	●	●		—	Φ9.525	3.18	3.8	1.2	
	SNGA120404	●	●	●	●	●		—	Φ12.7	4.76	5.16	0.4	
	SNGA120408	●	●	●	●	●		—	Φ12.7	4.76	5.16	0.8	
	SNGA120412	●	●	●	●	●		—	Φ12.7	4.76	5.16	1.2	
	SNGA150604	●	●	●	●	●		—	Φ15.875	6.35	6.35	0.4	
	SNGA150608	●	●	●	●	●		—	Φ15.875	6.35	6.35	0.8	
	SNGA150612	●	●	●	●	●		—	Φ15.875	6.35	6.35	1.2	
	SNGA150616	●	●	●	●	●		—	Φ15.875	6.35	6.35	1.6	

SC Square 90°
Positive 7°

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	SCGW050202	●	●	●	●	●	—	Φ5.56	2.38	2.2	0.2	
	SCGW050204	●	●	●	●	●	—	Φ5.56	2.38	2.2	0.4	
	SCGT050202	●	●	●	●	●	3°~5°	Φ5.56	2.38	2.2	0.2	
	SCGT050204	●	●	●	●	●	3°~5°	Φ5.56	2.38	2.2	0.4	
	SCGW060202	●	●	●	●	●	—	Φ6.35	2.38	2.2	0.2	
	SCGW060204	●	●	●	●	●	—	Φ6.35	2.38	2.2	0.4	
	SCGW060208	●	●	●	●	●	—	Φ6.35	2.38	2.2	0.8	
	SCGT060202	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.2	0.2	
	SCGT060204	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.2	0.4	
	SCGT060208	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.2	0.8	
	SCGW070202	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.2	
	SCGW070204	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.4	
	SCGW070208	●	●	●	●	●	—	Φ7.94	2.38	3.4	0.8	
	SCGT070202	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.2	
	SCGT070204	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.4	
	SCGT070208	●	●	●	●	●	3°~5°	Φ7.94	2.38	3.4	0.8	
	SCGW090302	●	●	●	●	●	—	Φ9.525	3.18	4.4	0.2	
	SCGW090304	●	●	●	●	●	—	Φ9.525	3.18	4.4	0.4	
	SCGW090308	●	●	●	●	●	—	Φ9.525	3.18	4.4	0.8	
	SCGT090302	●	●	●	●	●	3°~5°	Φ9.525	3.18	4.4	0.2	
	SCGT090304	●	●	●	●	●	3°~5°	Φ9.525	3.18	4.4	0.4	
	SCGT090308	●	●	●	●	●	3°~5°	Φ9.525	3.18	4.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


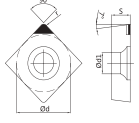

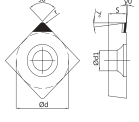

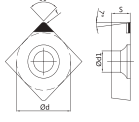
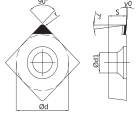
Threading

Parting, Grooving


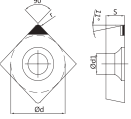

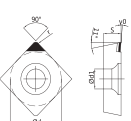

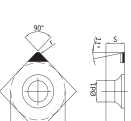

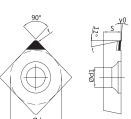

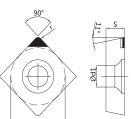

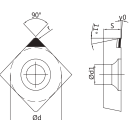

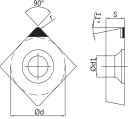

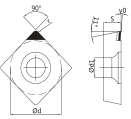
Miniature Tool

SC Square 90°
Positive 7°

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile	
		TDA1000	TDA1500	TDC2000	MCD	ND							
	SCGW09T302	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.2	
	SCGW09T304	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.4	
	SCGW09T308	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.8	
	SCGT09T302	●	●	●	●	●		3°~5°	Φ9.525	3.97	4.4	0.2	
	SCGT09T304	●	●	●	●	●		3°~5°	Φ9.525	3.97	4.4	0.4	
	SCGT09T308	●	●	●	●	●		3°~5°	Φ9.525	3.97	4.4	0.8	
	SCGW120404	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.4	
	SCGW120408	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.8	
	SCGW120412	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.2	
	SCGT120404	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.4	
	SCGT120408	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.8	
	SCGT120412	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.2	

SP Square 90°
Positive 11°

Insert shape	Designation	Material code					Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	SPGW060202	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.2	
	SPGW060204	●	●	●	●	●	—	Φ6.35	2.38	2.8	0.4	
	SPGT060202	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.2	
	SPGT060204	●	●	●	●	●	3°~5°	Φ6.35	2.38	2.8	0.4	
	SPGW070202	●	●	●	●	●	—	Φ7.97	2.38	3.4	0.2	
	SPGW070204	●	●	●	●	●	—	Φ7.97	2.38	3.4	0.4	
	SPGW070208	●	●	●	●	●	—	Φ7.97	2.38	3.4	0.8	
	SPGT070202	●	●	●	●	●	3°~5°	Φ7.97	2.38	3.4	0.2	
	SPGT070204	●	●	●	●	●	3°~5°	Φ7.97	2.38	3.4	0.4	
	SPGT070208	●	●	●	●	●	3°~5°	Φ7.97	2.38	3.4	0.8	
	SPGW070302	●	●	●	●	●	—	Φ7.97	3.18	3.4	0.2	
	SPGW070304	●	●	●	●	●	—	Φ7.97	3.18	3.4	0.4	
	SPGW070308	●	●	●	●	●	—	Φ7.97	3.18	3.4	0.8	
	SPGT070302	●	●	●	●	●	3°~5°	Φ7.97	3.18	3.4	0.2	
	SPGT070304	●	●	●	●	●	3°~5°	Φ7.97	3.18	3.4	0.4	
	SPGT070308	●	●	●	●	●	3°~5°	Φ7.97	3.18	3.4	0.8	
	SPGW090302	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.2	
	SPGW090304	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.4	
	SPGW090308	●	●	●	●	●	—	Φ9.525	3.18	3.4	0.8	
	SPGT090302	●	●	●	●	●	3°~5°	Φ9.525	3.18	3.4	0.2	
	SPGT090304	●	●	●	●	●	3°~5°	Φ9.525	3.18	3.4	0.4	
	SPGT090308	●	●	●	●	●	3°~5°	Φ9.525	3.18	3.4	0.8	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


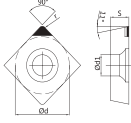

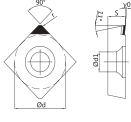

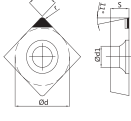

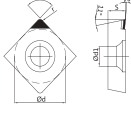
Threading

Parting / Grooving


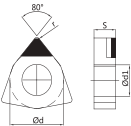
Miniature Tool

SP Square 90°
Positive 11°


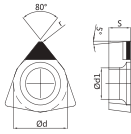

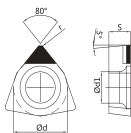

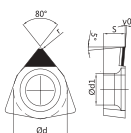
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Insert shape	Designation	Material code						rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	SPGW09T304	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.4	
	SPGW09T306	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.6	
	SPGW09T308	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.8	
	SPGT09T304	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.4	
	SPGT09T306	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.6	
	SPGT09T308	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.8	
	SPGW120404	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.4	
	SPGW120408	●	●	●	●	●		—	Φ12.7	4.76	5.5	0.8	
	SPGW120412	●	●	●	●	●		—	Φ12.7	4.76	5.5	1.2	
	SPGT120404	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.4	
	SPGT120408	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	0.8	
	SPGT120412	●	●	●	●	●		5°~10°	Φ12.7	4.76	5.5	1.2	

WN Trigon 80°
Negative

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	WNGA080404	●	●	●	●	●	—	Φ12.7	4.76	5.16	0.4	
	WNGA080408	●	●	●	●	●	—	Φ12.7	4.76	5.16	0.8	
	WNGA080412	●	●	●	●	●	—	Φ12.7	4.76	5.16	1.2	

WB Trigon 80°
Positive 5°

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	WBGW060102	●	●	●	●	●	—	Φ3.97	1.59	2.2	0.2	
	WBGW060104	●	●	●	●	●	—	Φ3.97	1.59	2.2	0.4	
	WBGW080202	●	●	●	●	●	—	Φ4.76	2.38	2.4	0.2	
	WBGW080204	●	●	●	●	●	—	Φ4.76	2.38	2.4	0.4	
	WBGTO80202	●	●	●	●	●	3°~5°	Φ4.76	2.38	2.4	0.2	
	WBGTO80204	●	●	●	●	●	3°~5°	Φ4.76	2.38	2.4	0.4	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


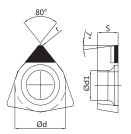

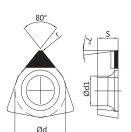

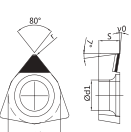

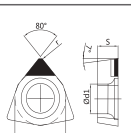

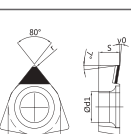
Threading

Parting, Grooving


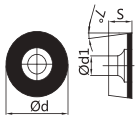
Miniature Tool

WC Trigon 80°
Positive 7°


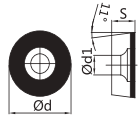
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Insert shape	Designation	Material code						Rake angle (γ0)	Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND							
	WCGW020102	●	●	●	●	●		—	Φ3.97	1.59	2.3	0.2	
	WCGW020104	●	●	●	●	●		—	Φ3.97	1.59	2.3	0.4	
	WCGW050302	●	●	●	●	●		—	Φ7.94	3.18	3.5	0.2	
	WCGW050304	●	●	●	●	●		—	Φ7.94	3.18	3.5	0.4	
	WCGW050308	●	●	●	●	●		—	Φ7.94	3.18	3.5	0.8	
	WCGT050302	●	●	●	●	●		5°~10°	Φ7.94	3.18	3.5	0.2	
	WCGT050304	●	●	●	●	●		5°~10°	Φ7.94	3.18	3.5	0.4	
	WCGT050308	●	●	●	●	●		5°~10°	Φ7.94	3.18	3.5	0.8	
	WCGW06T302	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.2	
	WCGW06T304	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.4	
	WCGW06T308	●	●	●	●	●		—	Φ9.525	3.97	4.4	0.8	
	WCGT06T302	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.2	
	WCGT06T304	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.4	
	WCGT06T308	●	●	●	●	●		5°~10°	Φ9.525	3.97	4.4	0.8	


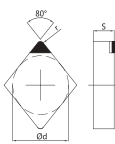
RC Round
Positive 7°

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	RCGW060200	●	●	●	●	●		Φ6	2.38	2.8	—	
	RCGW080300	●	●	●	●	●		Φ8	3.18	3.4	—	
	RCGW100300	●	●	●	●	●		Φ10	3.18	3.6	—	
	RCGW120400	●	●	●	●	●		Φ12	4.76	4.2	—	
	RCGW160600	●	●	●	●	●		Φ16	6.35	5.2	—	

RP Round
Positive 11°

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	RPGW080300	●	●	●	●	●		Φ8	3.18	3.4	—	
	RPGW100400	●	●	●	●	●		Φ10	4.76	3.8	—	
	RPGW120400	●	●	●	●	●		Φ12	4.76	4.2	—	
	RPGW160400	●	●	●	●	●		Φ16	4.76	5.2	—	

CN Rhombic 80°
Negative

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	CNGN120404	●	●	●	●	●		Φ12.7	4.76	—	0.4	
	CNGN120408	●	●	●	●	●		Φ12.7	4.76	—	0.8	
	CNGN120412	●	●	●	●	●		Φ12.7	4.76	—	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting / Grooving

Miniature Tool

TN Triangular 60°
Negative

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	TNGN110302	●	●	●	●	●	—	Φ6.35	3.18	—	0.2	
	TNGN110304	●	●	●	●	●	—	Φ6.35	3.18	—	0.4	
	TNGN110308	●	●	●	●	●	—	Φ6.35	3.18	—	0.8	
	TNGN160304	●	●	●	●	●	—	Φ9.525	3.18	—	0.4	
	TNGN160308	●	●	●	●	●	—	Φ9.525	3.18	—	0.8	
	TNGN160312	●	●	●	●	●	—	Φ9.525	3.18	—	1.2	
	TNGN160404	●	●	●	●	●	—	Φ9.525	4.76	—	0.4	
	TNGN160408	●	●	●	●	●	—	Φ9.525	4.76	—	0.8	
	TNGN160412	●	●	●	●	●	—	Φ9.525	4.76	—	1.2	
	TNGN160416	●	●	●	●	●	—	Φ9.525	4.76	—	1.6	

TP Triangular 60°
Positive 11°

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	TPGN090202	●	●	●	●	●		Φ5.56	2.38	—	0.2	
	TPGN090204	●	●	●	●	●		Φ5.56	2.38	—	0.4	
	TPGN090208	●	●	●	●	●		Φ5.56	2.38	—	0.8	
	TPGN110302	●	●	●	●	●		Φ6.35	3.18	—	0.2	
	TPGN110304	●	●	●	●	●		Φ6.35	3.18	—	0.4	
	TPGN110308	●	●	●	●	●		Φ6.35	3.18	—	0.8	
	TPGN160304	●	●	●	●	●		Φ9.525	3.18	—	0.4	
	TPGN160308	●	●	●	●	●		Φ9.525	3.18	—	0.8	
	TPGN160312	●	●	●	●	●		Φ9.525	3.18	—	1.2	
	TPGN160404	●	●	●	●	●		Φ9.525	4.76	—	0.4	
	TPGN160408	●	●	●	●	●		Φ9.525	4.76	—	0.8	
	TPGN160412	●	●	●	●	●		Φ9.525	4.76	—	1.2	
	TPGN160416	●	●	●	●	●		Φ9.525	4.76	—	1.6	

SN Square 90°
Negative

Insert shape	Designation	Material code						Inscribed circle (Φd)	Thickness (s)	Inner hole diameter (Φd1)	Radius (r)	Insert profile
		TDA1000	TDA1500	TDC2000	MCD	ND						
	SNGN090302	●	●	●	●	●		Φ9.525	3.18	—	0.2	
	SNGN090304	●	●	●	●	●		Φ9.525	3.18	—	0.4	
	SNGN090308	●	●	●	●	●		Φ9.525	3.18	—	0.8	
	SNGN120404	●	●	●	●	●		Φ12.7	4.76	—	0.4	
	SNGN120408	●	●	●	●	●		Φ12.7	4.76	—	0.8	
	SNGN120412	●	●	●	●	●		Φ12.7	4.76	—	1.2	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

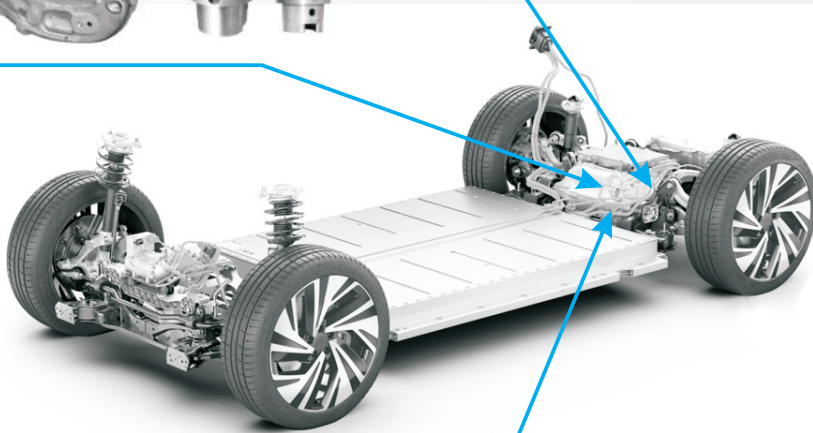
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

Electric vehicle industry solutions

Knuckle solution



Motor rear-end cover processing solution



Motor housing solution

Motor housing solution



PDEC30 Series - Face milling cutter

Applications:

General tool suitable for roughing and finishing milling of aluminium, copper and other non-ferrous metal surface.

- Diameter :D63-D250(Customizable)
- Z:3-20(Customizable)
- Holder type:standard milling holder

Advantages:

- Light weight, high strength aluminium body.
- Suitable for high efficiency face milling of roughing and finishing Internal coolant goes directly to tip, helpful for chipping removal, with better tool life.
- Flexible insert can regrind and retip, cutter can be reused to save cost.
- Cycle runout within 0.03mm, Axial runout within 0.003 to ensure the workpiece roughness.
- Adjusting the position with spanner is easy and convenient with max scope 2mm, that increases the regrinding numbers.



Compound finish boring tool with big diameter

Applications:

Aluminium parts of big diameter inner hole for Motor housing

Advantages:

- Light weight, high strength aluminium body.
- Suitable for precision adjustment of finishing machining.
- Simple, lasting body structure.
- The design of internal coolant going directly to insert edge and lubricating is helpful to increase tool life.
- Flexible insert and cartridge with low cost and high performance.
- Can be customized for special solution.

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

Motor rear-end cover processing solution



Indexable short hole drilling compound tool



Applications:
General tool suitable for rough and semi-finish machining of workpiece without precast hole.

- Advantages:**
- The integral design of tool holder and body with excellent rigidity.
 - Use special high strength steel with surface strengthening treatment, the tool body has better wear resistance performance.
 - Maximum chip flute design can get more smooth chip discharge.
 - Compound tool design can realize both rough and semi-finish machining requirements of the hole.
 - The insert installation angle with cutting balance design, it will reach slight cutting vibration, low machine spindle load, high cutting efficiency, better drilling precision and surface roughness.
 - Through change the material and cutting edge design of indexable inserts, the tool can be used in rough and semi-finish machining of various material workpieces.
 - It can be used as the basis of custom special solutions for customers.

Guide finish boring tool



Applications:
General tool for most area with high precision and production capability.

- Advantages:**
- With very high precision and machining ability, the flexible insert based on guide pad in the hole guiding and precision cutting to ensure the machining effect with high quality.
 - It ensures insert is assembled in the groove by suitable adjustment and clamping system.
 - The resistable insert produced with modern manufacturing process can be made with different shape edge and non-standard edge structure.
 - The design of internal coolant going directly to insert edge and lubricating is helpful to increase tool life.
 - Flexible insert and high wear resistance guide pad with low cost and high performance.
 - Can be customized for special solution.

Steering knuckle solution



PCD compound finish boring tool

Applications:
Used for the front and back surface machining of aluminum alloy steering knuckle bearing hole.

Advantages:

- Rough and finish machining integrated design, when improve working efficiency it does not reduce the machining quality;
- When machining back surface of bearing hole, compound milling structure no need change the tool and this will reduce the tool change time.
- Multi-cutting edge design, improve machining efficiency.



TDE30 series PCD corn milling tool with HSK holder

Applications:
Applied for end milling and side milling caliper hole surface, threaded hole surface of waterproof cover and other small surface.

Advantages:

- PCD corn end milling tool possesses higher machining efficiency and metal remove rate when it is used in large allowance cutting.
- Thread chip removing groove possesses better chip removing performance, and intergral structure can guarantee stable tool strength. Applied for semi-finish and rough machining.
- Applied for end milling, side milling, groove milling, profile milling and thread interpolation milling and other milling.
- PCD possesses high durability and toughness.

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

EXTERNAL TOOLHOLDER



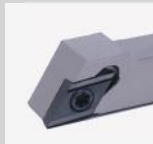
Multi-clamp Toolholder ----- A134-A139



Screw-on Clamp Toolholder ----- A140-A145



External Toolholder (Inch) ----- A146-A150



External Toolholder on Swiss Lathes --- A151-A152



Lever-Lock Toolholder ----- A153-A159

INTERNAL TOOLHOLDER



Multi-clamp Toolholder ----- A160-A161



Screw-on Clamp Toolholder ----- A162-A167



Steel Boring Bar with Coolant Hole --- A168-A174

PSC TOOLHOLDER

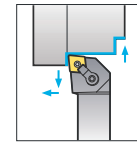
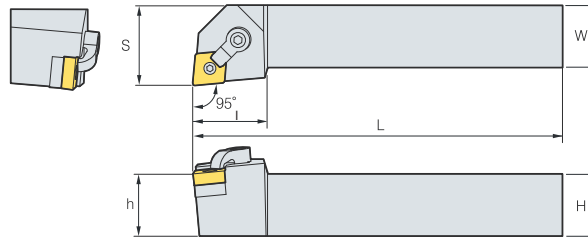


PSC Toolholder ----- A175-A208

MCLNR/L



CN □□



95°
R type insert

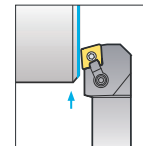
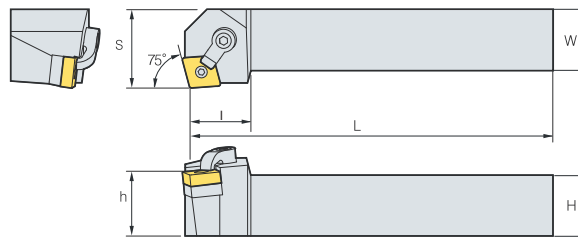
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
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MCLNR/L2020K12	20	20	125	25	20	32						
MCLNR/L2525M12	25	25	150	32	25	32						
MCLNR/L3232P12	32	32	170	40	32	32						
MCLNR/L2525M16	25	25	150	32	25	34	CN..1606..	CTM822	MC1604	L3.0&L4	ML0830	HL2217
MCLNR/L3232P16	32	32	170	40	32	34						
MCLNR/L3232P19	32	32	170	40	32	38	CN..1906..	CTM1022	MC1904	L4.0	ML0830	HL2217
MCLNR/L4040R19	40	40	200	50	40	38						

MCKNR/L



CN □□



75°
R type insert

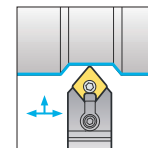
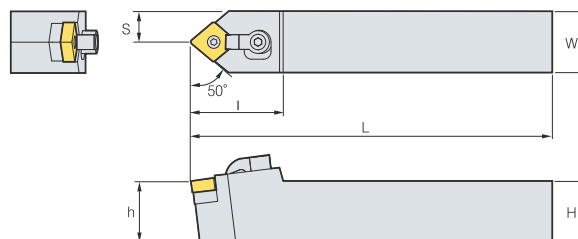
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
MCKNR/L1616H12	16	16	100	20	16	25	CN..1204..	CTM617	MC1204	L2.5&L3	ML0625	HL1814
MCKNR/L2020K12	20	20	125	25	20	32						
MCKNR/L2525M12	25	25	150	32	25	32						
MCKNR/L3232P12	32	32	170	40	32	32						

MCMNN



CN □□



50°
R type insert

(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
MCMNN1616H12	16	16	100	8	16	25	CN..1204..	CTM617	MC1204	L2.5&L3	ML0625	HL1814
MCMNN2020K12	20	20	125	10	20	32						
MCMNN2525M12	25	25	150	12.5	25	32						
MCMNN3232P12	32	32	170	16	32	32						

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

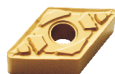
Threading

Parting, Grooving

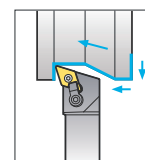
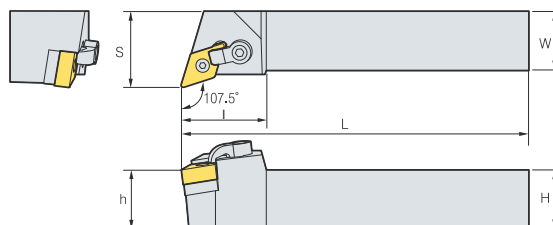
Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

MDQNR/L



DN □□



107.5°
R type insert

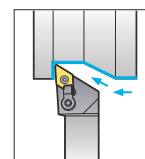
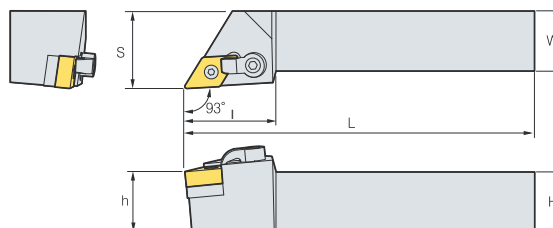
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
MDQNR/L1616H11	16	16	100	20	16	28	DN..1104..	CTM513	MD1103	L2&L3	ML0625	HL1814
MDQNR/L2020K11	20	20	125	25	20	32						
MDQNR/L2525M11	25	25	150	32	25	36						
MDQNR/L1616H15	16	16	100	20	16	28	DN..1504.. DN..1506..	CTM619	MD1506 MD1504	L2.5&L3	ML0625	HL2114
MDQNR/L2020K15	20	20	125	25	20	32						
MDQNR/L2525M15	25	25	150	32	25	36						
MDQNR/L3232P15	32	32	170	40	32	40						

MDJNR/L



DN □□



93°
R type insert

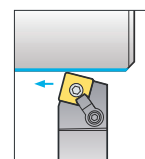
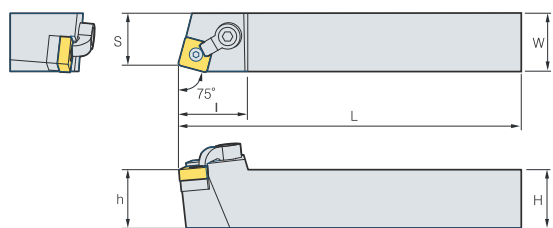
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
MDJNR/L1616H11	16	16	100	20	16	28	DN..1104..	CTM513	MD1103	L2&L3	ML0625	HL1814
MDJNR/L2020K11	20	20	125	25	20	32						
MDJNR/L2525M11	25	25	150	32	25	36						
MDJNR/L1616H15	16	16	100	20	16	28	DN..1504.. DN..1506..	CTM619	MD1506 MD1504	L2.5&L3	ML0625	HL2114
MDJNR/L2020K15	20	20	125	25	20	32						
MDJNR/L2525M15	25	25	150	32	25	36						
MDJNR/L3232P15	32	32	170	40	32	40						

MSBNR/L



SN □□



75°
R type insert

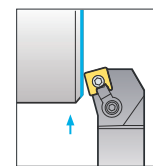
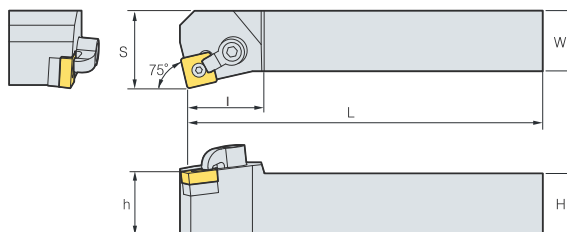
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
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MSBNR/L2020K12	20	20	125	17	20	32						
MSBNR/L2525M12	25	25	150	22	25	32						
MSBNR/L3232P12	32	32	170	27	32	32						

MSKNR/L



SN □□



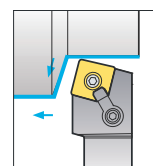
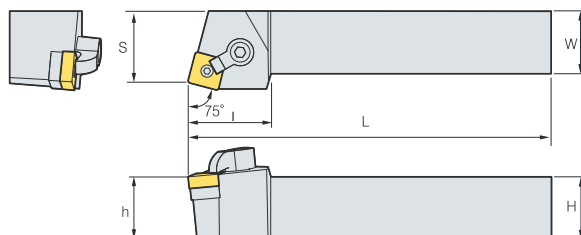
75°
R type insert

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
MSKNR/L1616H12	16	16	100	20	16	28	SN..1204..	CTM617	MS1204	L2.5&L3	ML0625	HL1814
MSKNR/L2020K12	20	20	125	25	20	32						
MSKNR/L2525M12	25	25	150	32	25	32						
MSKNR/L3232P12	32	32	170	40	32	32						
MSKNR/L2525M15	25	25	150	32	25	33	SN..1506..	CTM822	MS1504	L3.0&L4	ML0830	HL2217
MSKNR/L3232P19	32	32	170	40	32	35	SN..1906..	CTM1022	MS1904	L4.0	ML0830	HL2217

MSRNR/L



SN □□



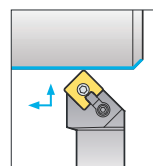
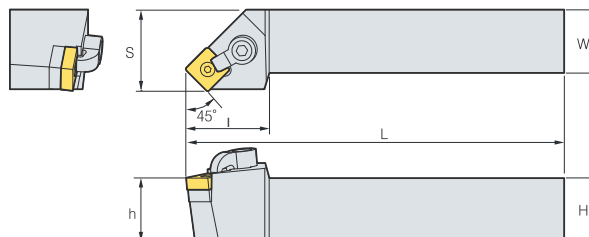
75°
R type insert

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	H	W	L	S	h	l						
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MSRNR/L2020K12	20	20	125	22	20	32						
MSRNR/L2525M12	25	25	150	27	25	32						
MSRNR/L3232P12	32	32	170	35	32	40						

MSSNR/L



SN □□



45°
R type insert

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
MSSNR/L1616H12	16	16	100	20	16	28	SN..1204..	CTM617	MS1204	L2.5&L3	ML0625	HL1814
MSSNR/L2020K12	20	20	125	25	25	28						
MSSNR/L2525M12	25	25	150	32	25	32						
MSSNR/L3232P12	32	32	170	40	32	35						
MSSNR/L2525M15	25	25	150	32	25	41	SN..1506..	CTM822	MS1504	L3.0&L4	ML0830	HL2217
MSSNR/L3232P15	32	32	170	40	32	42	SN..1906..	CTM1022	MS1904	L4.0	ML0830	HL2217
MSSNR/L3232P19	32	32	170	40	32	45						
MSSNR/L4040R19	40	40	200	50	40	45						

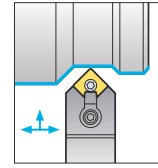
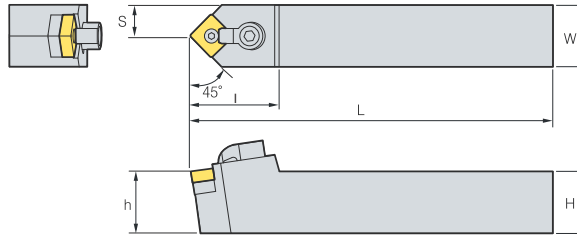
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting / Grooving
 Miniature Tool

MSDNN



SN □□



45°
R type insert

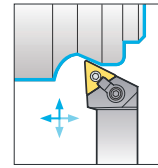
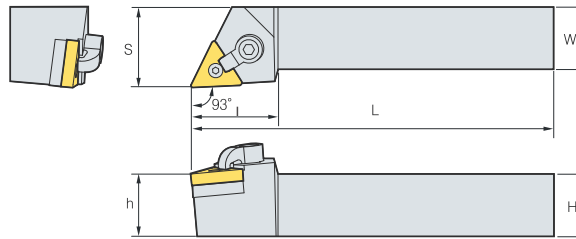
(mm)

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	H	W	L	S	h	l						
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MSDNN2020K12	20	20	125	10	20	28						
MSDNN2525M12	25	25	150	12.5	25	32						
MSDNN3232P12	32	32	170	16	32	35	SN..1506..	CTM0822	MS1504	L3.0&L4	ML0830	HL2217
MSDNN2525M15	25	25	150	12.5	25	43						
MSDNN3232P19	32	32	170	16	32	47						
MSDNN4040R19	40	40	200	20	40	47	SN..1906..	CTM1022	MS1904	L4.0	ML0830	HL2217

MTJNR/L



TN □□



93°
R type insert

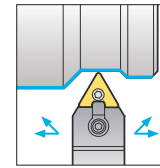
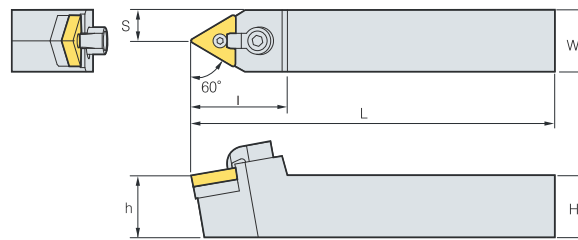
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
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MTJNR/L2020K16	20	20	125	25	20	32						
MTJNR/L2525M16	25	25	150	32	25	32						
MTJNR/L3232P16	32	32	170	40	32	35						
MTJNR/L2525M22	25	25	150	32	25	34	TN..2204..	CTM617	MT2204	L2.5&L4	ML0830	HL1917
MTJNR/L3232P22	32	32	170	40	32	35						

MTENN



TN □□



60°

R type insert

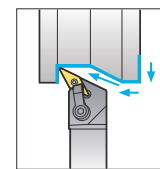
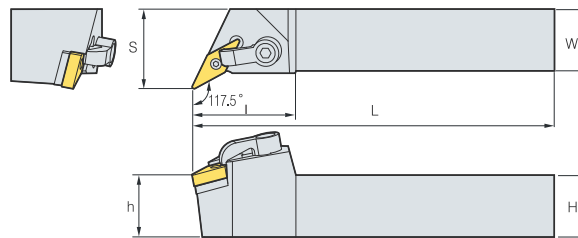
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
MTENN1616H16	16	16	100	8	16	28	TN..1604..	CTM513	MT1603	L2&L3	ML0625	HL1814
MTENN2020K16	20	20	125	10	20	32						
MTENN2525M16	25	25	150	12.5	25	32						
MTENN3232P16	32	32	170	16	32	35						

MVQNR/L



VN □□



117.5°

R type insert

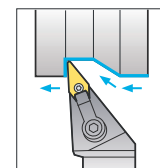
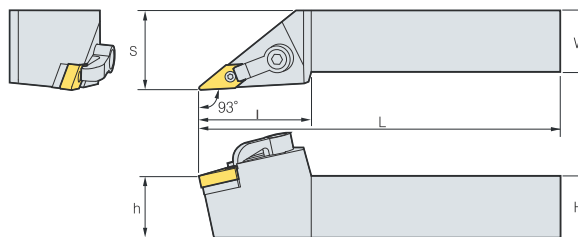
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
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MVQNR/L2020K16	20	20	125	25	20	25						
MVQNR/L2525M16	25	25	150	32	25	32						
MVQNR/L3232P16	32	32	170	40	32	40						

MVJNR/L



VN □□



93°

R type insert

(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
MVJNR/L1616H16	16	16	100	20	16	32	VN..1604..	CTM513	MV1603	L2&L3	ML0625	HL2414
MVJNR/L2020K16	20	20	125	25	20	37						
MVJNR/L2525M16	25	25	150	32	25	37						
MVJNR/L3232P16	32	32	170	40	32	37						

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

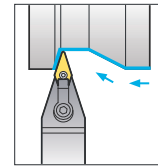
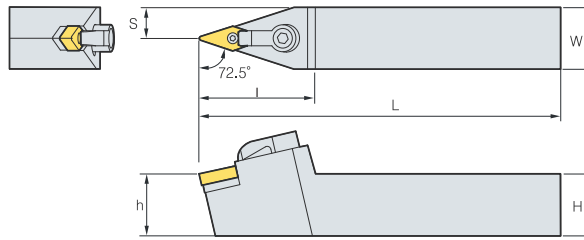
Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

MVVNN



VN □□



72.5°
R type insert

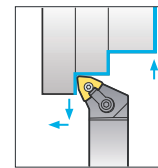
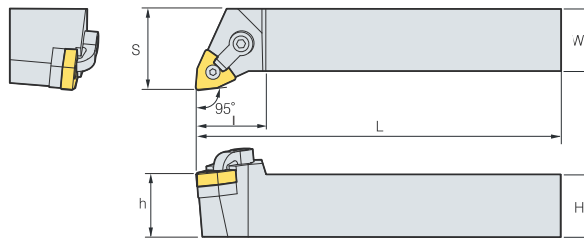
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
MVVNN1616H16	16	16	100	8	16	40	VN..1604..	CTM513	MT1603	L2&L3	ML0625	HL2114
MVVNN2020K16	20	20	125	10	20	42						
MVVNN2525M16	25	25	150	12.5	25	42						
MVVNN3232P16	32	32	170	16	32	42						

MWLNR/L



WN □□



95°
R type insert

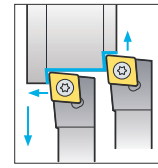
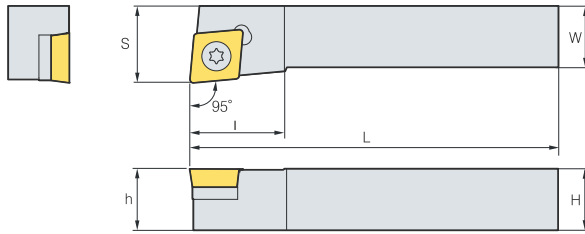
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	H	W	L	S	h	l						
MWLNR/L1616H06	16	16	100	20	16	32	WN..0604..	CTM513	MW0603	L2&L3	ML0625	HL1814
MWLNR/L2020K06	20	20	125	25	20	32						
MWLNR/L2525M06	25	25	150	32	25	32						
MWLNR/L1616H08	16	16	100	20	16	32	WN..0804..	CTM617	MW0804	L2.5&L3		
MWLNR/L2020K08	20	20	125	25	20	32						
MWLNR/L2525M08	25	25	150	32	25	32						
MWLNR/L3232P08	32	32	170	40	32	32						

SCLCR/L



CC □□



95°
R type insert

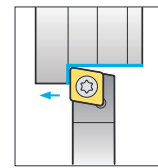
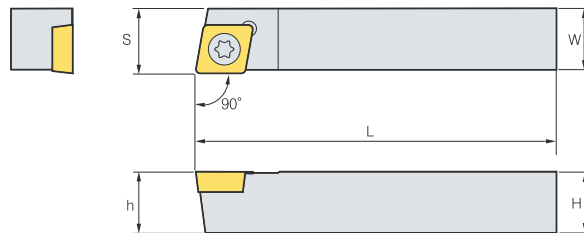
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SCLCR/L0808H06	8	8	100	10	8	10	CC..0602..	T8	ST2506
SCLCR/L1010F06	10	10	80	16	10	10			
SCLCR/L1212H09	12	12	100	20	12	16	CC..09T3..	T15	ST3509
SCLCR/L1616H09	16	16	100	20	16	16			
SCLCR/L2020K09	20	20	125	25	20	16			
SCLCR/L2525M09	25	25	150	32	25	25	CC..1204..	T20	ST5012
SCLCR/L2020K12	20	20	125	25	20	25			
SCLCR/L2525M12	25	25	150	32	25	26			
SCLCR/L3232P12	32	32	170	40	32	30			

SCACR/L



CC □□



90°
R type insert

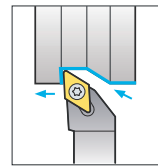
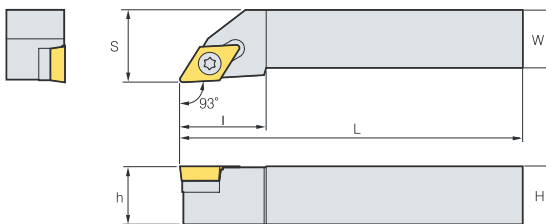
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SCACR/L0808F06	8	8	80	8.5	8	-	CC..0602..	T8	ST2506
SCACR/L1010H06	10	10	100	10.5	10	-			
SCACR/L1212H06	12	12	100	12.5	12	-	CC..09T3..	T15	ST3509
SCACR/L1212H09	12	12	100	12.5	12	-			
SCACR/L1616H09	16	16	100	16.5	16	-			

SDJCR/L



DC □□



93°
R type insert

(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SDJCR/L0808H07	8	8	100	10	8	15	DC..0702..	T8	ST2508
SDJCR/L1010F07	10	10	80	12	10	15			
SDJCR/L1212F07	12	12	80	16	12	15			
SDJCR/L1616H07	16	16	100	20	16	18	DC..11T3..	T15	ST3509
SDJCR/L1212F11	12	12	80	16	12	15			
SDJCR/L1616H11	16	16	100	20	16	18			
SDJCR/L2020K11	20	20	125	25	20	24			
SDJCR/L2525M11	25	25	150	32	25	29			
SDJCR/L3232P11	32	32	170	40	32	40			

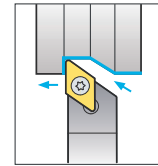
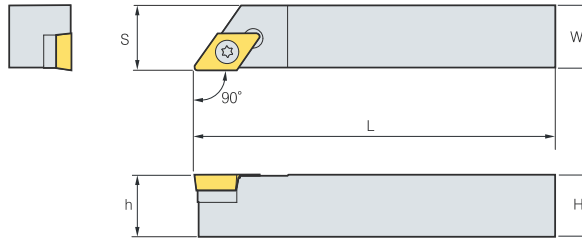
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

SDACR/L



DC □□



90°
R type insert

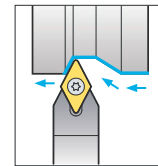
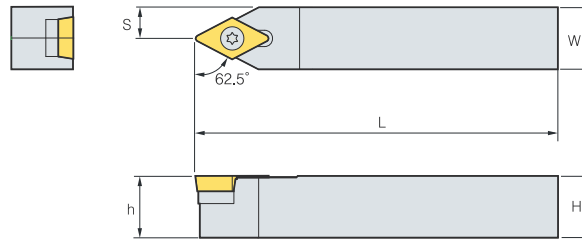
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SDACR/L0808F07	8	8	80	8.5	8	-	DC..0702..	T8	ST2508
SDACR/L1010F07	10	10	80	10.5	10	-			
SDACR/L1212F07	12	12	80	12.5	12	-			
SDACR/L1212H11	12	12	100	12.5	12	-	DC..11T3..	T15	ST3509
SDACR/L1616H11	16	16	100	16.5	16	-			
SDACR/L2020K11	20	20	125	20.5	20	-			
SDACR/L2525M11	25	25	150	25.5	25	-			

SDNCN



DC □□



62.5°
R type insert

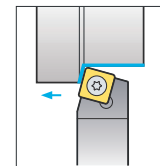
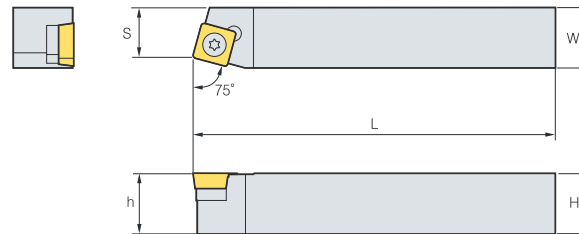
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SDNCN0808F07	8	8	80	4	8	-	DC..0702..	T8	ST2508
SDNCN1010F07	10	10	80	5	10	-			
SDNCN1212F07	12	12	80	6	12	-			
SDNCN1212H11	12	12	100	6	12	-	DC..11T3..	T15	ST3509
SDNCN1616H11	16	16	100	8	16	-			
SDNCN2020K11	20	20	125	10	20	-			

SSBCR/L



SC □□



75°
R type insert

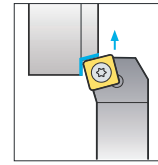
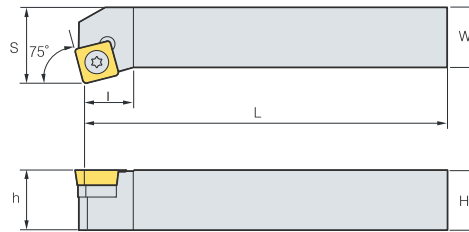
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SSBCR/L1212F09	12	12	80	11	12	-	SC..09T3..	T15	ST3509
SSBCR/L1616H09	16	16	100	13	16	-			
SSBCR/L2020K09	20	20	125	17	20	-			
SSBCR/L2525M09	25	25	150	22	25	-			
SSBCR/L2020K12	20	20	125	17	20	-	SC..1204..	T20	ST5012

SSKCR/L



SC □□



75°
R type insert

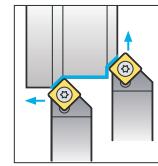
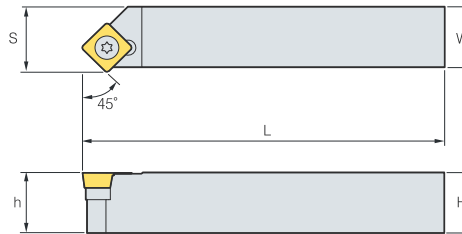
(mm)

Order No.	Dimension (mm)						Insert	Wrench 	Screw
	H	W	L	S	h	l			
SSKCR/L1616H09	16	16	100	20	16	13	SC..09T3..	T15	ST3509
SSKCR/L2020K09	20	20	125	25	20	16			

SSSCR/L



SC □□



45°
R type insert

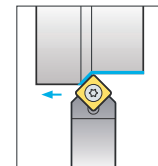
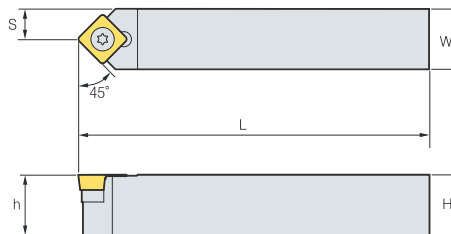
(mm)

Order No.	Dimension (mm)						Insert	Wrench 	Screw
	H	W	L	S	h	l			
SSSCR/L1616H09	16	16	100	17	16	-	SC..09T3..	T15	ST3509
SSSCR/L2020K09	20	20	125	21	20	-			
SSSCR/L2525M12	25	25	150	26	20	-	SC..1204..	T20	ST5012

SSDCN



SC □□



45°
R type insert

(mm)

Order No.	Dimension (mm)						Insert	Wrench 	Screw
	H	W	L	S	h	l			
SSDCN1212F09	12	12	80	6	12	-	SC..09T3..	T15	ST3509
SSDCN1616H09	16	16	100	8	16	-			
SSDCN2020K09	20	20	125	10	20	-			

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

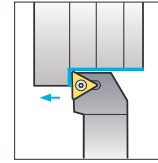
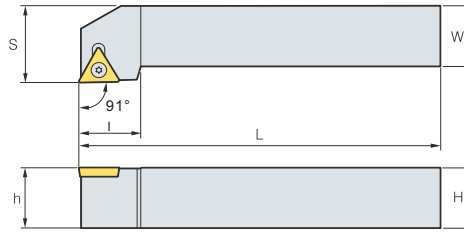
Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

STGCR/L



TC □□



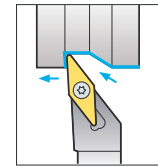
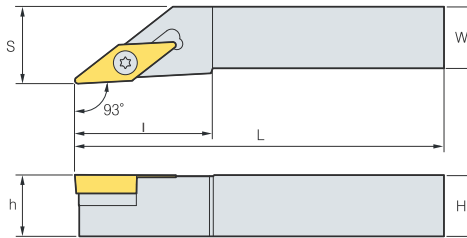
91°
R type insert

Order No.	Dimension (mm)						Insert	Wrench	Screw
	H	W	L	S	h	I			
STGCR/L0808H09	8	8	100	10	8	9	TC..0902..	T8	ST2508
STGCR/L1010H09	10	10	100	12	10	12			
STGCR/L1212H11	12	12	100	16	12	14			
STGCR/L1616H11	16	16	100	20	16	20	TC..1102..	T15	ST3509
STGCR/L2020K16	20	20	125	25	20	25			
STGCR/L2525M16	25	25	150	32	25	27			
STGCR/L3232P16	32	32	175	40	32	32	TC..16T3..	T15	ST3509

SVJBR/L



VB □□



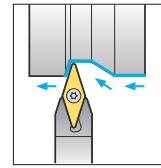
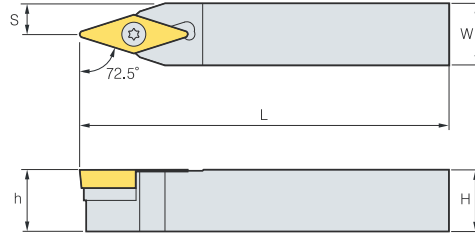
93°
R type insert

Order No.	Dimension (mm)						Insert	Wrench	Screw
	H	W	L	S	h	I			
SVJBR/L1010H11	10	10	100	14	10	20	VB..1103..	T8	ST2508
SVJBR/L1212F11	12	12	80	16	12	25			
SVJBR/L1616H11	16	16	100	20	16	32			
SVJBR/L2020K11	20	20	125	25	20	32			
SVJBR/L2525M11	25	25	150	32	25	40			
SVJBR/L1616H16	16	16	100	20	16	32	VB..1604..	T15	ST3509
SVJBR/L2020K16	20	20	125	25	20	32			
SVJBR/L2525M16	25	25	150	32	25	40			
SVJBR/L3232P16	32	32	170	40	32	40			

SVVBN



VB □□



72.5°
R type insert

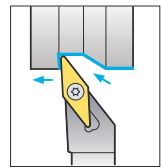
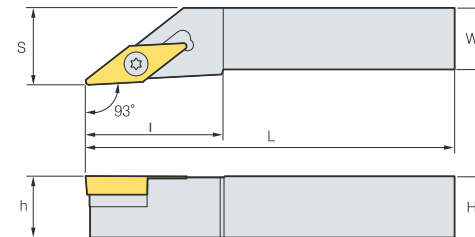
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SVVBN1212F11	12	12	80	6	12	-	VB..1103..	T8	ST2508
SVVBN1616H11	16	16	100	8	16	-			
SVVBN2020K11	20	20	125	10	20	-			
SVVBN2525M11	25	25	150	12.5	25	-			
SVVBN1616H16	16	16	100	8	16	-	VB..1604..	T15	ST3509
SVVBN2020K16	20	20	125	10	20	-			
SVVBN2525M16	25	25	150	12.5	25	-			
SVVBN3232P16	32	32	170	16	32	-			

SVJCR/L



VC □□



93°
R type insert

(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SVJCR/L1010H11	10	10	100	14	10	20	VC..1103..	T8	ST2508
SVJCR/L1212F11	12	12	80	16	12	25			
SVJCR/L1616H11	16	16	100	20	16	32			
SVJCR/L2020K11	20	20	125	25	20	32			
SVJCR/L2525M11	25	25	150	32	25	40	VC..1604..	T15	ST3509
SVJCR/L1616H16	16	16	100	20	16	32			
SVJCR/L2020K16	20	20	125	25	20	32			
SVJCR/L2525M16	25	25	150	32	25	40			
SVJCR/L3232P16	32	32	170	40	32	40			

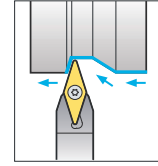
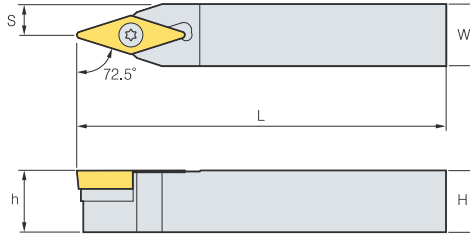


Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

SVVCN



VC □□



72.5°
R type insert

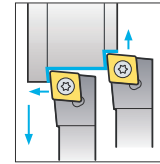
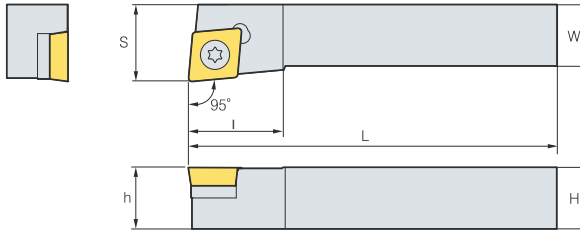
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SVVCN1212F11	12	12	80	6	12	-	VC..1103..	T8	ST2508
SVVCN1616H11	16	16	100	8	16	-			
SVVCN2020K11	20	20	125	10	20	-			
SVVCN2525M11	25	25	150	12.5	25	-			
SVVCN1616H16	16	16	100	8	16	-	VC..1604..	T15	ST3509
SVVCN2020K16	20	20	125	10	20	-			
SVVCN2525M16	25	25	150	12.5	25	-			
SVVCN3232P16	32	32	170	16	32	-			

SCLCR/L



CC □□



95°
R type insert

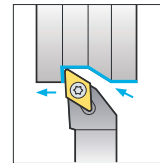
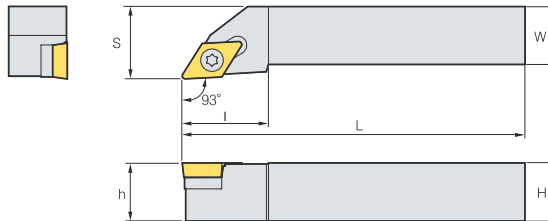
(mm)

Order No.	Dimension (Inch)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SCLCR/L08-3A	1/2	1/2	4	0.625	0.500	0.630	CC..32.5..	ET15	EST3509
SCLCR/L10-3B	5/8	5/8	4 1/2	0.750	0.625	0.630			
SCLCR/L12-3B	3/4	3/4	4 1/2	1.000	0.750	0.630			
SCLCR/L12-4B	3/4	3/4	4 1/2	1.000	0.750	1.024	CC..43..	ET20	EST5012
SCLCR/L16-4D	1	1	6	1.250	1.000	1.024			

SDJCR/L



DC □□



93°
R type insert

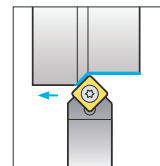
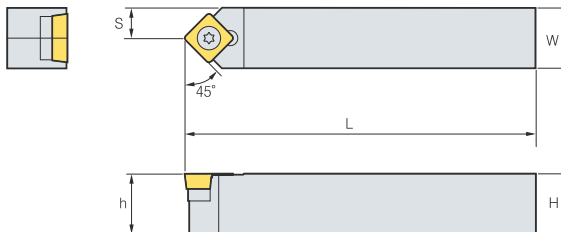
(mm)

Order No.	Dimension (Inch)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SDJCR/L06-2J	3/8	3/8	2 3/4	0.500	0.375	0.591	DC..21.5..	ET8	EST2508
SDJCR/L08-3A	1/2	1/2	4	0.625	0.500	0.591			
SDJCR/L10-3B	5/8	5/8	4 1/2	0.750	0.625	0.945	DC..32.5..	ET15	EST3509
SDJCR/L12-3B	3/4	3/4	4 1/2	1.000	0.750	0.945			
SDJCR/L16-3D	1	1	6	1.250	1.000	1.142			

SSDCN



SC □□



45°
R type insert

(mm)

Order No.	Dimension (Inch)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SSDCN08-3A	1/2	1/2	4	0.250	0.500	-	SC..32.5..	ET15	ST3509
SSDCN10-3B	5/8	5/8	4 1/2	0.313	0.625	-			
SSDCN12-3B	3/4	3/4	4 1/2	0.375	0.750	-			

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

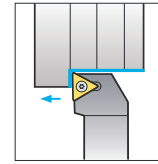
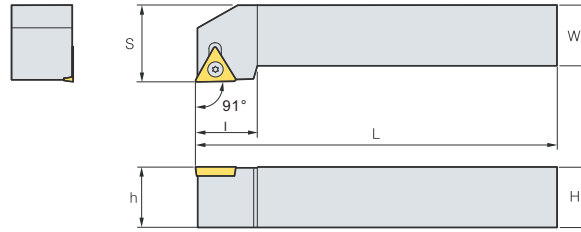
Miniature Tool

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

STGCR/L



TC □□



91°
R type insert

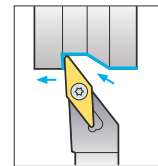
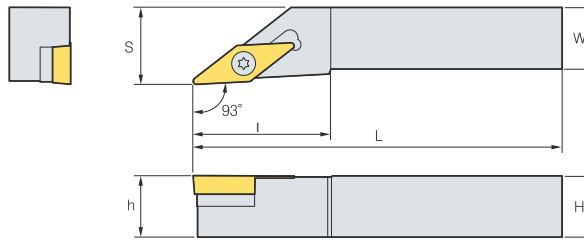
(mm)

Order No.	Dimension (Inch)						Insert	Wrench	Screw
	H	W	L	S	h	l			
STGCR/L08-2A	1/2	1/2	4	0.625	0.500	0.551	TC..21.5..	ET8	EST2508
STGCR/L10-2A	5/8	5/8	4	0.750	0.625	0.630			
STGCR/L10-3A	5/8	5/8	4	0.750	0.625	0.827	TC..32.5..	ET15	EST3509
STGCR/L12-3B	3/4	3/4	4 1/2	1.000	0.750	0.827			
STGCR/L16-3D	1	1	6	1.250	1.000	0.827			

SVJCR/L



VC □□



93°
R type insert

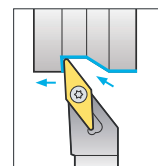
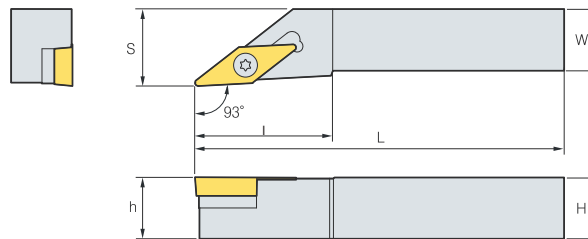
(mm)

Order No.	Dimension (Inch)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SVJCR/L08-2A	1/2	1/2	4	0.625	0.500	0.984	VC..21.5..	ET8	EST2508
SVJCR/L10-2A	5/8	5/8	4	0.750	0.625	0.984			
SVJCR/L12-3B	3/4	3/4	4 1/2	1.000	0.750	1.575	VC..33..	ET15	EST3509
SVJCR/L16-3D	1	1	6	1.250	1.000	1.575			

SVJBR/L



VB □□



93°
R type insert

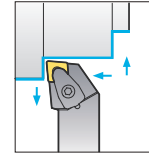
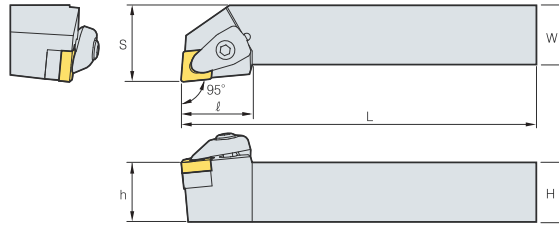
(mm)

Order No.	Dimension (Inch)						Insert	Wrench	Screw
	H	W	L	S	h	l			
SVJBR/L08-2A	1/2	1/2	4	0.625	0.500	1.063	VB..21.5..	ET8	EST2508
SVJBR/L10-2A	5/8	5/8	4	0.750	0.625	1.063			
SVJBR/L12-3B	3/4	3/4	4 1/2	1.000	0.750	1.614	VB..33..	ET15	EST3509
SVJBR/L16-3D	1	1	6	1.250	1.000	1.614			

ACLNR/L



CN □□



95°

R type insert

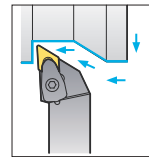
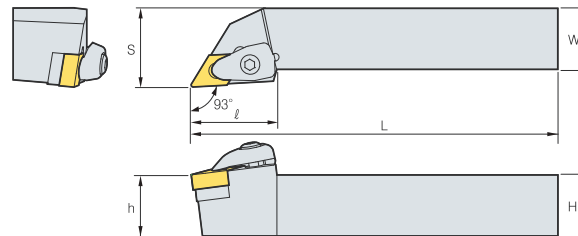
(mm)

Order No.	Dimension (Inch)						Insert	Clamp	Clamp Screw	Shim	Screw	Spring	Wrench
	H	W	L	S	h	l							
ACLNR/L12-4B	3/4	3/4	4 1/2	1.000	0.750	1.500	CN..43..	EDLM4	EDLS4	ETC12	E0512	EDSP4	ET20 EL30
ACLNR/L16-4D	1	1	6	1.250	1.000	1.500							
ACLNR/L20-4D	1 1/4	1 1/4	6	1.500	1.250	1.500							

ADJNR/L



DN □□



93°

R type insert

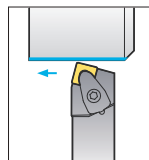
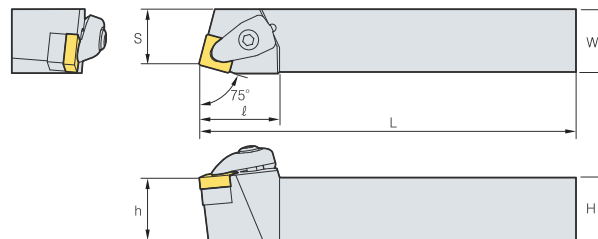
(mm)

Order No.	Dimension (Inch)						Insert	Clamp	Clamp Screw	Shim	Screw	Spring	Wrench
	H	W	L	S	h	l							
ADJNR/L12-4B	3/4	3/4	4 1/2	1.000	0.750	1.500	DN..43..	EDLM4	EDLS4	ETD15	E0512	EDSP4	ET20 EL30
ADJNR/L16-4D	1	1	6	1.250	1.000	1.500							
ADJNR/L20-4D	1 1/4	1 1/4	6	1.500	1.250	1.500							

ASBNR/L



SN □□



75°

R type insert

(mm)

Order No.	Dimension (Inch)						Insert	Clamp	Clamp Screw	Shim	Screw	Spring	Wrench
	H	W	L	S	h	l							
ASBNR/L12-4B	3/4	3/4	4 1/2	0.625	0.750	1.180	SN..43..	EDLM4	EDLS4	EMS12	E0512	EDSP4	ET20 EL30
ASBNR/L16-4D	1	1	6	0.875	1.000	1.180							

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

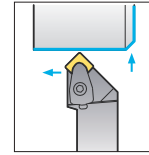
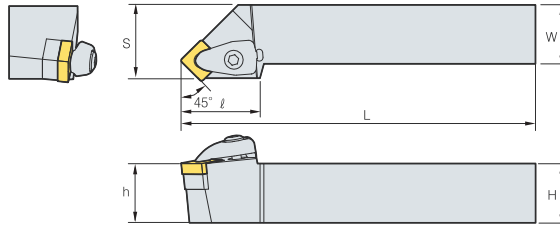
Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

ASSNR/L



SN □□



45°

R type insert

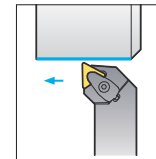
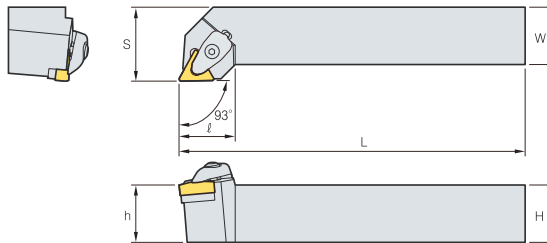
(mm)

Order No.	Dimension (Inch)						Insert	Clamp	Clamp Screw	Shim	Screw	Spring	Wrench
	H	W	L	S	h	l							
ASSNR/L12-4B	3/4	3/4	4 1/2	1.000	0.750	1.577	SN..43..	EDLM4	EDLS4	EMS12	E0512	EDSP4	ET20 EL30
ASSNR/L16-4D	1	1	6	1.250	1.000	1.577							

ATJNR/L



TN □□



93°

R type insert

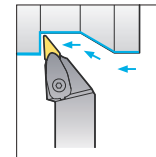
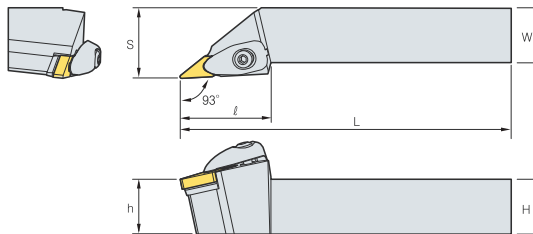
(mm)

Order No.	Dimension (Inch)						Insert	Clamp	Clamp Screw	Shim	Screw	Spring	Wrench
	H	W	L	S	h	l							
ATJNR/L12-3B	3/4	3/4	4 1/2	1.000	0.750	0.875	TN..33..	EDLM3	EDLS3	EMT16	EAM4	EDSP3	EL25
ATJNR/L16-3D	1	1	6	1.250	1.000	0.875							

AVJNR/L



VN □□



93°

R type insert

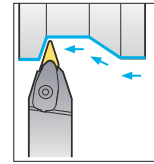
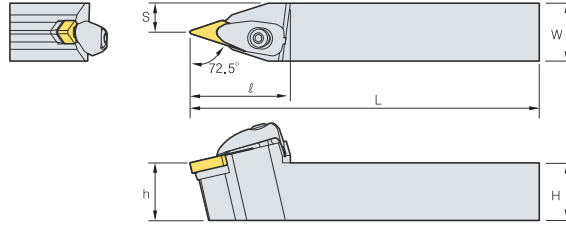
(mm)

Order No.	Dimension (Inch)						Insert	Clamp	Clamp Screw	Shim	Screw	Spring	Wrench
	H	W	L	S	h	l							
AVJNR/L12-3B	3/4	3/4	4 1/2	1.000	0.750	1.750	VN..33..	EDV16	EDLS5	EMV16	EAM4	EDSP5	EL40 EL25
AVJNR/L16-3D	1	1	6	1.250	1.000	1.870							

AVVNN



VN □□



72.5°
R type insert

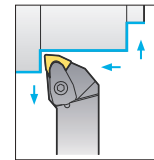
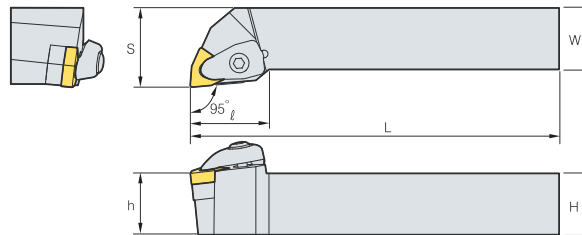
(mm)

Order No.	Dimension (Inch)						Insert	Clamp	Clamp Screw	Shim	Screw	Spring	Wrench
	H	W	L	S	h	l							
AVVNN12-3B	3/4	3/4	4 1/2	0.375	0.750	1.870	VN..33..	EDV16	EDLS5	EMV16	EAM4	EDSP5	EL40 EL25
AVVNN16-3D	1	1	6	0.500	1.000	1.870							

AWLNR/L



WN □□



95°
R type insert

(mm)

Order No.	Dimension (Inch)						Insert	Clamp	Clamp Screw	Shim	Screw	Spring	Wrench
	H	W	L	S	h	l							
AWLNR/L12-3B	3/4	3/4	4 1/2	1.000	0.750	1.125	WN..33..	EDLM3	EDLS3	EMW06	EAM4	EDSP3	EL25
AWLNR/L16-3D	1	1	6	1.250	1.000	1.125							
AWLNR/L12-4B	3/4	3/4	4 1/2	1.000	0.750	1.250	WN..43..	EDLM4	EDLS4	EMW08	EM0512	EDSP4	EL30 ET20
AWLNR/L16-4D	1	1	6	1.250	1.000	1.250							
AWLNR/L20-4D	1 1/4	1 1/4	6	1.500	1.250	1.250							

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

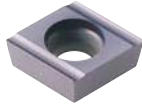
Threading

Parting, Grooving

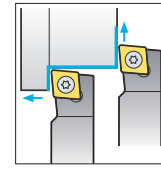
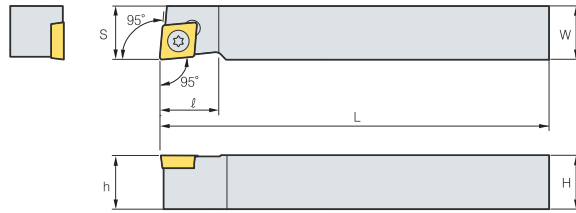
Miniature Tool

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

J-SCLCR/R



CC □ T



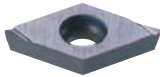
95°

R type insert

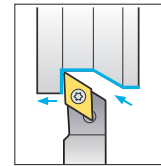
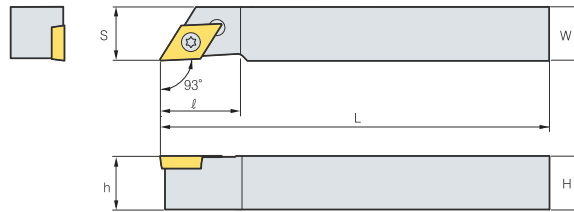
(mm)

Order No.	Dimension (Inch)					Insert	Wrench	Screw
	H	W	L	S	h			
J-SCLCR/L1010K06	10	10	125	10	10	CC..06..	JC06	EC06
J-SCLCR/L1212K06	12	12	125	10	12			
J-SCLCR/L1616K06	16	16	125	10	16			
J-SCLCR/L1010K09	10	10	125	10	10	CC..09..	JC06	EC06
J-SCLCR/L1212K09	12	12	125	12	12			
J-SCLCR/L1616K09	16	16	125	16	16			

J-SDJCR/L



DC □ T



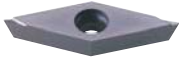
93°

R type insert

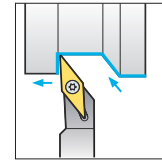
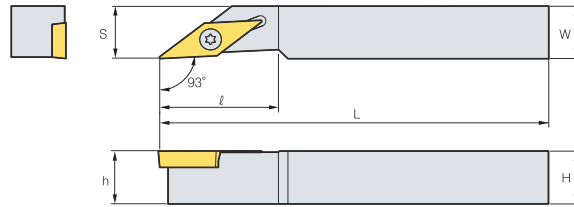
(mm)

Order No.	Dimension (Inch)					Insert	Wrench	Screw
	H	W	L	S	h			
J-SDJCR/L0808K07	8	8	125	8	8	DC..07..	JD07	ED07
J-SDJCR/L1010K07	10	10	125	10	10			
J-SDJCR/L1212K07	12	12	125	12	12			
J-SDJCR/L1616K07	16	16	125	16	16			
J-SDJCR/L1010K11	10	10	125	10	10	DC..11..	JD11	ED11
J-SDJCR/L1212K11	12	12	125	12	12			
J-SDJCR/L1616K11	16	16	125	16	16			

J-SVJBR/L



VB □ T



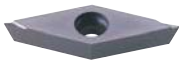
93°

R type insert

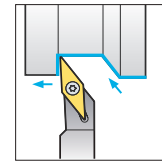
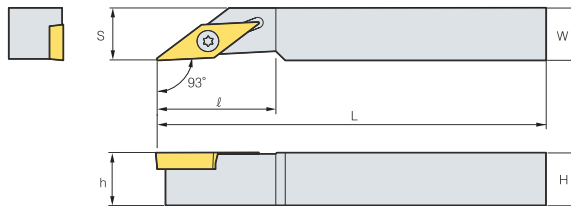
(mm)

Order No.	Dimension (Inch)					Insert	Wrench	Screw
	H	W	L	S	h			
J-SVJBR/L0808K11	8	8	125	8	8	VB..11..	JVB11	EVB11
J-SVJBR/L1010K11	10	10	125	10	10			
J-SVJBR/L1212K11	12	12	125	12	12			
J-SVJBR/L1616K11	16	16	125	16	16			

J-SVJCR/L



VC □ T



93°

R type insert

(mm)

Order No.	Dimension (Inch)					Insert	Wrench	Screw
	H	W	L	S	h			
J-SVJCR/L0808K11	8	8	125	8	8	VC..11..	JVC11	EVC11
J-SVJCR/L1010K11	10	10	125	10	10			
J-SVJCR/L1212K11	12	12	125	12	12			
J-SVJCR/L1616K11	16	16	125	16	16			

Insert

External Toolholder

Internal Toolholder

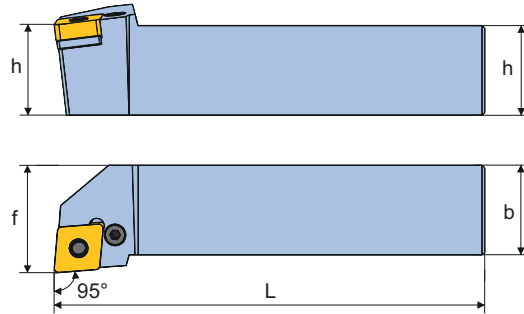
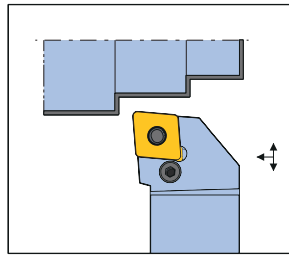
PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

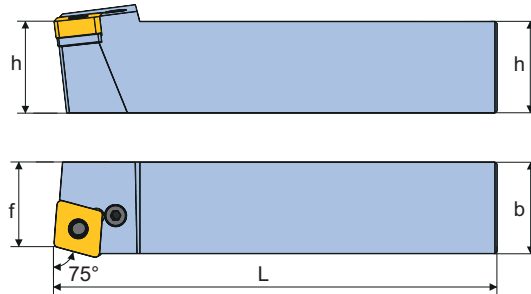
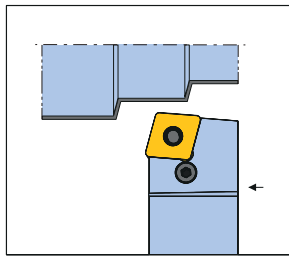
◆ Lever-lock toolholder with 95° approach angle



Right hand (R) shown

Order No.	Stock		Dimension				Insert	Spare Parts					Weight KG
	R	L	h	b	L	f		Lever	Screw	Shim	Spring pin	Wrench	
PCLNR/L 4040-225-C19	•	•	40	40	225	50	CN...1906...						2.9
4040-280-C19	•	•	40	40	280	50							3.6
5050-280-C19	•	•	50	50	280	60							5.6
6050-280-C19	•	•	60	50	280	60							6.7
6050-350-C19	•	•	60	50	350	60							8.4
PCLNR/L 4040-225-C25	•	•	40	40	225	50	CN...2509...						2.9
4040-280-C25	•	•	40	40	280	50							3.6
5050-280-C25	•	•	50	50	280	60							5.6
6050-280-C25	•	•	60	50	280	60							6.7
6050-350-C25	•	•	60	50	350	60							8.4

◆ Lever-lock toolholder with 75° approach angle



Right hand (R) shown

Order No.	Stock		Dimension				Insert	Spare Parts					Weight KG
	R	L	h	b	L	f		Lever	Screw	Shim	Spring pin	Wrench	
	PCBNR/L4040-280-C19	•	•	40	40	280	37	CN...1906...					
5050-280-C19	•	•	50	50	280	47	5.6						
PCBNR/L4040-225-C25	•	•	40	40	225	35	CN...2509...						2.9
4040-280-C25	•	•	40	40	280	35							3.6
5050-280-C25	•	•	50	50	280	45							5.6

Insert

External Toolholder

Internal Toolholder

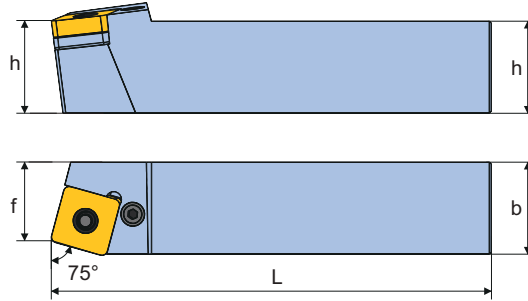
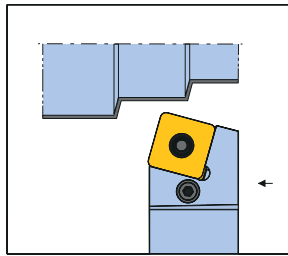
PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

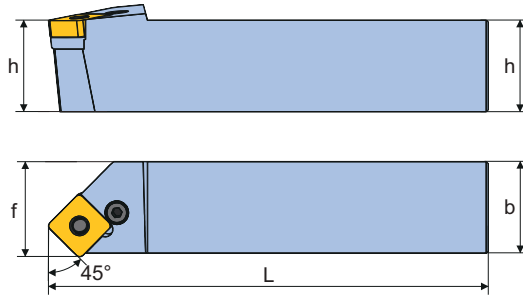
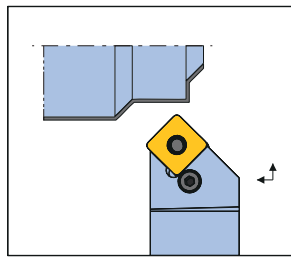
◆ Lever-lock toolholder with 75° approach angle



Right hand (R) shown

Order No.	Stock		Dimension				Insert	Spare Parts					Weight KG
	R	L	h	b	L	f		Lever	Screw	Shim	Spring pin	Wrench	
PSBNR/L 4040-225-S19	•	•	40	40	225	35	SN...1906...						2.8
4040-280-S19	•	•	40	40	280	35							3.4
5050-280-S19	•	•	50	50	280	45							5.4
6050-350-S19	•	•	60	50	350	45							8.1
PSBNR/L 4040-225-S25	•	•	40	40	225	35	SN...2509...						2.8
4040-280-S25	•	•	40	40	280	35							3.5
5050-280-S25	•	•	50	50	280	43							5.4
6050-280-S25	•	•	60	50	280	43							6.5
6050-350-S25	•	•	60	50	350	43							8.1
PSBNR/L 5050-280-S32	•	•	50	50	280	41	SN...3209...	LCL32-NX	LCS8	GSS320	LSP8	G-W5	5.4

◆ Lever-lock toolholder with 45° approach angle

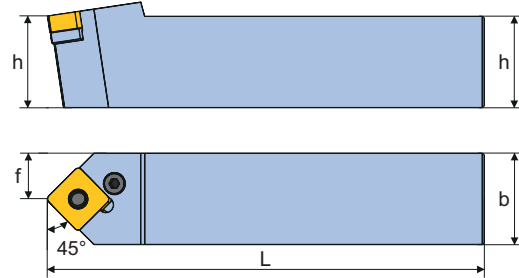
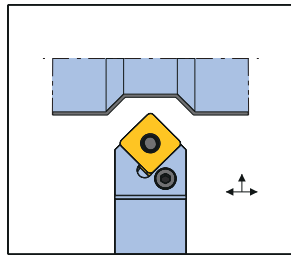


Right hand (R) shown

Order No.	Stock		Dimension				Insert	Spare Parts					Weight KG
	R	L	h	b	L	f		Lever	Screw	Shim	Spring pin	Wrench	
PSSNR/L4040-225-S19	•	•	40	40	225	42	SN...1906...	GCL306	GCS266	GSS190	GSP104	G-W4	2.9
4040-280-S19	•	•	40	40	280	42							3.6
PSSNR/L4040-280-S25	•	•	40	40	280	42	SN...2509...	GCL307	GCS268	GSS250	GSP105	G-W5	3.6
5050-280-S25	•	•	50	50	280	52							5.6

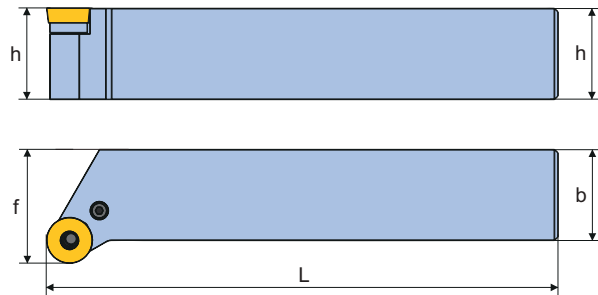
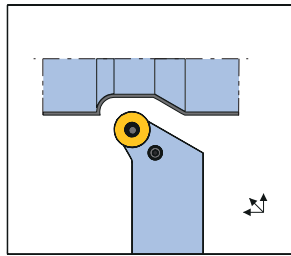
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

◆ Lever-lock toolholder with 45° approach angle



Order No.	Stock	Dimension				Insert	Spare Parts					Weight
		N	h	b	L		f	Lever	Screw	Shim	Spring pin	
PSDNN 4040-225-S19	•	40	40	225	20	SN...1906...	GCL306	GCS266	GSS190	GSP104	G-W4	2.9
4040-280-S19	•	40	40	280	20							3.6
5050-280-S19	•	50	50	280	25							5.6
6050-280-S19	•	60	50	280	25							6.7
6050-350-S19	•	60	50	350	25							8.4
PSDNN 4040-280-S25	•	40	40	280	20	SN...2509...	GCL307	GCS268	GSS250	GSP105	G-W5	3.6
5050-280-S25	•	50	50	280	25							5.6
6050-350-S25	•	60	50	350	25							8.4

◆ Circular insert lever turning tool



Right hand (R) shown

Order No.	Stock		Dimension				Insert	Spare Parts					Weight KG
	R	L	h	b	L	f		Lever	Screw	Shim	Spring pin	Wrench	
PRGCR/L4040-225-R16	•	•	40	40	225	50	RC...1606...	LCL16C	LCS16C	LSR1604	LSP16C	G-W2.5	2.9
4040-280-R16	•	•	40	40	280	50							3.6
PRGCR/L4040-225-R20	•	•	40	40	225	50	RC... 2006...	LCL20C	LCS5	LSR2004	LSP5	G-W3	2.9
4040-280-R20	•	•	40	40	280	50							3.6
PRGCR/L4040-225-R25	•	•	40	40	225	50	RC... 2507...	LCL25C	LCS25C	LSR2506	LSP6	G-W4	2.9
4040-280-R25	•	•	40	40	280	50							3.6
5050-280-R25	•	•	50	50	280	60							5.6
PRGCR/L4040-280-R30			40	40	280	50	RC... 3009...	LCL30C	LCS30C	LSR3009	LSP7	G-W4.5	5.6
5050-280-R30			50	50	280	60							5.6
PRGCR/L4040-280-R32			40	40	280	50	RC... 3209...	LCL32C	LCS8	LSR3206	LSP8	G-W5	3.6
5050-280-R32			50	50	280	60							5.6

Insert

External Toolholder

Internal Toolholder

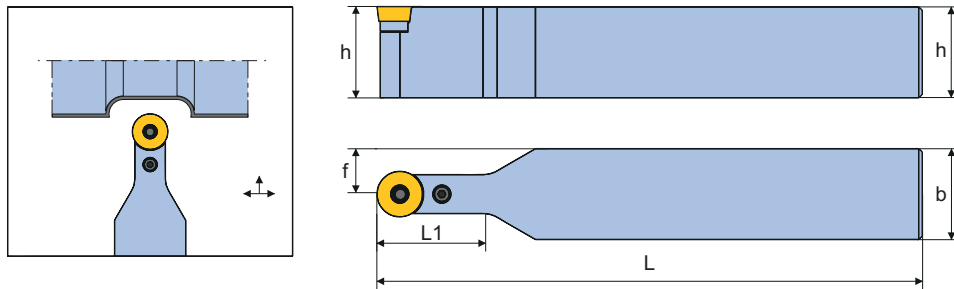
PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

◆ Circular insert lever turning tool



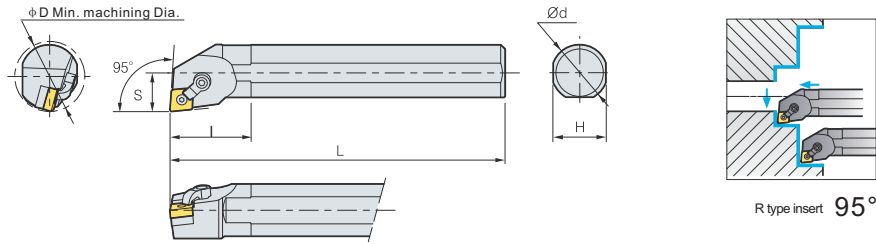
Order No.	Stock	Dimension					Insert	Spare Parts					Weight	
		N	h	b	L	L1		f	Lever	Screw	Shim	Spring pin		Wrench
PRDCN4040-225-R16	•	40	40	225	45	20	RC... 1606...						G-W2.5	2.9
4040-280-R16	•	40	40	280	55	20								3.6
PRDCN4040-225-R20	•	40	40	225	50	20	RC... 2006...						G-W3	2.9
4040-280-R20	•	40	40	280	60	20								3.6
PRDCN4040-225-R25	•	40	40	225	50	20	RC... 2507...						G-W4	2.9
4040-280-R25	•	40	40	280	60	20								3.6
5050-280-R25	•	50	50	280	70	25								5.6
PRDCN5050-280-R30		40	40	225	50	20	RC... 3009...						G-W4.5	5.6
PRDCN5050-280-R32		50	50	280	70	25	RC... 3209...						G-W5	5.6

Legend		RCMT3009MO		
		d	d1	S
		30	10	9.525

MCLNR/L



CN □□



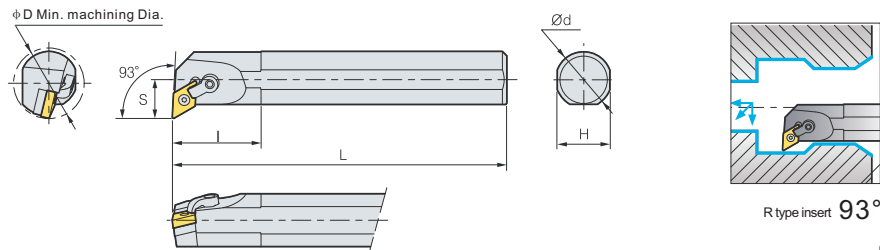
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	D	d	H	L	S	I						
S20R-MCLNR/L12	25	20	18	200	13	40	CN..1204..	MLP44-A	-	LH025 LH030	MS620	MC620
S25R-MCLNR/L12	30	25	23	200	15.5	40		MLP46-A	CMS432		MS625	
S32S-MCLNR/L12	40	32	30	250	19.5	48						

MDUNR/L



DN □□



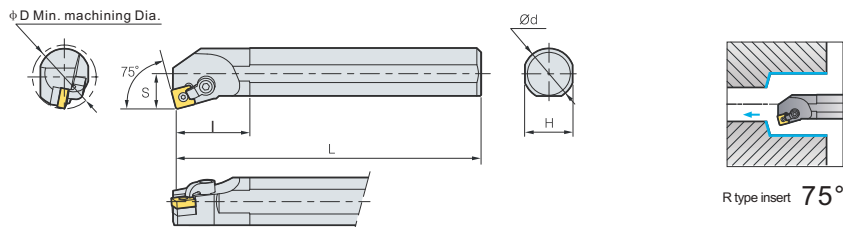
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	D	d	H	L	S	I						
S25R-MDUNR/L15	32	25	18	200	13	40	DN..1504..	MLP44-A	DMS432	LH025 LH030	MS620	MC620
S32S-MDUNR/L15	40	32	23	250	15.5	40		MLP46-A				

MSKNR/L



SN □□



(mm)

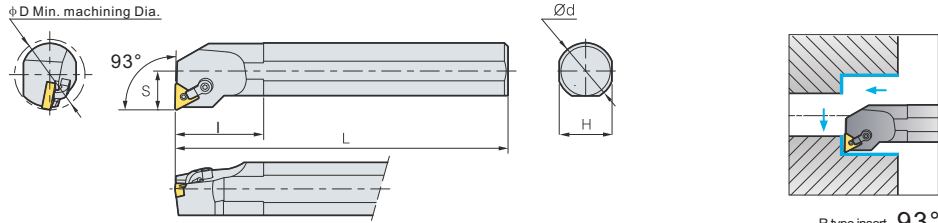
Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	D	d	H	L	S	I						
S25R-MSKNR/L12	30	25	23	200	15	40	SN..1204..	MLP44-A	-	LH025LH	MS620	MC620
S40T-MSKNR/L12	50	40	37	300	25.5	55		MLP46-A	SMS432			

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

MTUNR/L



TN □□



R type insert 93°

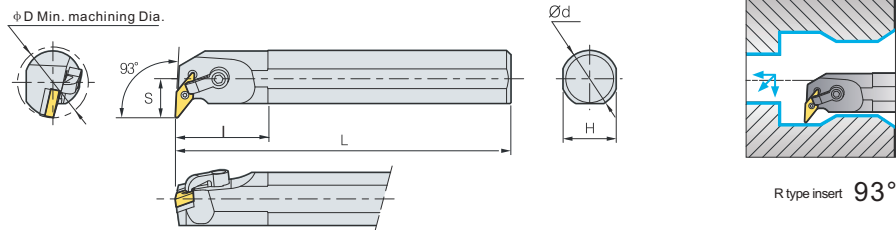
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	D	d	H	L	S	I						
S20R-MTUNR/L16	25	20	18	200	13	40	TN..1604..	MLP33L-A	-	LH020 LH025	MS520	MC515
S25R-MTUNR/L16	30	25	23	200	15.5	40		MLP34L-A	TMS322	LH020/030	MS625	MC620
S32S-MTUNR/L16	40	32	30	250	19.5	48						

MVUNR/L



VN □□



R type insert 93°

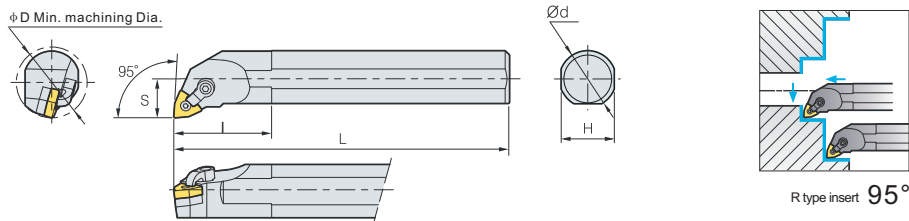
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	D	d	H	L	S	I						
S25R-MVUNR/L16	32	25	23	200	18	45	VN..1604..	MLP33L-A	-	LH020/025	MS520	MC515
S32S-MVUNR/L16	40	32	30	250	21	50		MLP34L-A	VMS322	LH020 LH025	MS625	MC620
S40T-MVUNR/L16	50	40	37	300	26	55						

MWLNR/L



WN □□



R type insert 95°

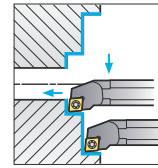
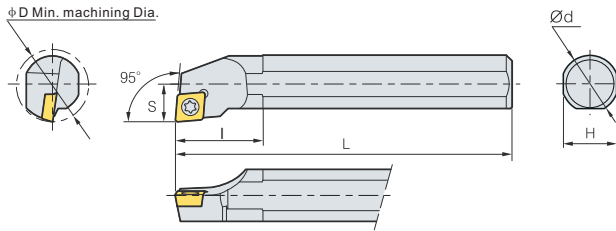
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	D	d	H	L	S	I						
S20R-MWLNR/L08	25	20	18	200	13	40	WN..0804..	MLP44-A	-	LH025	MS520	MC515
S25R-MWLNR/L08	30	25	23	200	15	40		MLP46-A	WMS432			
S32S-MWLNR/L08	40	32	30	250	20	48						

SCLCR/L



CC □□



R type insert 95°

S:Steel Shank C:Carbide Shank

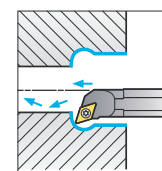
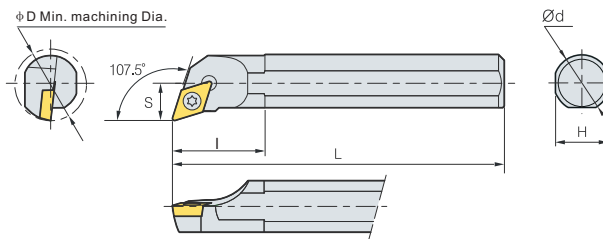
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
S08K-SCLCR/L06	10	8	7	125	5	20	CC..0602..	TRX08	BFTX2506
S10K-SCLCR/L06	12	10	9	125	6	22			
S12M-SCLCR/L06	16	12	11	150	8	26			
S16Q-SCLCR/L06	20	16	15	180	10	32			
S12M-SCLCR/L09	16	12	11	150	8	26	CC..09T3..	TRX15	BFTX4008
S14Q-SCLCR/L09	16	14	13	180	8	26			
S16Q-SCLCR/L09	20	16	15	180	10	32			
S20R-SCLCR/L09	25	20	18	200	13	40			
S25R-SCLCR/L09	30	25	23	200	15	40			
S32S-SCLCR/L09	38	32	30	250	20	48			
C08K-SCLCR/L06	10	8	7	125	5	20	CC..0602..	TRX08	BFTX2506
C10K-SCLCR/L06	12	10	9	125	6	22			
C12M-SCLCR/L06	16	12	11	150	8	26	CC..09T3..	TRX15	BFTX4008
C12M-SCLCR/L09	16	12	11	150	8	26			
C16Q-SCLCR/L09	20	16	15	180	10	32			

SDQCR/L



DC □□



R type insert 107.5°

S:Steel Shank C:Carbide Shank

(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
S10K-SDQCR/L07	13	10	9	125	6.5	22	DC..0702..	TRX08	BFTX2506
S12M-SDQCR/L07	16	12	11	150	8	30			
S16Q-SDQCR/L07	20	16	15	180	10.5	35			
S16Q-SDQCR/L11	20	16	15	180	10.5	35	DC..11T3..	TRX15	BFTX4008
S20R-SDQCR/L11	25	20	18	200	12.5	40			
S25R-SDQCR/L11	32	25	23	200	15.5	45			
S32S-SDQCR/L11	40	32	30	250	19.5	48			
C10M-SDQCR/L07	13	10	9	150	6.5	22	DC..0702..	TRX08	BFTX2506
C12Q-SDQCR/L07	16	12	11	180	8	30			
C16Q-SDQCR/L07	20	16	15	180	10.5	35			

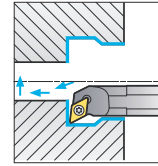
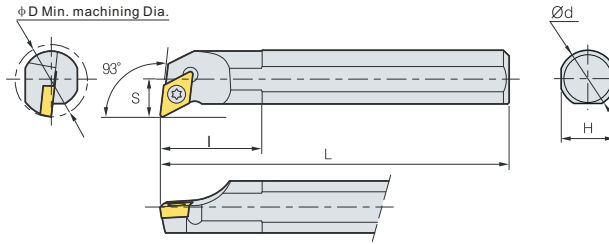


Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

SDUCR/L



DC □□



R type insert 93°

S:Steel Shank C:Carbide Shank

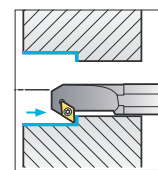
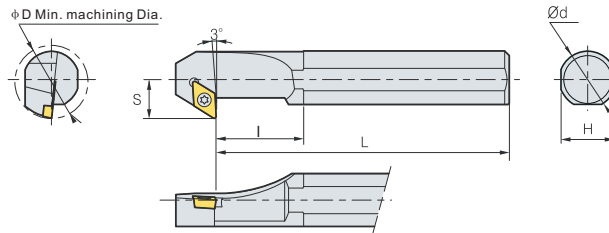
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
S10K-SDUCR/L07	13	10	9	125	7	25	DC..0702..	TRX08	BFTX2506
S12M-SDUCR/L07	16	12	11	150	8.5	30			
S16Q-SDUCR/L07	20	16	15	180	11	30			
S16Q-SDUCR/L11	20	16	15	180	11	30	DC..11T3..	TRX15	BFTX4008
S20R-SDUCR/L11	25	20	18	200	13	40			
S25R-SDUCR/L11	32	25	23	200	16	45			
S32S-SDUCR/L11	40	32	30	250	20	48			
C10M-SDUCR/L07	13	10	9	150	7	25	DC..0702..	TRX08	BFTX2506
C12Q-SDUCR/L07	16	12	11	180	8.5	30			
C16R-SDUCR/L11	20	16	15	200	11	30			

SDZCR/L



DC □□



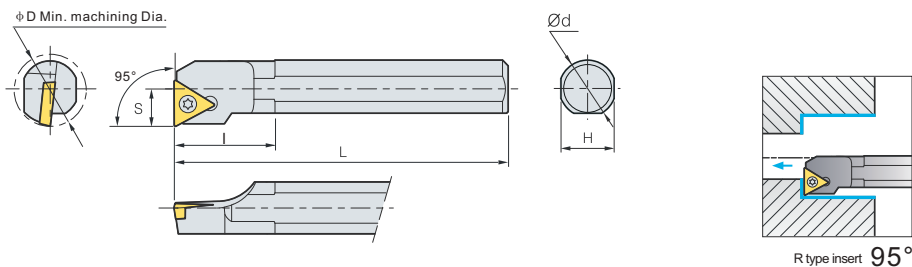
R type insert 93° (mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
S10M-SDZCR/L07	14	10	9	150	8.5	18	DC .0702..	TRX08	BFTX2506
S12M-SDZCR/L07	17	12	11	150	10.5	20			
S16Q-SDZCR/L07	21	16	15	180	12.5	26			
S20R-SDZCR/L11	26	20	18	200	15.5	27	DC..11T3..	TRX15	BFTX4008
S25R-SDZCR/L11	33	25	23	200	18	32			
S32S-SDZCR/L11	40	32	30	250	21.5	42			

STUCR/L



TC □□



S:Steel Shank C:Carbide Shank

(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
S08K-STUCR/L09	10	8	7	125	5.5	20	TC..0902..	TRX06	BFTX2204
S10K-STUCR/L09	12	10	9	125	6	22			
S12M-STUCR/L09	16	12	11	150	8	26			
S10K-STUCR/L11	12	10	9	125	6	22	TC..1102..	TRX08	BFTX2506
S12M-STUCR/L11	16	12	11	150	8	26			
S16Q-STUCR/L11	20	16	15	180	10	32			
S20R-STUCR/L11	25	20	18	200	13	40			
S25R-STUCR/L11	30	25	23	200	15	40	TC..16T3..	TRX15	BFTX4010
S20R-STUCR/L16	25	20	18	200	13	40			
S25S-STUCR/L16	30	25	23	250	15	40			
S32S-STUCR/L16	38	32	30	250	20	48			
S32T-STUCR/L16	38	32	30	300	20	48	TC..0902..	TRX06	BFTX2204
C08K-STUCR/L09	10	8	7	125	5.5	20			
C10K-STUCR/L09	12	10	9	125	6	22			
C10K-STUCR/L11	12	10	9	125	6	22	TC..1102..	TRX08	BFTX2506
C12M-STUCR/L11	16	12	11	150	8	26			
C16R-STUCR/L11	20	16	15	200	10	32			

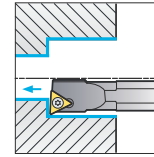
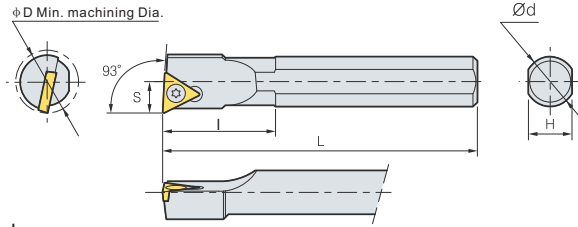


Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

STUPR/L



TP □□



R type insert 93°

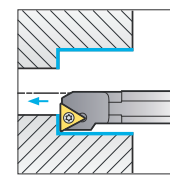
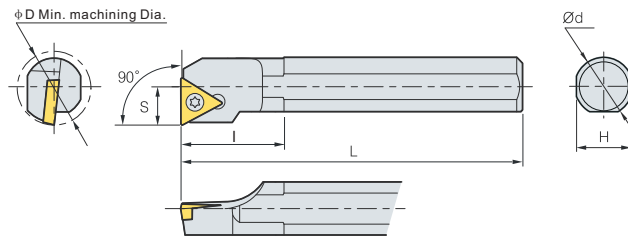
S:Steel Shank C:Carbide Shank

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
S08K-STUPR/L08	10	8	7	125	5.5	20	TP..0802..	TRX06	BFTX2204
S10K-STUPR/L08	12	10	9	125	6	22			BFTX2206
S12M-STUPR/L08	16	12	11	150	8	26			
S08K-STUPR/L09	10	8	7	125	5.5	20	TP..0902..	TRX08	BFTX2506
S10K-STUPR/L09	12	10	9	125	6	22			
S10K-STUPR/L11	12	10	9	125	6	22			
S12M-STUPR/L11	16	12	11	150	8	26	TP..1103..	TRX10	BFTX3008
S14Q-STUPR/L11	16	14	13	180	8	26			
S16Q-STUPR/L11	20	16	15	180	10	32			
S20R-STUPR/L11	25	20	18	200	13	40			
S25R-STUPR/L11	30	25	23	200	15	40			
C08K-STUPR/L08	10	8	7	125	5.5	20	TP..0802..	TRX06	BFTX2204
C08K-STUPR/L09	10	8	7	125	5.5	20	TP..0902..	TRX08	BFTX2506
C10K-STUPR/L09	12	10	9	125	6	22			
C10K-STUPR/L11	12	10	9	125	6	22	TP..1103..	TRX10	BFTX3008
C12M-STUPR/L11	16	12	11	150	8	26			
C16R-STUPR/L11	20	16	15	200	10	32			

STFCR/L



TC □□



R type insert 90°

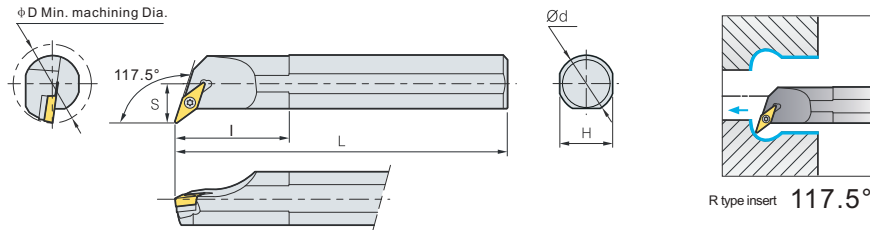
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
S08K-STFCR/L09	10	8	7	125	5.5	20	TC..0902..	TRX06	BFTX2206
S10K-STFCR/L09	12	10	9	125	6	22			
S10K-STFCR/L11	12	10	9	125	6	22			
S12M-STFCR/L11	16	12	11	150	8	26	TC..1102..	TRX08	BFTX2506
S16Q-STFCR/L11	20	16	15	180	10	32			
S20R-STFCR/L16	25	20	18	200	13	36			
S25S-STFCR/L16	30	25	23	250	15	40			
S32S-STFCR/L16	38	32	30	250	20	48			
							TC..16T3..	TRX15	BFTX4010

SVQBR/L



VB □□



R type insert 117.5°

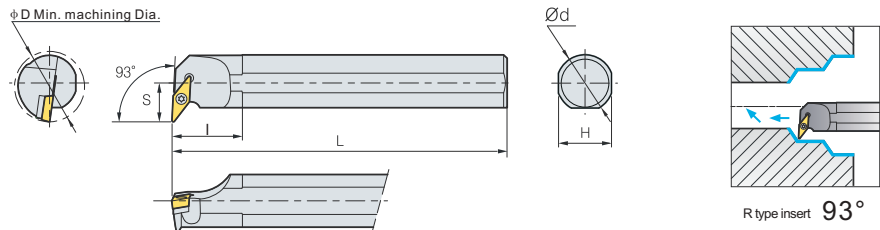
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw	Shim	ShimScrew
	D	d	H	L	S	I					
S12M-SVQBR/L11	16	12	11	150	9	28	VB..1103..	TRX08	BFTX2506	-	-
S16Q-SVQBR/L11	20	16	15	180	11	35					
S20R-SVQBR/L11	25	20	18	200	13	40	VB..1604..	TRX15	BFTX3508	-	-
S20R-SVQBR/L16	25	20	18	200	13	40					
S25S-SVQBR/L16	32	25	23	250	16	45					
S32S-SVQBR/L16	40	32	30	250	20	48					
S40T-SVQBR/L16	50	40	37	300	25.5	60		TRX15 LH035	BFTX3512	VSS322	BX0535

SVUBR/L



VB □□



R type insert 93°

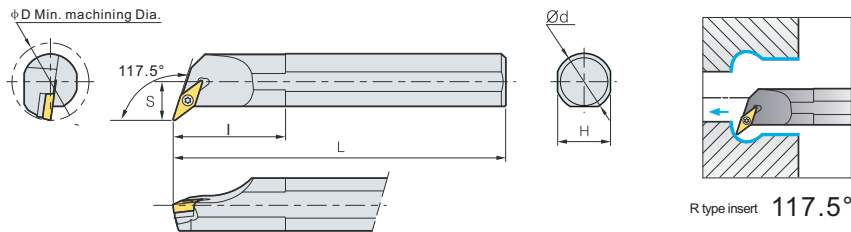
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw	Shim	ShimScrew
	D	d	H	L	S	I					
S16Q-SVUBR/L11	22	16	15	180	13	30	VB..1103..	TRX08	BFTX2506	-	-
S20R-SVUBR/L11	27	20	18	200	15	40					
S25S-SVUBR/L16	32	25	23	250	18	45	VB..1604..	TRX15	BFTX3508	-	-
S32S-SVUBR/L16	40	32	30	250	22	50					
S40T-SVUBR/L16	50	40	37	300	27	55					

SVQCR/L



VC □□



R type insert 117.5°

(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw	Shim	ShimScrew
	D	d	H	L	S	I					
S12M-SVQCR/L11	16	12	11	150	9	28	VC..1103..	TRX08	BFTX2506	-	-
S16Q-SVQCR/L11	20	16	15	180	11	35					
S20R-SVQCR/L11	25	20	18	200	13	40	VC..1604..	TRX15	BFTX3508	-	-
S20R-SVQCR/L16	25	20	18	200	13	40					
S25S-SVQCR/L16	32	25	23	250	16	45					
S32S-SVQCR/L16	40	32	30	250	20	48					
S40T-SVQCR/L16	50	40	37	300	25.5	60		TRX15 LH035	BFTX3512	VSS322	BX0535

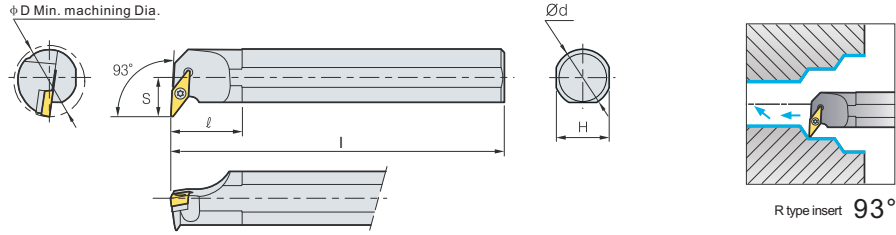


Insert

SVUCR/L



VC □□



External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

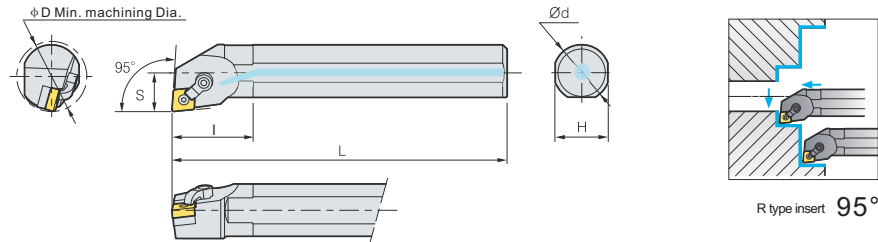
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw	Shim	ShimScrew
	D	d	H	L	S	l					
S16Q-SVUCR/L11	22	16	15	180	13	30	VC..1103..	TRX08	BFTX2506	-	-
S20R-SVUCR/L11	27	20	18	200	15	40					
S25S-SVUCR/L16	32	25	23	250	18	45	VC..1604..	TRX15	BFTX3508	-	-
S32S-SVUCR/L16	40	32	30	250	22	50					
S40T-SVUCR/L16	50	40	37	300	27	55					

MCLNR/L



CN □□



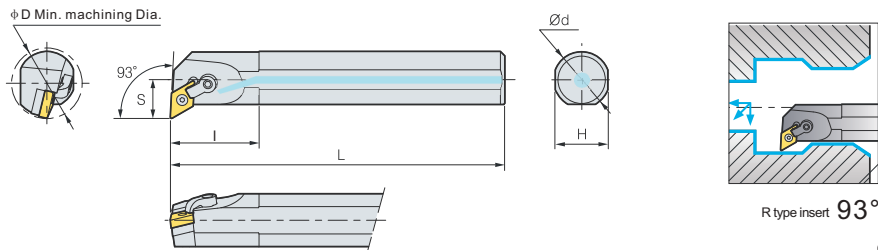
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	D	d	H	L	S	I						
A20R-MCLNR/L12	25	20	18	200	13	40	CN..1204..	MLP44-A	-	LH025 LH030	MS620	MC620
A25R-MCLNR/L12	30	25	23	200	15.5	40		MLP46-A	CMS432		MS625	
A32S-MCLNR/L12	40	32	30	250	19.5	48						

MDUNR/L



DN □□



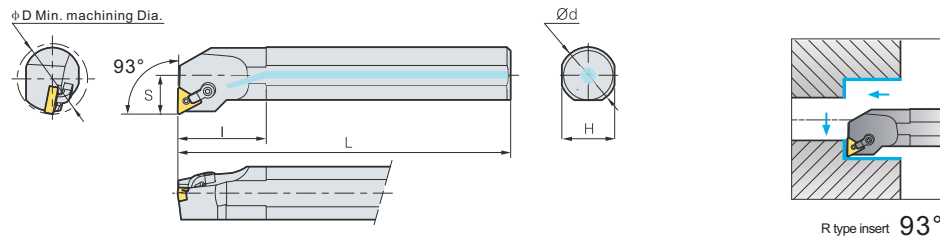
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	D	d	H	L	S	I						
A25R-MDUNR/L15	32	25	18	200	13	40	DN..1504..	MLP44-A	DMS432	LH025 LH030	MS620	MC620
A32S-MDUNR/L15	40	32	23	250	15.5	40		MLP46-A				

MTUNR/L



TN □□



(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	D	d	H	L	S	I						
A20R-MTUNR/L16	25	20	18	200	13	40	TN..1604..	MLP33L-A	-	LH020 LH025	MS520	MC515
A25R-MTUNR/L16	30	25	23	200	15.5	40		MLP34L-A	TMS322		LH020/030	
A32S-MTUNR/L16	40	32	30	250	19.5	48						

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Treading

Parting, Grooving

Miniature Tool

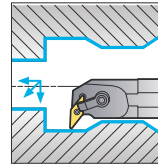
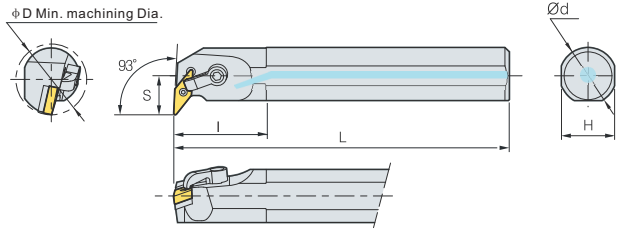
TOTIME Internal Toolholder
Steel Boring Bar with Coolant Hole

Insert

MVUNR/L



VN □ □



R type insert 93°

(mm)

External Toolholder

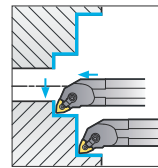
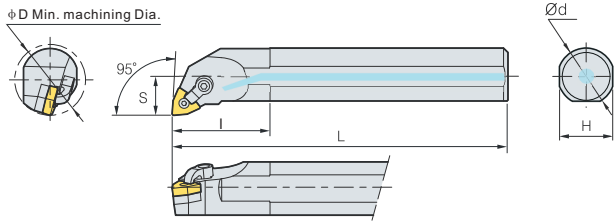
Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	D	d	H	L	S	I						
A25R-MVUNR/L16	32	25	23	200	18	45	VN..1604..	MLP33L-A	-	LH020/025	MS520	MC515
A32S-MVUNR/L16	40	32	30	250	21	50		MLP34L-A	VMS322	LH020 LH025	MS625	MC620
A40T-MVUNR/L16	50	40	37	300	26	55						

Internal Toolholder

MWLNR/L



WN □ □



R type insert 95°

(mm)

PSC Toolholder

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw	Clamp
	D	d	H	L	S	I						
A20R-MWLNR/L08	25	20	18	200	13	40	WN..0804..	MLP44-A	-	LH025	MS520	MC515
A25R-MWLNR/L08	30	25	23	200	15	40						
A32S-MWLNR/L08	40	32	30	250	20	48		MLP46-A	WMS432			

Threading

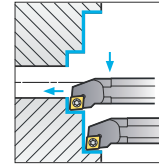
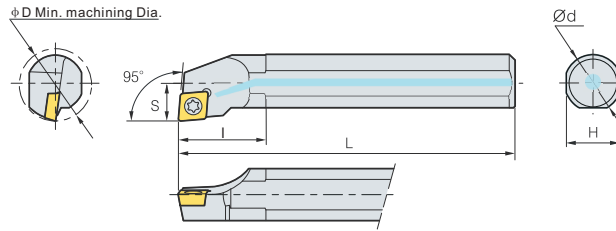
Parting, Grooving

Miniature Tool

SCLCR/L



CC □□



R type insert 95°

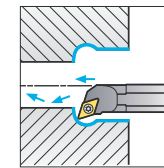
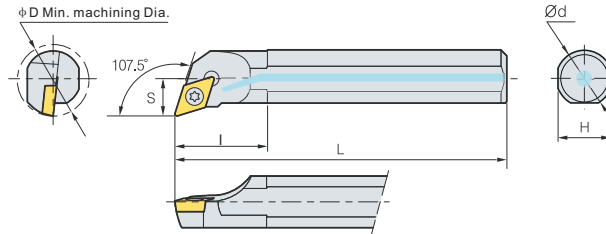
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
A08K-SCLCR/L06	10	8	7	125	5	20	CC..0602..	TRX08	BFTX2506
A10K-SCLCR/L06	12	10	9	125	6	22			
A12M-SCLCR/L06	16	12	11	150	8	26			
A16Q-SCLCR/L06	20	16	15	180	10	32			
A12M-SCLCR/L09	16	12	11	150	8	26	CC..09T3..	TRX15	BFTX4008
A16Q-SCLCR/L09	20	16	15	180	10	32			
A20R-SCLCR/L09	25	20	18	200	13	40			
A25R-SCLCR/L09	30	25	23	200	15	40			

SDQCR/L



DC □□



R type insert 107.5°

(mm)

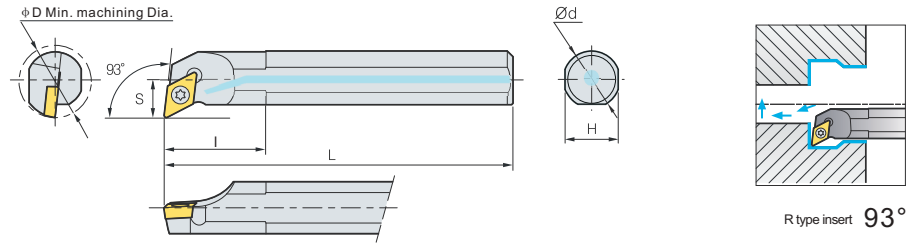
Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
A10K-SDQCR/L07	13	10	9	125	6.5	22	DC..0702..	TRX08	BFTX2506
A12M-SDQCR/L07	16	12	11	150	8	30			
A16Q-SDQCR/L07	20	16	15	180	10.5	35			
A16Q-SDQCR/L11	20	16	15	180	10.5	35	DC..11T3..	TRX15	BFTX4008
A20R-SDQCR/L11	25	20	18	200	12.5	40			
A25R-SDQCR/L11	32	25	23	200	15.5	45			
A32S-SDQCR/L11	40	32	30	250	19.5	48			

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

SDUCR/L



DC □□



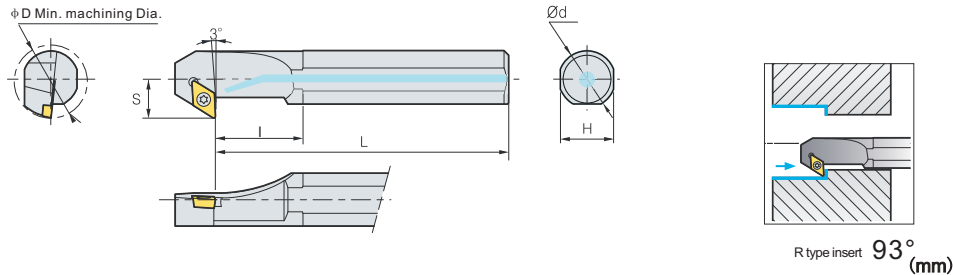
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
A10K-SDUCR/L07	13	10	9	125	7	25	DC..0702..	TRX08	BFTX2506
A12M-SDUCR/L07	16	12	11	150	8.5	30			
A16Q-SDUCR/L07	20	16	15	180	11	30			
A16Q-SDUCR/L11	20	16	15	180	11	30	DC..11T3..	TRX15	BFTX4008
A20R-SDUCR/L11	25	20	18	200	13	40			
A25R-SDUCR/L11	32	25	23	200	16	45			
A32S-SDUCR/L11	40	32	30	250	20	48			

SDZCR/L



DC □□



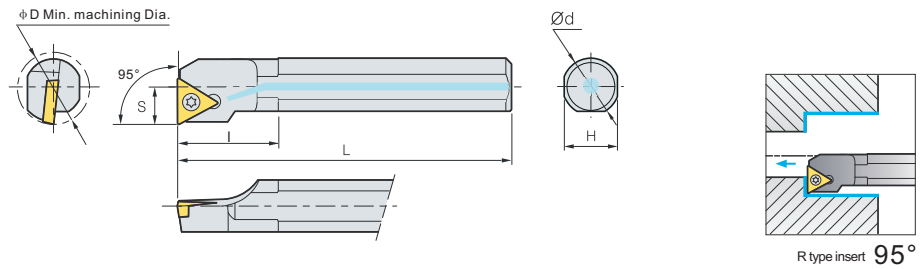
R type insert 93° (mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
A10M-SDZCR/L07	14	10	9	150	8.5	18	DC..0702..	TRX08	BFTX2506
A12M-SDZCR/L07	17	12	11	150	10.5	20			
A16Q-SDZCR/L07	21	16	15	180	12.5	26			
A20R-SDZCR/L11	26	20	18	200	15.5	27	DC..11T3..	TRX15	BFTX4008
A25R-SDZCR/L11	33	25	23	200	18	32			
A32S-SDZCR/L11	40	32	30	250	21.5	42			

STUCR/L



TC □□



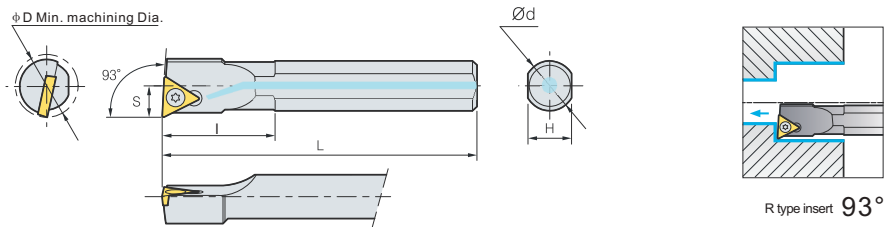
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
A08K-STUCR/L09	10	8	7	125	5.5	20	TC..0902..	TRX06	BFTX2204
A10K-STUCR/L09	12	10	9	125	6	22			
A10K-STUCR/L11	12	10	9	125	6	22	TC..1102..	TRX08	BFTX2506
A12M-STUCR/L11	16	12	11	150	8	26			
A16Q-STUCR/L11	20	16	15	180	10	32	TC..16T3..	TRX15	BFTX4010
A20R-STUCR/L16	25	20	18	200	13	40			
A25S-STUCR/L16	30	25	23	250	15	40			
A32S-STUCR/L16	38	32	30	250	20	48			
A32T-STUCR/L16	38	32	30	300	20	48			

STUPR/L



TP □□



(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
A08K-STUPR/L08	10	8	7	125	5.5	20	TP..0802..	TRX06	BFTX2204
A10K-STUPR/L08	12	10	9	125	6	22			BFTX2206
A08K-STUPR/L09	10	8	7	125	5.5	20	TP..0902..	TRX08	BFTX2506
A10K-STUPR/L09	12	10	9	125	6	22			
A10K-STUPR/L11	12	10	9	125	6	22	TP..1103..	TRX10	BFTX3008
A12M-STUPR/L11	16	12	11	150	8	26			
A16Q-STUPR/L11	20	16	15	180	10	32			
A20R-STUPR/L11	25	20	18	200	13	40			
A25R-STUPR/L11	30	25	23	200	15	40			

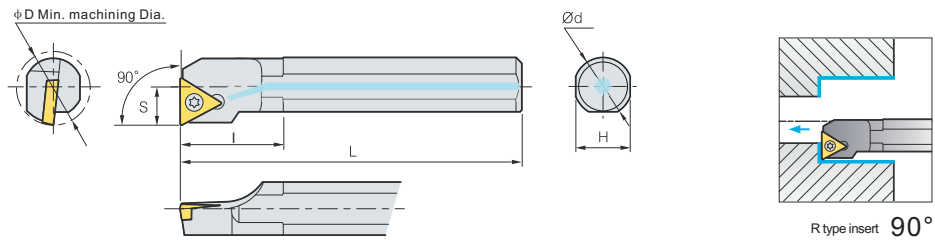
TOTIME Internal Toolholder
Steel Boring Bar with Coolant Hole

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

STFCR/L



TC □□



R type insert 90°

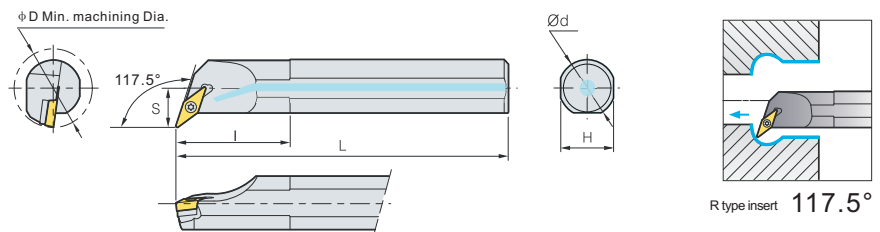
(mm)

Order No.	Dimension (mm)						Insert	Wrench	Screw
	D	d	H	L	S	I			
A08K-STFCR/L09	10	8	7	125	5.5	20	TC..0902..	TRX06	BFTX2206
A10K-STFCR/L09	12	10	9	125	6	22			
A10K-STFCR/L11	12	10	9	125	6	22	TC..1102..	TRX08	BFTX2506
A12M-STFCR/L11	16	12	11	150	8	26			
A16Q-STFCR/L11	20	16	15	180	10	32	TC..16T3..	TRX15	BFTX4010
A20R-STFCR/L16	25	20	18	200	13	36			
A25S-STFCR/L16	30	25	23	250	15	40			
A32S-STFCR/L16	38	32	30	250	20	48			

SVQBR/L



VB □□



R type insert 117.5°

(mm)

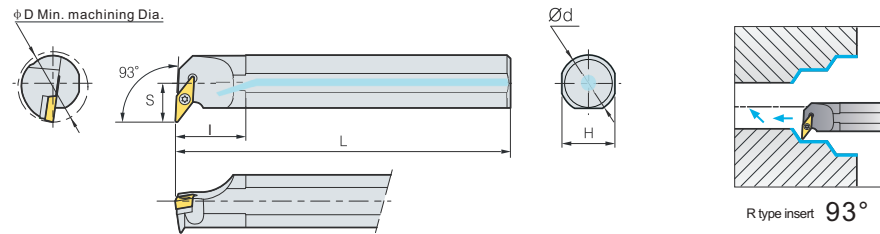
Order No.	Dimension (mm)						Insert	Wrench	Screw	Shim	ShimScrew
	D	d	H	L	S	I					
A16Q-SVQBR/L11	20	16	15	180	11	35	VB..1103..	TRX08	BFTX2506	-	-
A20R-SVQBR/L11	25	20	18	200	13	40					
A20R-SVQBR/L16	25	20	18	200	13	40	VB..1604..	TRX15	BFTX3508	-	-
A25S-SVQBR/L16	32	25	23	250	16	45					
A32S-SVQBR/L16	40	32	30	250	20	48					

TOTIME Internal Toolholder
Steel Boring Bar with Coolant Hole

SVUBR/L



VB □□

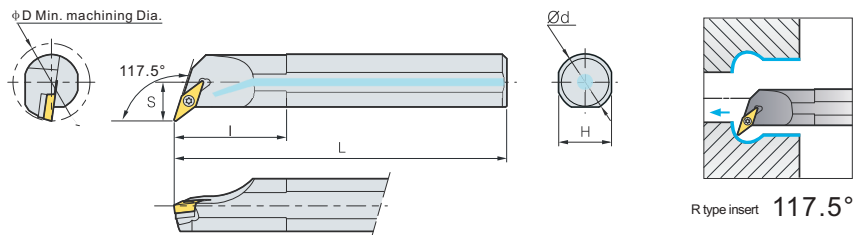


Order No.	Dimension (mm)						Insert	Wrench	Screw	Shim	ShimScrew
	D	d	H	L	S	I					
A16Q-SVUBR/L11	22	16	15	180	13	30	VB..1103..	TRX08	BFTX2506	-	-
A20R-SVUBR/L11	27	20	18	200	15	40					
A25S-SVUBR/L16	32	25	23	250	18	45					

SVQCR/L



VC □□

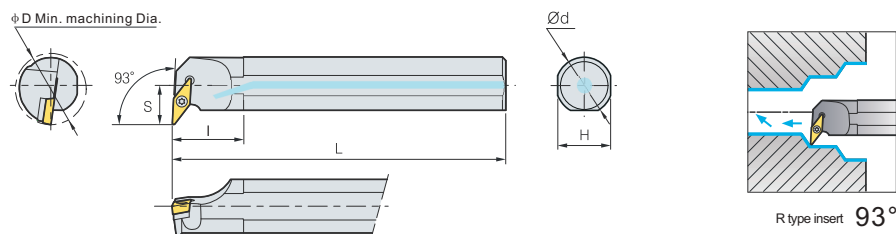


Order No.	Dimension (mm)						Insert	Wrench	Screw	Shim	ShimScrew
	D	d	H	L	S	I					
A12M-SVQCR/L11	16	12	11	150	9	28	VC..1103..	TRX08	BFTX2506	-	-
A16Q-SVQCR/L11	20	16	15	180	11	35					
A20R-SVQCR/L11	25	20	18	200	13	40					
A20R-SVQCR/L16	25	20	18	200	13	40	VC..1604..	TRX15	BFTX3508	-	-
A25S-SVQCR/L16	32	25	23	250	16	45					
A32S-SVQCR/L16	40	32	30	250	20	48					
A40T-SVQCR/L16	50	40	37	300	25.5	60		TRX15 LH035	BFTX3512	VSS322	BX0535

SVUCR/L



VC □□



Order No.	Dimension (mm)						Insert	Wrench	Screw	Shim	ShimScrew
	D	d	H	L	S	I					
A16Q-SVUCR/L11	22	16	15	180	13	30	VC..1103..	TRX08	BFTX2506	-	-
A20R-SVUCR/L11	27	20	18	200	15	40					
A25S-SVUCR/L16	32	25	23	250	18	45					
A32S-SVUCR/L16	40	32	30	250	22	50	VC..1604..	TRX15 LH035	BFTX3512	VSS322	BX5035

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

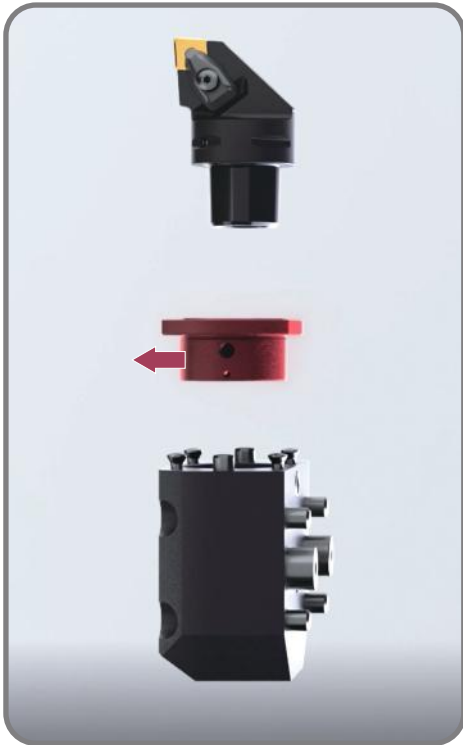
© Design Features



PSC interface is a 1:20 polygon short taper holder with bidirectional positioning, good rigidity and strong torque transmission ability

Benefit

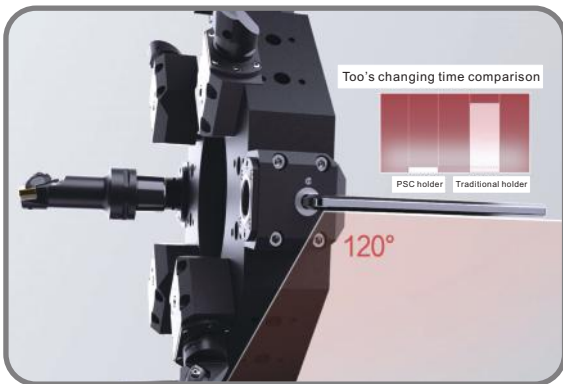
- Bidirectional positioning of shaft and diameter, obvious damping effect, to ensure the workpiece finish;
- Strong torque transmission ability, to realize heavy load cutting and save processing time.



Through the 180° rotation receiver, the left and right hand tools can be exchanged

Benefit

- The left and right hand tools can be used interchangeably to reduce the inventory cost of tools and fixtures;
- It can be used to transform old machine tools, realize automatic production and reduce labor cost;
- It can be used with the adapter handle to realize the clamping of different interfaces and reduce the cost of tool procurement due to incompatibility of interfaces.



The repeated positioning accuracy is up to 0.002mm, and the tool tightening is simple and easy to operate

Benefit

- Compared with the traditional turning tool, no need to adjust the tool in the machine and reduce the downtime;
- Increase the effective processing time by 25% and reduce the production cost of a single workpiece.

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

◎ Naming And Coding Rules

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting , Grooving
 Miniature Tool

PSC	32
	40
	50
	63
	80

D	platen
P	Hook
S	Screw

D		K		S	
H		L		U	
J		N		V	

02. CLAMPING

01. TYPE

PSC40
01

D
02

C
03

L
04

N
05

04. Kr

R
06

27
07

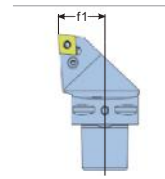
050
08

12
09

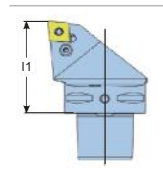
06. DIRECTION OF TOOL

L	Left
R	Right
N	Null

07. F1 | SIZE



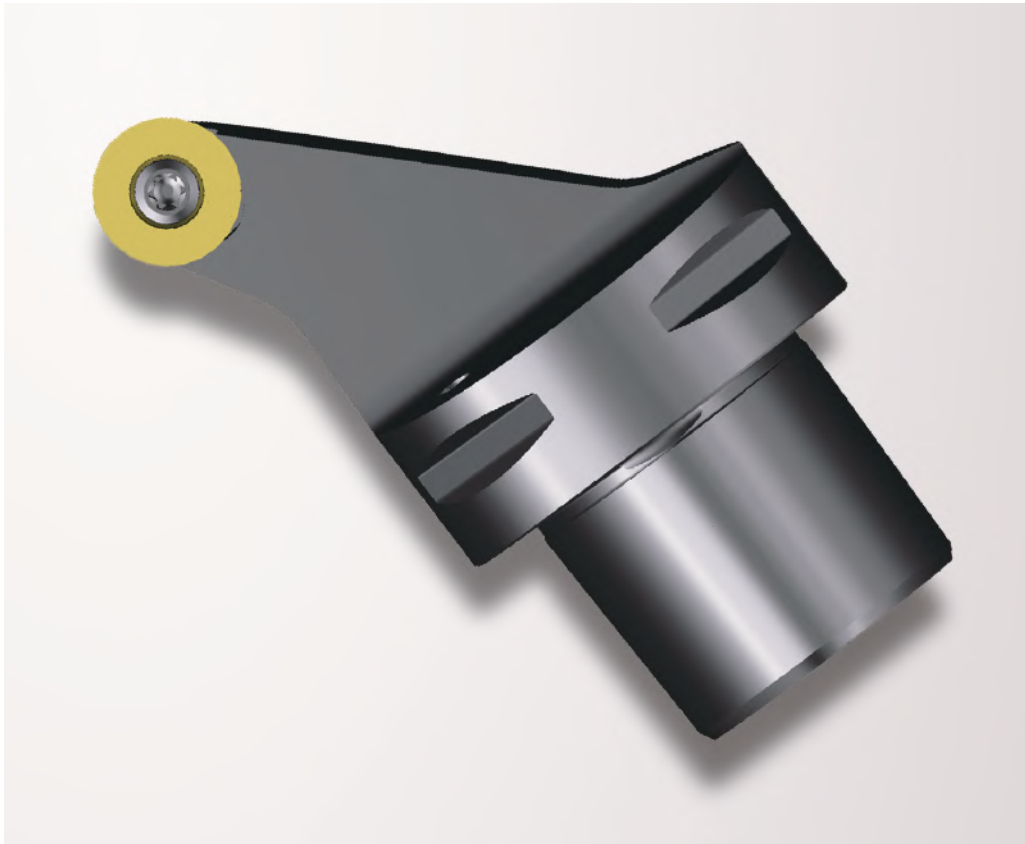
08. L1 | SIZE



INSERT

03 Shape	05 Angle	09 Length	
CC12	DC07	RC10	VB16
CN12	DC11	RC16	VN16
CN16	DN11	SN12	WN06
CN19	DN15	SN19	WN08
			TN16

EXTERNAL TURNING TOOL BODY



- For turning the external of the workpiece;
- Three clamping types, available in rough machining, semi-finishing, finishing machining;
- Out-machine tool adjustment, can be used in automatic mechanical equipment;
- Match the ISO standard insert on the market.

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

T Threading

Parting ,Grooving

Miniature Tool

DCLNR/L-Kr 95°

Insert

External Toolholder

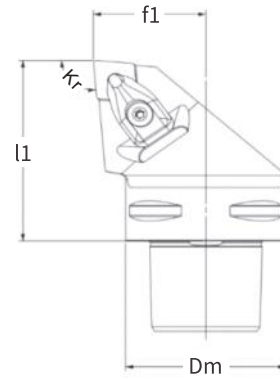
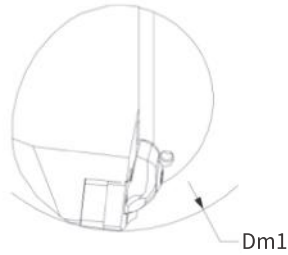
Internal Toolholder

PSC Toolholder

Threading


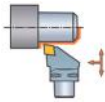
Parting, Grooving

Miniature Tool




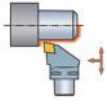
- CNMM CNMG CNMA CNGA
- The insert is for illustration only

Specification







(Kr)-Application		Ordering code	Dm	Dm1	f1	l1	γ	λ	m (kg)	ISO insert	
95°	12	C3-PSC32-DCLNR-22045-12	32	60	22	45	-6°	-6°	0.2	CN..1204..	
	12	C3-PSC32-DCLNL-22045-12	32	60	22	45	-6°	-6°	0.2		
	12	C4-PSC40-DCLNR-27050-12	40	110	27	50	-6°	-6°	0.37		
	12	C4-PSC40-DCLNL-27050-12	40	110	27	50	-6°	-6°	0.37		
	12	C5-PSC50-DCLNR-35060-12	50	110	35	60	-6°	-6°	0.7		
	12	C5-PSC50-DCLNL-35060-12	50	110	35	60	-6°	-6°	0.7		
		12	C6-PSC63-DCLNR-45065-12	63	110	45	65	-6°	-6°	1.2	CN..1606..
		12	C6-PSC63-DCLNL-45065-12	63	110	45	65	-6°	-6°	1.2	
		12	C8-PSC80-DCLNR-55080-12	80	110	55	80	-6°	-6°	2.62	
		12	C8-PSC80-DCLNL-55080-12	80	110	55	80	-6°	-6°	2.62	
	Miniature Tool	16	C4-PSC40-DCLNR-27055-16	40	125	27	55	-6°	-6°	0.4	CN..1606..
		16	C4-PSC40-DCLNL-27055-16	40	125	27	55	-6°	-6°	0.4	
16		C5-PSC50-DCLNR-35060-16	50	125	35	60	-6°	-6°	0.7		
16		C5-PSC50-DCLNL-35060-16	50	125	35	60	-6°	-6°	0.7		
16		C6-PSC63-DCLNR-45065-16	63	125	45	65	-6°	-6°	1.2		
16		C6-PSC63-DCLNL-45065-16	63	125	45	65	-6°	-6°	1.2		
Miniature Tool	16	C8-PSC80-DCLNR-55080-16	80	125	55	80	-6°	-6°	2.44	CN..1606..	
	16	C8-PSC80-DCLNL-55080-16	80	125	55	80	-6°	-6°	2.44		

DCLNR/L-Kr 95°

Specification

(Kr)-Application		Ordering code	Dm	Dm1	f1	l1	γ	λ	m (kg)	ISO insert
95° 	19	C5-PSC50-DCLNR-35060-19	50	80	35	60	-6°	-6°	0.7	CN..1906..
	19	C5-PSC50-DCLNL-35060-19	50	80	35	60	-6°	-6°	0.7	
	19	C6-PSC63-DCLNR-45060-19	63	81	45	65	-6°	-6°	1.2	
	19	C6-PSC63-DCLNL-45065-19	63	81	45	65	-6°	-6°	1.2	
	19	C8-PSC80-DCLNR-55080-19	80	100	55	80	-6°	-6°	2.44	
	19	C8-PSC80-DCLNL-55080-19	80	100	55	80	-6°	-6°	2.44	

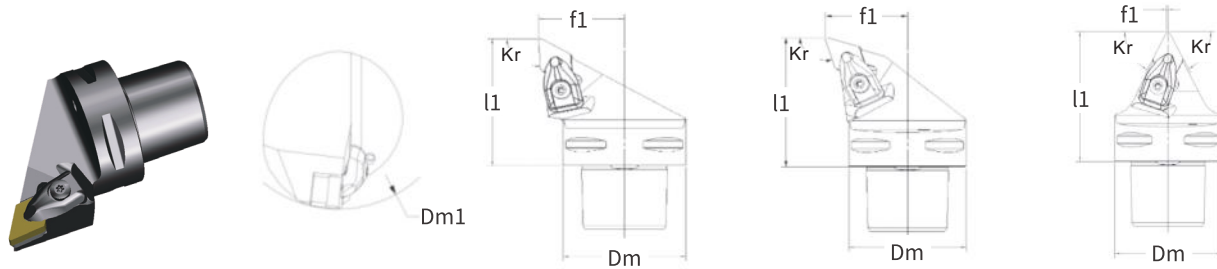
Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Complete clamp set
					
PSC32	12	ILD4085	322.236.03	248.150.10	412.028.021
PSC40-PSC80	12	ILD4085	322.230.01	248.150.10	412.028.021
PSC40-PSC80	16	ILD5011	322.234.03	248.200.10	412.028.031
PSC40-PSC80	19	ILD5011	322.236.01	248.200.10	413.028.041

The insert need to be ordered seperately.
Other accessories are included in the order.

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Treading
Parting, Grooving
Miniature Tool

DDJNR/L-Kr 93° DDHNR/L-Kr 107.5° DDNNN-Kr 62.5°




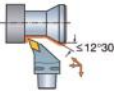

- DNMM DNMX DNMG DNMA DNGA
- The insert is for illustration only

Specification







(Kr)-Application		Ordering code	Dm	Dm1	f1	l1	γ	λ	m (kg)	ISO insert
93°		11 C3-PSC32-DDJNR-22045-11	32	60	22	45	-6°	-7°	0.19	DN..1104..
		11 C3-PSC32-DDJNL-22045-11	32	60	22	45	-6°	-7°	0.19	
		11 C4-PSC40-DDJNR-27050-11	40	60	27	50	-6°	-7°	0.34	
		11 C4-PSC40-DDJNL-27050-11	40	60	27	50	-6°	-7°	0.34	
		11 C5-PSC50-DDJNR-35060-11	50	65	35	60	-6°	-7°	0.65	
		11 C5-PSC50-DDJNL-35060-11	50	65	35	60	-6°	-7°	0.65	
Parting, Grooving		11 C6-PSC63-DDJNR-45065-11	63	81	45	65	-6°	-7°	1.08	DN..1506..
		11 C6-PSC63-DDJNL-45065-11	63	81	45	65	-6°	-7°	1.08	
		15 C4-PSC40-DDJNR-27055-15	40	110	27	55	-6°	-7°	0.36	
		15 C4-PSC40-DDJNL-27055-15	40	110	27	55	-6°	-7°	0.36	
		15 C5-PSC50-DDJNR-35060-15	50	110	35	60	-6°	-7°	0.36	
		15 C5-PSC50-DDJNL-35060-15	50	110	35	60	-6°	-7°	0.36	
Miniature Tool		15 C6-PSC63-DDJNR-45065-15	63	110	45	65	-6°	-7°	1.05	DN..1506..
		15 C6-PSC63-DDJNL-45065-15	63	110	45	65	-6°	-7°	1.05	
		15 C8-PSC80-DDJNR-55080-15	80	110	55	80	-6°	-7°	2.16	
		15 C8-PSC80-DDJNL-55080-15	80	110	55	80	-6°	-7°	2.16	

DDJNR/L-Kr 93° DDHNR/L-Kr 107.5° DDNNN-Kr 62.5°

Specification

(Kr)-Application		Ordering code	Dm	Dm1	f1	l1	γ	λ	m (kg)	ISO insert
107.5° 	15	C4-PSC40-DDHNR-27055-15	40	110	27	55	-6°	-7°	0.38	DN..1506..
	15	C4-PSC40-DDHNL-27055-15	40	110	27	55	-6°	-7°	0.38	
	15	C5-PSC50-DDHNR-35060-15	50	110	35	60	-6°	-7°	0.66	
	15	C5-PSC50-DDHNL-35060-15	50	110	35	60	-6°	-7°	0.66	
	15	C6-PSC63-DDHNR-45065-15	63	110	45	65	-6°	-7°	1.15	
	15	C6-PSC63-DDHNL-45065-15	63	110	45	65	-6°	-7°	1.15	
	15	C8-PSC80-DDHNR-55080-15	80	110	55	80	-6°	-7°	2.36	
	15	C8-PSC80-DDHNL-55080-15	80	110	55	80	-6°	-7°	2.36	
62.5° 	15	C4-PSC40-DDNNN-00055-15	40	-	0.5	55	-5°	-9°	0.38	DN..1506..
	15	C5-PSC50-DDNNN-00060-15	50	-	0.5	60	-5°	-9°	0.62	
	15	C6-PSC63-DDNNN-00065-15	63	-	0.5	65	-5°	-9°	1.06	
	15	C8-PSC80-DDNNN-00080-15	80	-	0.5	80	-5°	-9°	2.1	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Complete clamp set
					
PSC32-PSC63	11	ILD3072	322.267.01	242.090.40	412.028.011
PSC40-PSC80	15	ILD4085	322.266.02	248.150.10	412.028.021

The insert need to be ordered seperately.
Other accessories are included in the order.

Insert

External Toolholder

Internal Toolholder

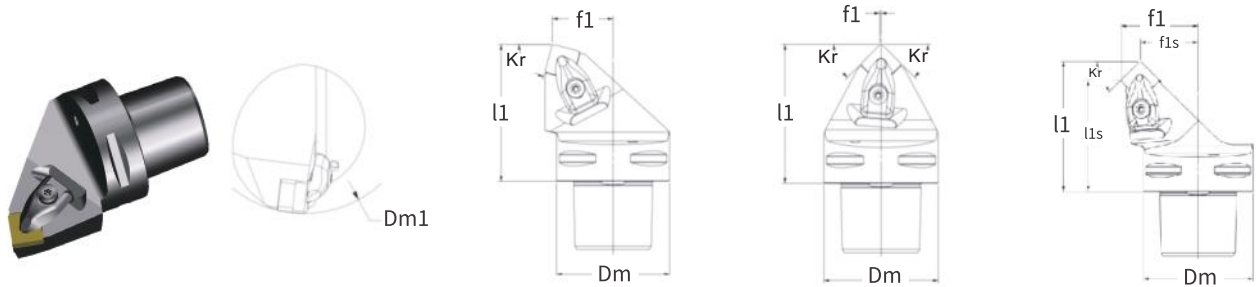
PSC Toolholder

Treading

Parting, Grooving

Miniature Tool

DSKNR/L-Kr 75° DSDNN-Kr 45° DSSNR/L-Kr 45°





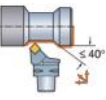
- SNMM SNMG SNMA SNGA
- The insert is for illustration only

Specification

(Kr)-Application		Ordering code	Dm	Dm1	f1	l1	f1s	l1s	γ	λ	m (kg)	ISO insert
75°		12 C3-PSC32-DSKNR-22040-12	32	60	22	40	-	-	-6°	-6°	0.2	SN..1204..
		12 C3-PSC32-DSKNL-22040-12	32	60	22	40	-	-	-6°	-6°	0.2	
		12 C4-PSC40-DSKNR-27050-12	40	110	27	50	-	-	-6°	-6°	0.35	
		12 C4-PSC40-DSKNL-27050-12	40	110	27	50	-	-	-6°	-6°	0.35	
		12 C5-PSC50-DSKNR-35060-12	50	110	35	60	-	-	-6°	-6°	0.75	
		12 C5-PSC50-DSKNL-35060-12	50	110	35	60	-	-	-6°	-6°	0.75	
Parting, Grooving		12 C6-PSC63-DSKNR-45065-12	63	110	45	65	-	-	-6°	-6°	1.24	SN..1204..
		12 C6-PSC63-DSKNL-45065-12	63	110	45	65	-	-	-6°	-6°	1.24	
Miniature Tool		19 C5-PSC50-DSKNR-35060-19	50	125	35	60	-	-	-6°	-6°	0.76	SN..1906..
		19 C5-PSC50-DSKNL-35060-19	50	125	35	60	-	-	-6°	-6°	0.76	
		19 C6-PSC63-DSKNR-45065-19	63	125	45	65	-	-	-6°	-6°	1.27	
		19 C6-PSC63-DSKNL-45065-19	63	125	45	65	-	-	-6°	-6°	1.27	
Miniature Tool		19 C8-PSC80-DSKNR-55080-19	80	125	55	80	-	-	-6°	-6°	2.54	SN..1906..
		19 C8-PSC80-DSKNL-55080-19	80	125	55	80	-	-	-6°	-6°	2.54	

DSKNR/L-Kr 75° DSDNN-Kr 45° DSSNR/L-Kr 45°

Specification

(Kr)-Application		Ordering code	Dm	Dm1	f1	l1	f1s	l1s	γ	λ	m (kg)	ISO insert
45° 	12	C3-PSC32-DSDNN-00048-12	32	-	0.3	48	-	-	-6°	-6°	0.19	SN..1204..
	12	C4-PSC40-DSDNN-00050-12	40	-	0.3	50	-	-	-6°	-6°	0.32	
	12	C5-PSC50-DSDNN-00060-12	50	-	0.3	60	-	-	-6°	-6°	0.61	
	12	C6-PSC63-DSDNN-00065-12	63	-	0.3	65	-	-	-6°	-6°	1.07	
45° 	12	C3-PSC32-DSSNR-22040-12	32	60	22	40	13.7	48.3	-8°	0°	0.19	SN..1204..
	12	C3-PSC32-DSSNL-22040-12	32	60	22	40	13.7	48.3	-8°	0°	0.19	
	12	C4-PSC40-DSSNR-27042-12	40	110	27	42	18.7	50.3	-8°	0°	0.31	
	12	C4-PSC40-DSSNL-27042-12	40	110	27	42	18.7	50.3	-8°	0°	0.31	
	12	C5-PSC50-DSSNR-35052-12	50	110	35	52	26.7	60.3	-8°	0°	0.6	
	12	C5-PSC50-DSSNL-35052-12	50	110	35	52	26.7	60.3	-8°	0°	0.6	
	12	C6-PSC63-DSSNR-45056-12	63	110	45	56	36.7	64.3	-8°	0°	0.99	
	12	C6-PSC63-DSSNL-45056-12	63	110	45	56	36.7	64.3	-8°	0°	0.99	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Complete clamp set
					
PSC32	12	ILD4085	322.426.02	248.150.10	412.028.021
PSC40-PSC63	12	ILD4085	322.425.01	248.150.10	412.028.021
PSC50-PSC80	19	ILD5011	322.425.04	248.200.10	412.028.041

The insert need to be ordered separately.
Other accessories are included in the order.

DWLNR/L-Kr 95°

Insert

External Toolholder

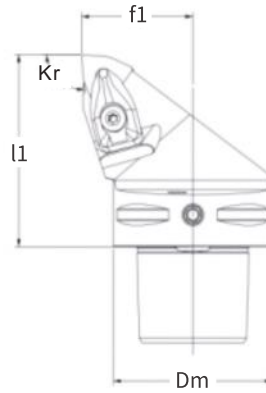
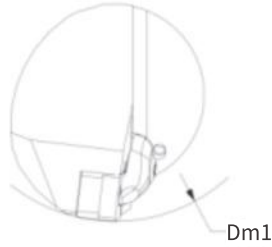
Internal Toolholder

PSC Toolholder

Threading



Parting , Grooving

Miniature Tool




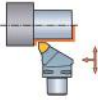
- WNMM WNMG WNGA WNMA
- The insert is for illustration only

Specification













(Kr)-Application		Ordering code	Dm	Dm1	f1	l1	γ	λ	m (kg)	ISO insert
95° 	06	C3-PSC32-DWLNR-22040-06	32	60	22	40	-6°	-6°	0.18	WN..0604..
	06	C3-PSC32-DWLNL-22040-06	32	60	22	40	-6°	-6°	0.18	
	06	C4-PSC40-DWLNR-27050-06	40	60	27	50	-6°	-6°	0.35	
	06	C4-PSC40-DWLNL-27050-06	40	60	27	50	-6°	-6°	0.35	
	06	C5-PSC50-DWLNR-35060-06	50	65	35	60	-6°	-6°	0.67	
	06	C5-PSC50-DWLNL-35060-06	50	65	35	60	-6°	-6°	0.67	
	06	C6-PSC63-DWLNR-45065-06	63	81	45	65	-6°	-6°	1.21	
	06	C6-PSC63-DWLNL-45065-06	63	81	45	65	-6°	-6°	1.21	

DWLNR/L-Kr 95°

Specification

(Kr)-Application		Ordering code	Dm	Dm1	f1	l1	γ	λ	m (kg)	ISO insert
	08	C4-PSC40-DWLNR-27050-08	40	110	27	50	-6°	-6°	0.35	WN..0804
	08	C4-PSC40-DWLNL-27050-08	40	110	27	50	-6°	-6°	0.35	
	08	C5-PSC50-DWLNR-35060-08	50	110	35	60	-6°	-6°	0.67	
	08	C5-PSC50-DWLNL-35060-08	50	110	35	60	-6°	-6°	0.67	
	08	C6-PSC63-DWLNR-45065-08	63	110	45	65	-6°	-6°	1.22	
	08	C6-PSC63-DWLNL-45065-08	63	110	45	65	-6°	-6°	1.22	
	08	C8-PSC80-DWLNR-55080-08	80	110	55	80	-6°	-6°	2.44	
	08	C8-PSC80-DWLNL-55080-08	80	110	55	80	-6°	-6°	2.44	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Complete clamp set
 PSC32-PSC63	 06	 ILD3072	 322.328.01	 242.090.40	 412.028.011
 PSC40-PSC80	 08	 ILD4085	 322.331.12	 248.150.10	 412.028.021

The insert need to be ordered separately.
Other accessories are included in the order.

- Insert
- External Toolholder
- Internal Toolholder
- PSC Toolholder
- Treading
- Parting, Grooving
- Miniature Tool

DVJNR/L-Kr 93° DVVNN/L-Kr 72.5°

Insert

External Toolholder

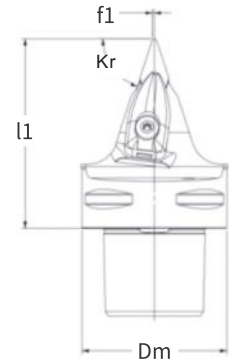
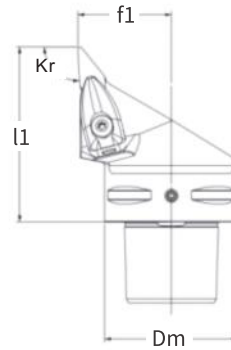
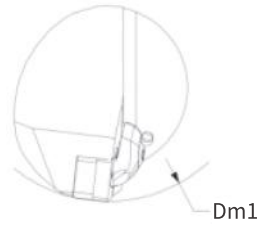
Internal Toolholder

PSC Toolholder

Threading



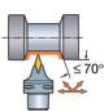
Parting , Grooving

Miniature Tool



- VNMG VNGP
- The insert is for illustration only

Specification

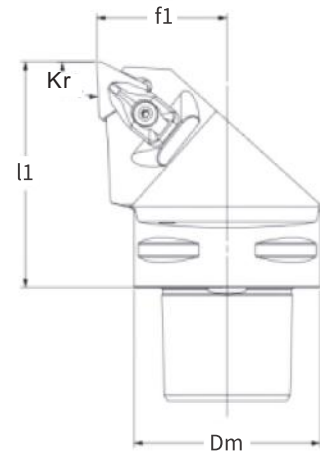
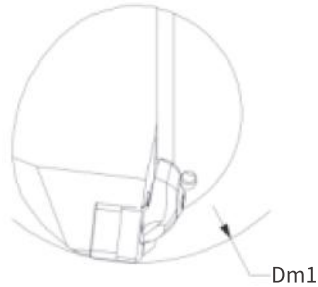
(Kr)-Application		Ordering code	Dm	Dm1	f1	l1	γ	λ	m (kg)	ISO insert
93° 	16	C4-PSC40-DVJNR-27062-16	40	60	27	62	4°	-13°	0.4	VN..1604..
	16	C4-PSC40-DVJNL-27062-16	40	60	27	62	4°	-13°	0.4	
	16	C5-PSC50-DVJNR-35065-16	50	65	35	65	4°	-13°	0.65	
	16	C5-PSC50-DVJNL-35065-16	50	65	35	65	4°	-13°	0.65	
	16	C6-PSC63-DVJNR-45065-16	63	81	45	80	4°	-13°	1.01	
	16	C6-PSC63-DVJNL-45065-16	63	81	45	80	4°	-13°	1.01	
	16	C8-PSC80-DVJNR-55080-16	80	100	55	80	4°	-13°	2.1	
	16	C8-PSC80-DVJNL-55080-16	80	100	55	80	4°	-13°	2.1	
72.5° 	16	C4-PSC40-DVVNN-00062-16	40	-	0.6	62	4°	-13°	0.41	VN..1604..
	16	C5-PSC50-DVVNN-00065-16	50	-	0.6	65	4°	-13°	0.63	
	16	C6-PSC63-DVVNN-00065-16	63	-	0.6	65	4°	-13°	1.03	
	16	C8-PSC80-DVVNN-00080-16	80	-	0.6	80	4°	-13°	2	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Complete clamp set
					
PSC40-PSC80	16	ILD3581	322. 269. 01	248.15.10	412. 028. 61

The insert need to be ordered separately.
Other accessories are included in the order.

DTJNR/L-Kr 93°



- TNMM TNMX TNMG TNMA TNGA
- The insert is for illustration only

Specification

(Kr)-Application		Ordering code	Dm	Dm1	f1	l1	γ	λ	m (kg)	ISO insert
93° 	16	C4-PSC40-DTJNR-27050-16	40	110	27	50	-6°	-6°	0.43	TN..1604..
	16	C4-PSC40-DTJNL-27050-16	40	110	27	50	-6°	-6°	0.43	
	16	C5-PSC50-DTJNR-35060-16	50	110	35	60	-6°	-6°	0.78	
	16	C5-PSC50-DTJNL-35060-16	50	110	35	60	-6°	-6°	0.78	
	16	C6-PSC63-DTJNR-45065-16	63	110	45	65	-6°	-6°	1.34	
	16	C6-PSC63-DTJNL-45065-16	63	110	45	65	-6°	-6°	1.34	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Complete clamp set
 PSC40-PSC80	 16	 ILD3072	 322. 315. 02	 242.090.40	 412. 028. 11

The insert need to be ordered separately.
Other accessories are included in the order.



PCLNR/L-Kr 95°

Insert

External Toolholder

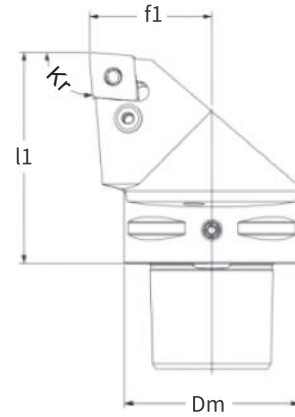
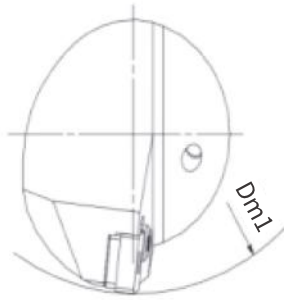
Internal Toolholder

PSC Toolholder

Threading


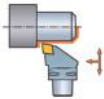
Parting, Grooving

Miniature Tool



- CNMM CNMG CNMA CNGA
- The insert is for illustration only

Specification

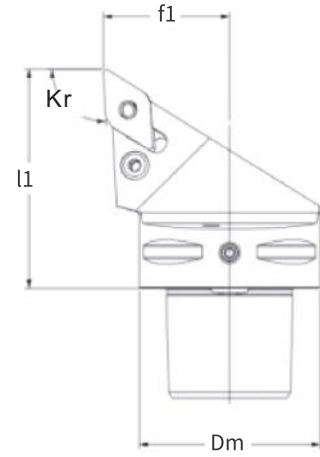
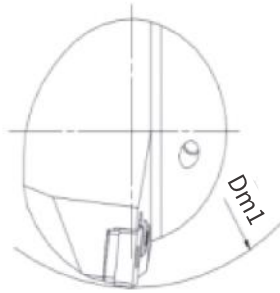
(Kr)-Application		Ordering code	Dm	f1	l1	γ	λ	m (kg)	ISO insert
 95°	12	C4-PSC40-PCLNR-27050-12	40	27	50	-6°	-6°	0.36	CN..1204..
	12	C4-PSC40-PCLNL-27050-12	40	27	50	-6°	-6°	0.36	
	12	C5-PSC50-PCLNR-35060-12	50	35	60	-6°	-6°	0.68	
	12	C5-PSC50-PCLNL-35060-12	50	35	60	-6°	-6°	0.68	
	12	C6-PSC63-PCLNR-45065-12	63	45	65	-6°	-6°	1.19	
	12	C6-PSC63-PCLNL-45065-12	63	45	65	-6°	-6°	1.19	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Lever
					
PSC40-PSC63	12	414.438.21	322.318.50	241.030.63	413.438.41

The insert need to be ordered seperately.
Other accessories are included in the order.


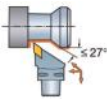
PDJNR/L-Kr 93°



- DNMM DNMX DNMG DNMA DNMA
- The insert is for illustration only

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

Specification

(Kr)-Application		Ordering code	Dm	f1	l1	γ	λ	m (kg)	ISO insert
93° 	15	C4-PSC40-PDJNR-27055-15	40	27	55	-6°	-7°	0.36	DN..1506..
	15	C4-PSC40-PDJNL-27055-15	40	27	55	-6°	-7°	0.36	
	15	C5-PSC50-PDJNR-35060-15	50	35	60	-6°	-7°	0.62	
	15	C5-PSC50-PDJNL-35060-15	50	35	60	-6°	-7°	0.62	
	15	C6-PSC63-PDJNR-45065-15	63	45	65	-6°	-7°	1.05	
	15	C6-PSC63-PDJNL-45065-15	63	45	65	-6°	-7°	1.05	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Lever
					
PSC40-PSC63	15	414.438.30	322.358.51	241.030.63	413.438.47

The insert need to be ordered seperately.
Other accessories are included in the order.

PSKNR/L-Kr 75°

Insert

External Toolholder

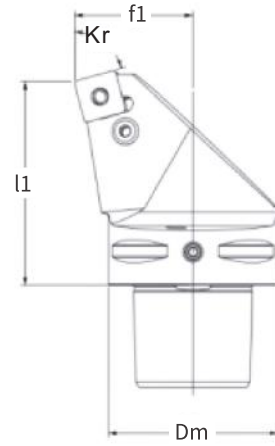
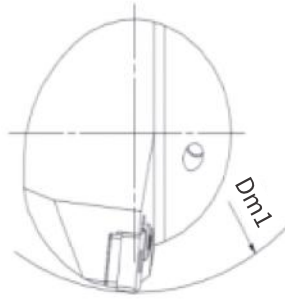
Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool



- SNMM SNMG SNMA SNGA
- The insert is for illustration only

Specification

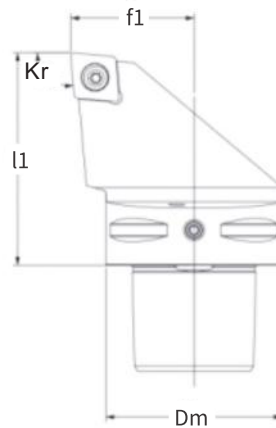
(Kr)-Application		Ordering code	Dm	f1	l1	γ	λ	m (kg)	ISO insert
 75°	12	C4-PSC40-PSKNR-27050-12	40	27	50	-6°	-6°	0.34	SN..1204..
	12	C4-PSC40-PSKNL-27050-12	40	27	50	-6°	-6°	0.34	
	12	C5-PSC50-PSKNR-35060-12	50	35	60	-6°	-6°	0.72	
	12	C5-PSC50-PSKNL-35060-12	50	35	60	-6°	-6°	0.72	
	12	C6-PSC63-PSKNR-45065-12	63	45	65	-6°	-6°	1.15	
	12	C6-PSC63-PSKNL-45065-12	63	45	65	-6°	-6°	1.15	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Lever
 PSC40-PSC63	 12	 414.438.21	 322.438.21	 241.030.63	 413.438.41

The insert need to be ordered separately.
Other accessories are included in the order.

SCLCR/L-Kr 95°



- CCMT CCGT CCGX CCET CCMW
- The insert is for illustration only

Specification

(Kr)-Application		Ordering code	Dm	f1	l1	γ	λ	m (kg)	ISO insert
95° 	12	C3-PSC32-SCLCR-22040-12	32	22	40	0°	0°	0.2	CC..1204..
	12	C3-PSC32-SCLCL-22040-12	32	22	40	0°	0°	0.2	
	12	C4-PSC40-SCLCR-27050-12	40	27	50	0°	0°	0.44	
	12	C4-PSC40-SCLCL-27050-12	40	27	50	0°	0°	0.44	
	12	C5-PSC50-SCLCR-35060-12	50	35	60	0°	0°	0.77	
	12	C5-PSC50-SCLCL-35060-12	50	35	60	0°	0°	0.77	
	12	C6-PSC63-SCLCR-45065-12	63	45	65	0°	0°	1.34	
	12	C6-PSC63-SCLCL-45065-12	63	45	65	0°	0°	1.34	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Insert screw
 PSC32-PSC63	 12	 512.090.03	 322.232.02	 248.150.10&241.040.70	 ILD4014

The insert need to be ordered separately.
Other accessories are included in the order.

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Treading
Parting, Grooving
Miniature Tool

SDJCR/L-Kr 93°

Insert

External Toolholder

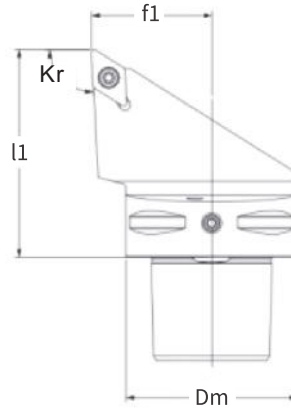
Internal Toolholder

PSC Toolholder

Threading

Parting , Grooving

Miniature Tool



- DCMT DCMX DCGT DCGX DCET DCMW
- The insert is for illustration only

Specification

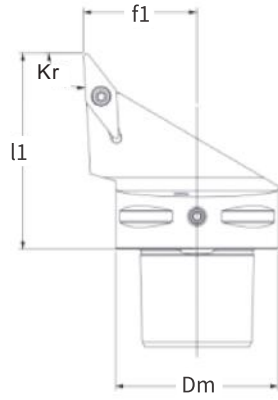
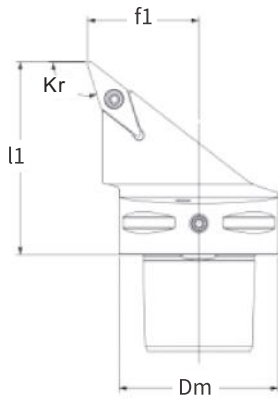
(Kr)-Application		Ordering code	Dm	f1	l1	γ	λ	m (kg)	ISO insert
	11	C3-PSC32-SDJCR-22040-11	32	22	40	0°	0°	0.16	DC..11T3
	11	C3-PSC32-SDJCL-22040-11	32	22	40	0°	0°	0.16	
	11	C4-PSC40-SDJCR-27050-11	40	27	50	0°	0°	0.33	
	11	C4-PSC40-SDJCL-27050-11	40	27	50	0°	0°	0.33	
	11	C5-PSC50-SDJCR-35060-11	50	35	60	0°	0°	0.63	
	11	C5-PSC50-SDJCL-35060-11	50	35	60	0°	0°	0.63	
	11	C6-PSC63-SDJCR-45065-11	63	45	65	0°	0°	1.05	
	11	C6-PSC63-SDJCL-45065-11	63	45	65	0°	0°	1.05	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Insert screw
PSC32-PSC63	11	512.090.01	322.263.01	248.150.10&241.035.65	ILD3512

The insert need to be ordered seperately.
Other accessories are included in the order.

SVHBR/L-Kr 107.5° SVJBR/L-Kr 93°



- VBMT VBGT VCGX VCEX VCGT VCET VBMW VCMW
- The insert is for illustration only

Specification

(Kr)-Application		Ordering code	Dm	f1	l1	γ	λ	m (kg)	ISO insert
107.5° 	16	C4-PSC40-SVHBR-27050-16	40	27	50	0°	0°	0.38	VB..1604.. VC..1604..
	16	C4-PSC40-SVHBL-27050-16	40	27	50	0°	0°	0.38	
	16	C5-PSC50-SVHBR-35060-16	50	35	60	0°	0°	0.64	
	16	C5-PSC50-SVHBL-35060-16	50	35	60	0°	0°	0.64	
	16	C6-PSC63-SVHBR-45065-16	63	45	65	0°	0°	1.12	
	16	C6-PSC63-SVHBL-45065-16	63	45	65	0°	0°	1.12	
93° 	16	C4-PSC40-SVJBR-27050-16	40	27	50	0°	0°	0.35	VB..1604.. VC..1604..
	16	C4-PSC40-SVJBL-27050-16	40	27	50	0°	0°	0.35	
	16	C5-PSC50-SVJBR-35060-16	50	35	60	0°	0°	0.7	
	16	C5-PSC50-SVJBL-35060-16	50	35	60	0°	0°	0.7	
	16	C6-PSC63-SVJBR-45065-16	63	45	65	0°	0°	1.11	
	16	C6-PSC63-SVJBL-45065-16	63	45	65	0°	0°	1.11	

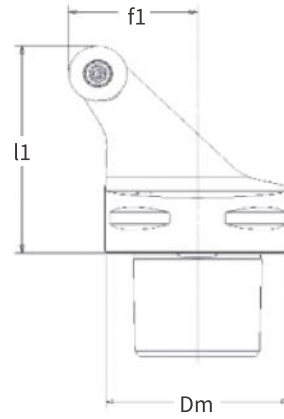
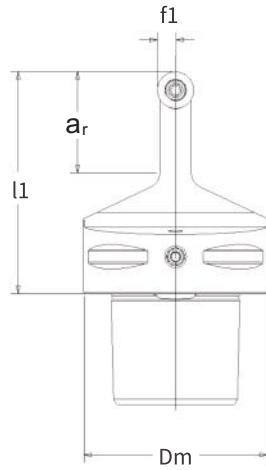
Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Insert screw
PSC32-PSC63	16	512.090.01	322.270.01	248.150.10&241.035.65	ILD3512

The insert need to be ordered separately.
Other accessories are included in the order.

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

SRDCN SRSCR/L



- RCMT RCGX-AL
- The insert is for illustration only

Specification

(Kr)-Application		Ordering code	Dm	ar	f1	l1	γ	λ	m (kg)	ISO insert
	10	C3-PSC32-SRDCN-00040-10A	32	20	5	40	0°	0°	0.13	RC.10T3M0
	10	C4-PSC40-SRDCN-00050-10A	40	25	5	50	0°	0°	0.27	
	10	C5-PSC50-SRDCN-00060-10A	50	25	5	60	0°	0°	0.51	
	10	C6-PSC63-SRDCN-00065-10A	63	25	5	65	0°	0°	0.91	
	16	C5-PSC50-SRSCR-35060-16	50	-	35	60	0°	0°	0.56	RC.1606M0
	16	C5-PSC50-SRSL-35060-16	50	-	35	60	0°	0°	0.56	
	16	C6-PSC63-SRSCR-45065-16	63	-	45	65	0°	0°	1.03	
	16	C6-PSC63-SRSL-45065-16	63	-	45	65	0°	0°	1.03	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Insert screw
PSC32-PSC63					
PSC50-PSC63	10	512.090.01	322.110.01	248.150.10&241.035.65	ILD3510
PSC50-PSC63	16	512.090.06	322.110.06	248.200.10&241.050.80	ILD5017

The insert need to be ordered separately.
Other accessories are included in the order.

INTERNAL TURNING TOOL BODY



- For turning the internal of the workpiece;
- The maximum length of standard turning tool body can be 140mm;
- Out-machine tool adjustment, can be used in automatic mechanical equipment;
- Match the ISO standard insert in the market.

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

DCLNR/L-Kr 95°

Insert

External Toolholder

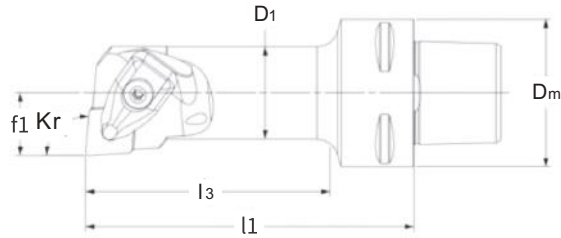
Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool



- CNMM CNMG CNMA CNGA
- The insert is for illustration only

Specification

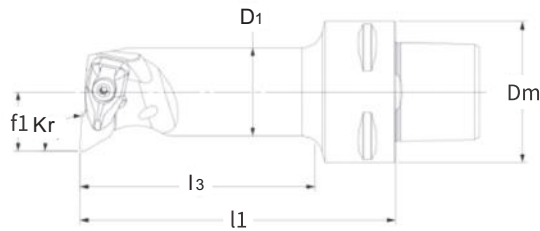
(Kr)-Application		Ordering code	Dm	Dmin	D1	f1	l1	l3	γ	λ	m (kg)	ISO insert
 95°	12	C4-PSC40-DCLNR-17090-12	40	32	25	17	90	69	-6°	-12°	0.47	CN..1204
	12	C4-PSC40-DCLNL-17090-12	40	32	25	17	90	69	-6°	-12°	0.47	
	12	C5-PSC50-DCLNR-17090-12	50	32	25	17	90	67	-6°	-12°	0.65	
	12	C5-PSC50-DCLNL-17090-12	50	32	25	17	90	67	-6°	-12°	0.65	
	12	C6-PSC63-DCLNR-17100-12	63	32	25	17	100	73	-6°	-12°	1.04	
	12	C6-PSC63-DCLNL-17100-12	63	32	25	17	100	73	-6°	-12°	1.04	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Complete clamp set
PSC40-PSC63	12	ILD4085	322.236.03	248.150.10	412.028.021

The insert need to be ordered seperately.
Other accessories are included in the order.

DDUNR/L-Kr 93°



- DNMM DNMX DNMG DNMA DNGA
- The insert is for illustration only

Specification

(Kr)-Application		Ordering code	Dm	Dmin	D1	f1	l1	l3	γ	λ	m (kg)	ISO insert	
	11	C4-PSC40-DDUNR-17090-11	40	32	25	17	90	68	-6°	-12°	0.47	DN..1104..	
	11	C4-PSC40-DDUNL-17090-11	40	32	25	17	90	68	-6°	-12°	0.47		
	11	C5-PSC50-DDUNR-17090-11	50	32	25	17	90	66	-6°	-12°	0.65		
	11	C5-PSC50-DDUNL-17090-11	50	32	25	17	90	66	-6°	-12°	0.65		
		15	C4-PSC40-DDUNR-27080-15	40	50	39.7	27	80	59	-6°	-11°	1.04	DN..1506..
		15	C4-PSC40-DDUNL-27080-15	40	50	39.7	27	80	59	-6°	-11°	1.04	
		15	C5-PSC50-DDUNR-27140-15	50	50	40	27	140	118	-6°	-11°	1.04	
		15	C5-PSC50-DDUNL-27140-15	50	50	40	27	140	118	-6°	-11°	1.04	
		15	C6-PSC63-DDUNR-27140-15	63	50	40	27	140	114	-6°	-11°	1.04	
		15	C6-PSC63-DDUNL-27140-15	63	50	40	27	140	114	-6°	-11°	1.04	

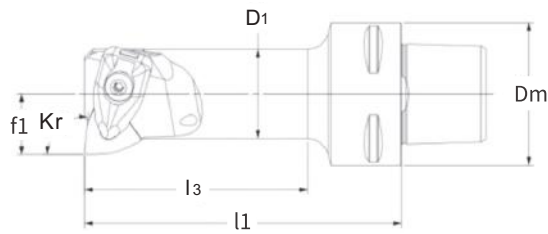
Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Complete clamp set
PSC40-PSC50	11	ILD3072	322.267.01	242.090.40	412.028.011
PSC40-PSC63	15	ILD4085	322.266.02	248.150.10	412.028.021

The insert need to be ordered separately.
Other accessories are included in the order.

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

DWLNR/L-Kr 95°



- WNMM WNMG WNGA WNMA
- The insert is for illustration only

Specification

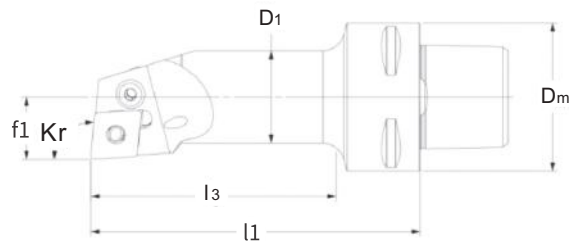
(Kr)-Application		Ordering code	Dm	Dmin	D1	f1	l1	l3	γ	λ	m (kg)	ISO insert
	08	C4-PSC40-DWLNR-17090-08	40	32	25	17	90	69	-0°	-6°	0.48	WN..0804..
	08	C4-PSC40-DWLNL-17090-08	40	32	25	17	90	69	-0°	-6°	0.48	
	08	C5-PSC50-DWLNR-17090-08	50	32	25	17	90	69	-0°	-6°	0.67	
	08	C5-PSC50-DWLNL-17090-08	50	32	25	17	90	69	-0°	-6°	0.67	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Complete clamp set
PSC40-PSC50	08	ILD4085	322.328.02	248.150.10	412.028.021


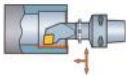
The insert need to be ordered separately.
Other accessories are included in the order.

PCLNR/L-Kr 95°



- CNMM CNMG CNMA CNGA
- The insert is for illustration only

Specification

(Kr)-Application		Ordering code	Dm	Dmin	D1	f1	l1	l3	γ	λ	m (kg)	ISO insert
95°		12 C3-PSC32-PCLNR-17090-12	32	32	25	17	90	75	-6°	-11°	0.3	CN..1204..
		12 C3-PSC32-PCLNL-17090-12	32	32	25	17	90	75	-6°	-11°	0.3	
		12 C3-PSC32-PCLNR-22064-12	32	40	32	22	64	50	-6°	-11°	0.3	
		12 C3-PSC32-PCLNL-22064-12	32	40	32	22	64	50	-6°	-11°	0.3	
		12 C3-PSC32-PCLNR-22096-12	32	40	32	22	96	82	-6°	-11°	0.3	
		12 C3-PSC32-PCLNL-22096-12	32	40	32	22	96	82	-6°	-11°	0.3	
		12 C4-PSC40-PCLNR-17090-12	40	32	25	17	90	69	-6°	-11°	0.5	
		12 C4-PSC40-PCLNL-17090-12	40	32	25	17	90	69	-6°	-11°	0.5	
		12 C4-PSC40-PCLNR-22110-12	40	40	32	22	110	89	-6°	-11°	0.5	
		12 C4-PSC40-PCLNL-22110-12	40	40	32	22	110	89	-6°	-11°	0.5	
		12 C4-PSC40-PCLNR-27080-12	40	50	40	27	80	60	-6°	-10°	0.5	
		12 C4-PSC40-PCLNL-27080-12	40	50	40	27	80	60	-6°	-10°	0.5	
		12 C4-PSC40-PCLNR-27120-12	40	50	40	27	120	100	-6°	-11°	0.5	
		12 C4-PSC40-PCLNL-27120-12	40	50	40	27	120	100	-6°	-11°	0.5	

Insert

External Toolholder

Internal Toolholder

PSC Toolholder


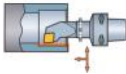
Threading

Parting, Grooving


Miniature Tool

PCLNR/L-Kr 95°

Specification

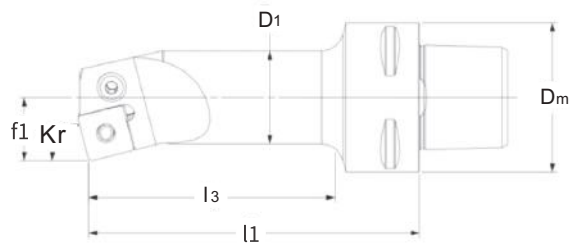
(Kr)-Application		Ordering code	Dm	Dmin	D1	f1	l1	l3	γ	λ	m (kg)	ISO insert
	95°	12 C5-PSC50-PCLNR-17090-12	50	32	25	17	90	67	-6°	-11°	0.65	CN..1204..
		12 C5-PSC50-PCLNL-17090-12	50	32	25	17	90	67	-6°	-11°	0.65	
		12 C5-PSC50-PCLNR-22110-12	50	40	32	22	110	88	-6°	-11°	0.66	
		12 C5-PSC50-PCLNL-22110-12	50	40	32	22	110	88	-6°	-11°	0.66	
		12 C5-PSC50-PCLNR-27140-12	50	50	40	27	140	119	-6°	-10°	0.67	
		12 C5-PSC50-PCLNL-27140-12	50	50	40	27	140	119	-6°	-10°	0.67	
		12 C5-PSC50-PCLNR-35100-12	50	63	50	35	100	81	-6°	-7°	0.68	
		12 C5-PSC50-PCLNL-35100-12	50	63	50	35	100	81	-6°	-7°	0.68	
		12 C6-PSC63-PCLNR-17100-12	63	32	25	17	100	74	-6°	-11°	1	
		12 C6-PSC63-PCLNL-17100-12	63	32	25	17	100	74	-6°	-11°	1	
		12 C6-PSC63-PCLNR-22110-12	63	40	32	22	110	84	-6°	-11°	1.2	
		12 C6-PSC63-PCLNL-22110-12	63	40	32	22	110	84	-6°	-11°	1.2	

Main spare parts

PSC size	Insert	Screw	Shim	Key	Lever
					
PSC32-PSC63(D25)	12	414.838.32	-	241.025.56	413.838.41-1
PSC32-PSC63(D32-D50)	12	414.438.21	322.318.50	241.030.63	413.438.41

The insert need to be ordered seperately.
Other accessories are included in the order.

PSKNR/L-Kr 75°



- SNMM SNMG SNMA SNGA
- The insert is for illustration only

Specification

(Kr)-Application		Ordering code	Dm	Dmin	D1	f1	l1	l3	γ	λ	m (kg)	ISO insert
75° 	12	C4-PSC40-PSKNR-17090-12	40	32	25	17	90	69	-6°	-11°	0.45	SN..1204..
	12	C5-PSC50-PSKNR-17090-12	50	32	25	17	90	67	-6°	-11°	0.51	
	12	C5-PSC50-PSKNR-22110-12	50	40	32	22	110	88	-6°	-10°	0.7	
	12	C5-PSC50-PSKNR-27140-12	50	50	40	27	140	119	-6°	-10°	1.4	
	12	C6-PSC63-PSKNR-22110-12	63	40	32	22	110	84	-6°	-10°	1.3	

Main spare parts

PSC size	Insert	Screw	Shim	Key	Lever
PSC40-PSC50(D25)					
PSC50-PSC63(D32-D40)	12	414.838.32	-	241.025.56	413.838.41-1
	12	414.438.21	322.438.51	241.030.63	413.438.41

The insert need to be ordered separately.
Other accessories are included in the order.

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

SCLCR/L-Kr 95°

Insert

External Toolholder

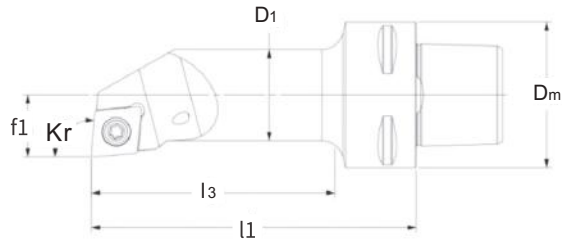
Internal Toolholder

PSC Toolholder

Threading


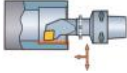
Parting , Grooving

Miniature Tool




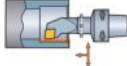
- CCMT CCGT CCGX CCET CCMW
- The insert is for illustration only

Specification



(Kr)-Application		Ordering code	Dm	Dmin	D1	f1	l1	l3	γ	λ	m (kg)	ISO insert
95° 	12	C3-PSC32-SCLCR-17090-12	32	32	25	17	90	75	0°	-6°	0.32	CC..1204..
	12	C3-PSC32-SCLCL-17090-12	32	32	25	17	90	75	0°	-6°	0.32	
	12	C3-PSC32-SCLCR-22064-12	32	40	31.7	22	64	50	0°	-10°	0.31	
	12	C3-PSC32-SCLCL-22064-12	32	40	31.7	22	64	50	0°	-10°	0.31	
	12	C3-PSC32-SCLCR-22090-12	32	40	31.7	22	90	82	0°	-10°	0.5	
	12	C3-PSC32-SCLCL-22090-12	32	40	31.7	22	90	82	0°	-10°	0.5	
	12	C4-PSC40-SCLCR-17090-12	40	32	25	17	90	69	0°	-6°	0.45	
	12	C4-PSC40-SCLCL-17090-12	40	32	25	17	90	69	0°	-6°	0.45	
	12	C4-PSC40-SCLCR-22110-12	40	40	32	22	110	89	0°	-10°	0.68	
	12	C4-PSC40-SCLCL-22110-12	40	40	32	22	110	89	0°	-10°	0.68	
	12	C4-PSC40-SCLCR-27080-12	40	50	39.7	27	80	60	0°	-8°	0.63	
	12	C4-PSC40-SCLCL-27080-12	40	50	39.7	27	80	60	0°	-8°	0.63	

SCLCR/L-Kr 95°

Specification

(Kr)-Application		Ordering code	Dm	Dmin	D1	f1	l1	l3	γ	λ	m (kg)	ISO insert
95° 	12	C5-PSC50-SCLCR-17090-12	50	32	25	17	90	67	0°	-6°	0.63	CC..1204..
	12	C5-PSC50-SCLCL-17090-12	50	32	25	17	90	67	0°	-6°	0.63	
	12	C5-PSC50-SCLCR-22110-12	50	40	32	22	110	88	0°	-10°	0.87	
	12	C5-PSC50-SCLCL-22110-12	50	40	32	22	110	88	0°	-10°	0.87	
	12	C5-PSC50-SCLCR-27140-12	50	50	40	27	140	119	0°	-8°	1.35	
	12	C5-PSC50-SCLCL-27140-12	50	50	40	27	140	119	0°	-8°	1.35	
	12	C5-PSC50-SCLCR-35100-12	50	63	49.7	35	100	80	0°	-5°	1.27	
	12	C5-PSC50-SCLCL-35100-12	50	63	49.7	35	100	80	0°	-5°	1.27	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Insert screw
					
PSC32-PSC50(D25)	12	-	-	248.150.10	ILD4011-A
PSC32-PSC50(D32-D40)	12	512.090.03	322.232.02	248.150.10&241.040.70	ILD4014

The insert need to be ordered seperately.
Other accessories are included in the order.

- Insert
- External Toolholder
- Internal Toolholder
- PSC Toolholder
- Threading
- Parting, Grooving
- Miniature Tool

SDUCR/L-Kr 93°

Insert

External Toolholder

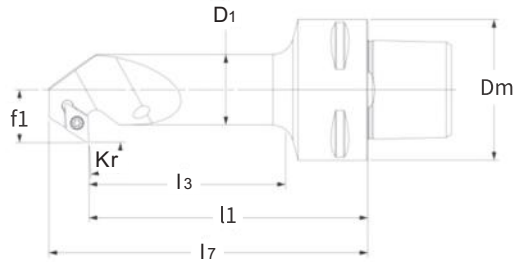
Internal Toolholder

PSC Toolholder

Threading


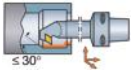
Parting , Grooving

Miniature Tool




- DCMT DCMX DCGT DCGX DCET DCMW
- The insert is for illustration only

Specification

(Kr)-Application		Ordering code	Dm	Dmin	D1	f1	l1	l3	l7	γ	λ	m (kg)	ISO insert
93°		07 C3-PSC32-SDUCR-13070-07X	32	22	16	13	70	54	54	0°	-6°	0.19	DC..0702..
		07 C3-PSC32-SDUCL-13070-07X	32	22	16	13	70	54	54	0°	-6°	0.19	
		07 C3-PSC32-SDUCR-15080-07X	32	27	20	15	80	64	64	0°	-3°	0.26	
		07 C3-PSC32-SDUCL-15080-07X	32	27	20	15	80	64	64	0°	-3°	0.26	
		07 C4-PSC40-SDUCR-13070-07X	40	22	16	13	70	48	48	0°	-6°	0.32	
		07 C4-PSC40-SDUCL-13070-07X	40	22	16	13	70	48	48	0°	-6°	0.32	
		07 C4-PSC40-SDUCR-15080-07X	40	27	20	15	80	58	58	0°	-3°	0.39	
		07 C4-PSC40-SDUCL-15080-07X	40	27	20	15	80	58	58	0°	-3°	0.39	
		07 C4-PSC40-SDUCR-18090-07X	40	32	25	18	90	69	69	0°	-3°	0.49	
		07 C4-PSC40-SDUCL-18090-07X	40	32	25	18	90	69	69	0°	-3°	0.49	
		07 C5-PSC50-SDUCR-15080-07X	50	27	20	15	80	58	58	0°	-3°	0.58	
		07 C5-PSC50-SDUCL-15080-07X	50	27	20	15	80	58	58	0°	-3°	0.58	
		07 C5-PSC50-SDUCR-18090-07X	50	32	25	18	90	68	68	0°	-3°	0.67	
		07 C5-PSC50-SDUCL-18090-07X	50	32	25	18	90	68	68	0°	-3°	0.67	

Main spare parts

PSC size	Insert	Shim screw	Shim	Key	Insert screw
 PSC32-PSC50	 7	 -	 -	 242.070.35	 ILD2565

The insert need to be ordered separately.
Other accessories are included in the order.

PSC CLAMPING UNIT



- Used with the turning tools with PSC interface;
- Realize the exchange of left and right hand tools;
- Cam locking device, change the tool swiftly.

Insert

External Toolholder

Internal Toolholder

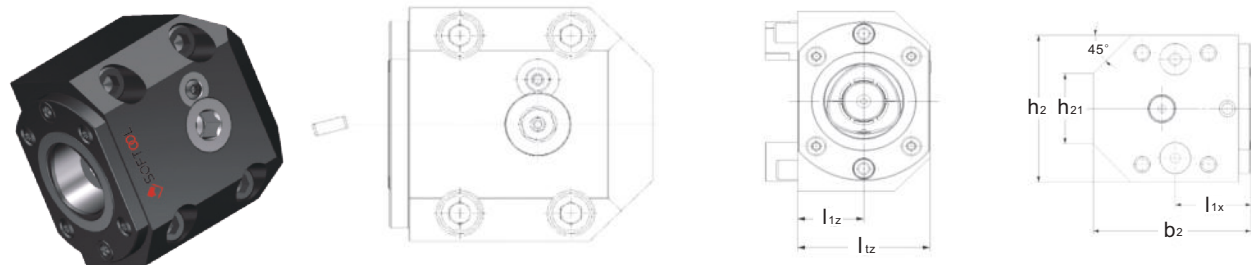
PSC Toolholder

Threading

Parting, Grooving

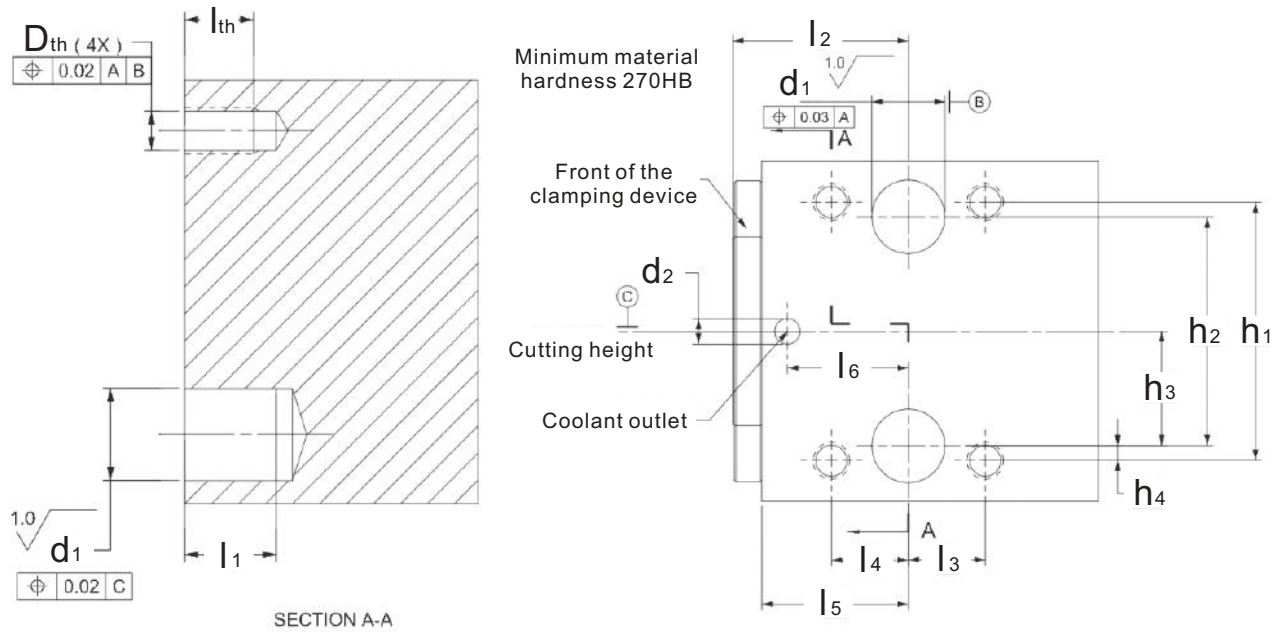
Miniature Tool

CUSA



PSC size	Ordering code	b2	h2	h21	l1x	l1z	ltz
PSC32	PSC32RCUSA19039	73	54	30	39	19	38
PSC32	PSC32LCUSA19039	73	54	30	39	19	38
PSC40	PSC40RCUSA24043	86	77	38	43	24	48
PSC40	PSC40LCUSA24043	86	77	38	43	24	48
PSC50	PSC50RCUSA32048	100	92	44	48	32	64
PSC50	PSC50LCUSA32048	100	92	44	48	32	64
PSC63	PSC63RCUSA42060	122	105	37	60	42	84
PSC63	PSC63LCUSA42060	122	105	37	60	42	84
PSC80	PSC80RCUSA50088	146	133	133	88	50	100
PSC80	PSC80LCUSA50088	146	133	133	88	50	100

Clamping device R \ L Rusa application design description



Clamping Device	d1(H7)	d2	h1	h2	h3	h4	l1(min)	l2	l3	l4	l5	l6	lth(min)	Dth
PSC32R\LCUSA19039	12	5	42	39	19.5	1.5	8.5	39	19	19	33.5	28	7.5	M6
PSC40R\LCUSA24043	16	7	60	55	27.5	2.5	11	43	19	19	36.5	30	11	M8
PSC50R\LCUSA32048	20	7	70	62	31	4	12	48	21	21	39.5	33	13	M10
PSC63R\LCUSA42060	25	10	82	71	35.5	5.5	20	60	24.5	24.5	50.5	41	12	M10
PSC80R\LCUSA50088	32	11	110	110	46	9	20	88	43	43	76	63	14.5	M12

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

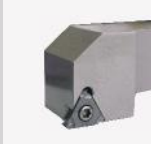
Parting, Grooving

Miniature Tool

THREADING



Thread Inserts (ISO/UN/W/BSPT/NPT) ----- A209 - A213



Thread Toolholder ----- A214


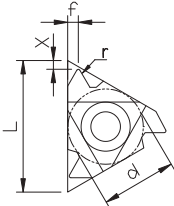
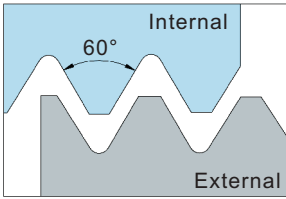


Thread Inserts for Oil Pipe ----- A215 - A217


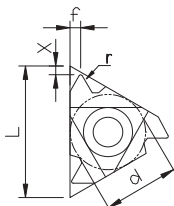
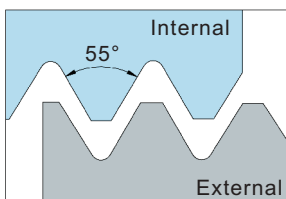


Thread Toolholder for Oil Pipe ----- A218 - A223

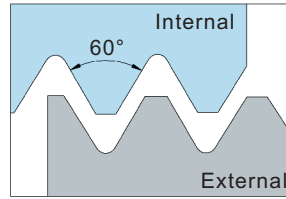
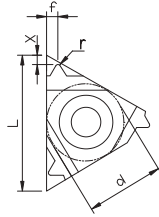
Partial profile
60° thread angle

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					Material	TG3225													
Steel	P	●																	
Stainless	M	●																	
Cast Iron	K	●																	
Type	Order No.	Pitch	Dimension (mm)																
			L	X	f	r	d												
External	16ERA60-TC	0.5-1.5	16	0.8	0.9	0.08	9.525												
	16ERAG60-TC	0.5-3.0	16	1.1	1.5	0.08	9.525												
	16ERG60-TC	1.75-3.0	16	1.2	1.7	0.25	9.525												
	22ERN60-TC	3.5-5.0	22	1.7	2.5	0.51	12.7												
Internal	11IRA60-TC	0.5-1.5	11	0.8	0.9	0.08	6.35												
	16IRA60-TC	0.5-1.5	16	0.8	0.9	0.08	9.525												
	16IRAG60-TC	0.5-3.0	16	1.1	1.5	0.08	9.525												
	16IRG60-TC	1.75-3.0	16	1.2	1.7	0.13	9.525												
	22IRN60-TC	3.5-5.0	22	1.7	2.5	0.25	12.7												

Partial profile
55° thread angle

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					Material	TG3225													
Steel	P	●																	
Stainless	M	●																	
Cast Iron	K	●																	
Type	Order No.	Pitch	Dimension (mm)																
			L	X	f	r	d												
External	16ERA55-TC	48-16	16	0.8	0.9	0.08	9.525												
	16ERAG55-TC	48-8	16	1.1	1.5	0.08	9.525												
	16ERG55-TC	14-8	16	1.2	1.7	0.21	9.525												
	22ERN55-TC	7-5	22	1.7	2.5	0.44	12.7												
Internal	11IRA55-TC	48-16	11	0.8	0.9	0.08	6.35												
	16IRA55-TC	48-16	16	0.8	0.9	0.08	9.525												
	16IRAG55-TC	48-8	16	1.1	1.5	0.08	9.525												
	16IRG55-TC	14-8	16	1.2	1.7	0.21	9.525												
	22IRN55-TC	7-5	22	1.7	2.5	0.44	12.7												

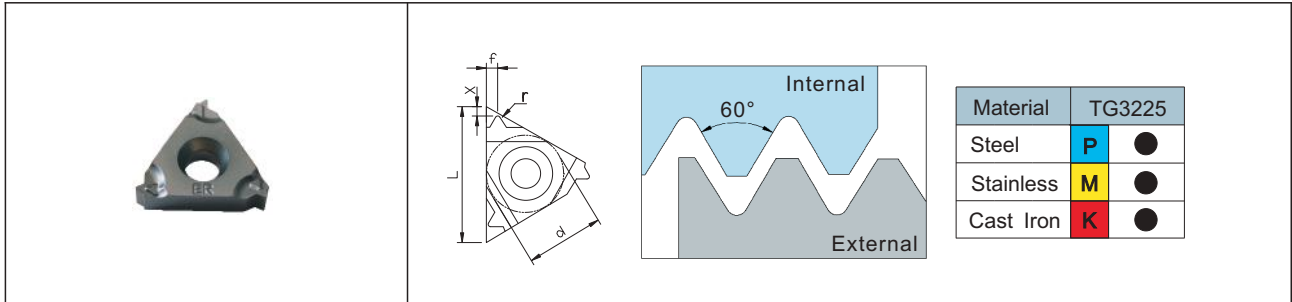
Full profile
ISO Metric



Material	TG3225	
Steel	P	●
Stainless	M	●
Cast Iron	K	●

Type	Order No.	Pitch	Dimension (mm)				
			L	X	f	r	d
External	16ER1.00ISO-TC	1	16	0.8	0.7	0.14	9.525
	16ER1.25ISO-TC	1.25	16	0.8	0.9	0.18	9.525
	16ER1.50ISO-TC	1.5	16	0.8	1.0	0.22	9.525
	16ER1.75ISO-TC	1.75	16	1.2	1.2	0.25	9.525
	16ER2.00ISO-TC	2	16	1.2	1.3	0.29	9.525
	16ER2.50ISO-TC	2.5	16	1.2	1.5	0.36	9.525
	16ER3.00ISO-TC	3	16	1.2	1.5	0.43	9.525
	22ER3.50ISO-TC	3.5	22	1.6	2.3	0.45	12.7
	22ER4.00ISO-TC	4	22	1.6	2.3	0.52	12.7
	22ER4.50ISO-TC	4.5	22	1.7	2.4	0.58	12.7
Internal	11IR1.00ISO-TC	1	11	0.8	0.7	0.07	6.35
	11IR1.25ISO-TC	1.25	11	0.8	0.9	0.09	6.35
	11IR1.50ISO-TC	1.5	11	0.8	1.0	0.11	6.35
	11IR1.75ISO-TC	1.75	11	0.9	1.1	0.13	6.35
	11IR2.00ISO-TC	2	11	0.9	1.1	0.15	6.35
	16IR1.00ISO-TC	1	16	0.8	0.7	0.07	9.525
	16IR1.25ISO-TC	1.25	16	0.8	0.9	0.09	9.525
	16IR1.50ISO-TC	1.5	16	0.8	1.0	0.11	9.525
	16IR1.75ISO-TC	1.75	16	1.2	1.2	0.13	9.525
	16IR2.00ISO-TC	2	16	1.2	1.3	0.15	9.525
	16IR2.50ISO-TC	2.5	16	1.2	1.5	0.18	9.525
	16IR3.00ISO-TC	3	16	1.2	1.5	0.22	9.525
	22IR3.50ISO-TC	3.5	22	1.6	2.3	0.22	12.7
	22IR4.00ISO-TC	4	22	1.6	2.3	0.25	12.7
	22IR4.50ISO-TC	4.5	22	1.6	2.4	0.28	12.7
	22IR5.00ISO-TC	5	22	1.6	2.3	0.32	12.7

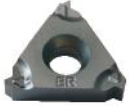
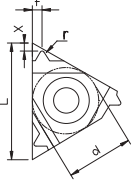
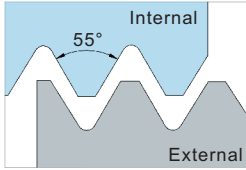
Full profile
Unified




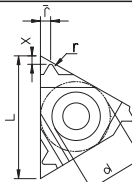
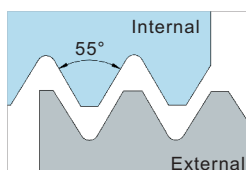
Type	Order No.	Pitch	Dimension (mm)				
			L	X	f	r	d
External	16ER24UN-TC	24	16	0.8	0.8	0.15	9.525
	16ER20UN-TC	20	16	0.8	0.9	0.18	9.525
	16ER18UN-TC	18	16	0.8	1.0	0.2	9.525
	16ER16UN-TC	16	16	0.9	1.1	0.23	9.525
	16ER14UN-TC	14	16	1.2	1.5	0.26	9.525
	16ER12UN-TC	12	16	1.2	1.5	0.31	9.525
	16ER8UN-TC	8	16	1.3	1.7	0.46	9.525
Internal	11IR20UN-TC	20	11	0.8	0.9	0.09	6.35
	11IR18UN-TC	18	11	0.8	1.0	0.1	6.35
	16IR24UN-TC	24	16	0.8	0.8	0.08	9.525
	16IR20UN-TC	20	16	0.8	0.9	0.09	9.525
	16IR18UN-TC	18	16	0.8	1.0	0.1	9.525
	16IR16UN-TC	16	16	0.9	1.1	0.12	9.525
	16IR14UN-TC	14	16	1.2	1.5	0.13	9.525
	16IR12UN-TC	12	16	1.2	1.5	0.16	9.525
	16IR8UN-TC	8	16	1.3	1.7	0.23	9.525

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool


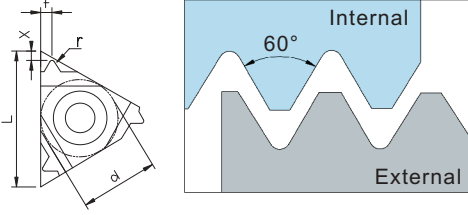
Full profile
Whitworth

Insert							<table border="1"> <tr> <td>Material</td> <td colspan="2">TG3225</td> </tr> <tr> <td>Steel</td> <td>P</td> <td>●</td> </tr> <tr> <td>Stainless</td> <td>M</td> <td>●</td> </tr> <tr> <td>Cast Iron</td> <td>K</td> <td>●</td> </tr> </table>		Material	TG3225		Steel	P	●	Stainless	M	●	Cast Iron	K	●
	Material	TG3225																		
Steel	P	●																		
Stainless	M	●																		
Cast Iron	K	●																		
External Toolholder	Type	Order No.	Pitch	Dimension (mm)																
Internal Toolholder				L	X	f	r	d												
PSC Toolholder	External	16ER19W-TC	19	16	0.8	1.0	0.17	9.525												
		16ER18W-TC	18	16	0.8	1.0	0.18	9.525												
		16ER16W-TC	16	16	0.9	1.1	0.20	9.525												
		16ER14W-TC	14	16	1.2	1.5	0.24	9.525												
		16ER12W-TC	12	16	1.2	1.5	0.28	9.525												
		16ER11W-TC	11	16	1.2	1.5	0.30	9.525												
		16ER10W-TC	10	16	1.1	1.5	0.34	9.525												
Threading	Internal	16IR19W-TC	19	16	0.8	1.0	0.17	9.525												
		16IR18W-TC	18	16	0.8	1.0	0.18	9.525												
		16IR16W-TC	16	16	0.9	1.1	0.20	9.525												
		16IR14W-TC	14	16	1.2	1.5	0.24	9.525												
		16IR12W-TC	12	16	1.2	1.5	0.28	9.525												
		16IR11W-TC	11	16	1.2	1.5	0.30	9.525												
		16IR8W-TC	8	16	1.2	1.5	0.41	9.525												

Full profile
BSPT 55°

Parting, Grooving							<table border="1"> <tr> <td>Material</td> <td colspan="2">TG3225</td> </tr> <tr> <td>Steel</td> <td>P</td> <td>●</td> </tr> <tr> <td>Stainless</td> <td>M</td> <td>●</td> </tr> <tr> <td>Cast Iron</td> <td>K</td> <td>●</td> </tr> </table>		Material	TG3225		Steel	P	●	Stainless	M	●	Cast Iron	K	●
	Material	TG3225																		
Steel	P	●																		
Stainless	M	●																		
Cast Iron	K	●																		
Miniature Tool	Type	Order No.	Pitch	Dimension (mm)																
				L	X	f	r	d												
Miniature Tool	External	16ER28BSPT-TC	28	16	0.7	0.8	0.11	9.525												
		16ER19BSPT-TC	19	16	0.8	1.0	0.17	9.525												
		16ER14BSPT-TC	14	16	1.2	1.5	0.24	9.525												
		16ER11BSPT-TC	11	16	1.2	1.5	0.30	9.525												
Miniature Tool	Internal	11IR19BSPT-TC	19	11	0.8	1.0	0.18	6.35												
		11IR14BSPT-TC	14	11	0.9	1.1	0.24	6.35												
		16IR28BSPT-TC	28	16	0.7	0.8	0.11	9.525												
		16IR19BSPT-TC	19	16	0.8	1.0	0.17	9.525												
		16IR14BSPT-TC	14	16	1.2	1.5	0.24	9.525												
		16IR11BSPT-TC	11	16	1.2	1.5	0.30	9.525												

Full profile
NPT 60°

				<table border="1"> <tr> <td>Material</td> <td colspan="2">TG3225</td> </tr> <tr> <td>Steel</td> <td>P</td> <td>●</td> </tr> <tr> <td>Stainless</td> <td>M</td> <td>●</td> </tr> <tr> <td>Cast Iron</td> <td>K</td> <td>●</td> </tr> </table>		Material	TG3225		Steel	P	●	Stainless	M	●	Cast Iron	K	●
						Material	TG3225										
Steel	P	●															
Stainless	M	●															
Cast Iron	K	●															
Type	Order No.	Pitch	Dimension (mm)														
			L	X	f	r	d										
External	16ER27NPT-TC	27	16	0.7	0.8	0.13	9.525										
	16ER18NPT-TC	18	16	0.8	1.0	0.20	9.525										
	16ER14NPT-TC	14	16	1.2	1.5	0.22	9.525										
	16ER11.5NPT-TC	11.5	16	1.2	1.5	0.25	9.525										
	16ER8NPT-TC	8	16	1.3	1.8	0.30	9.525										
Internal	11IR18NPT-TC	18	11	0.8	1.0	0.20	6.35										
	16IR27NPT-TC	27	16	0.7	0.8	0.13	9.525										
	16IR18NPT-TC	18	16	0.8	1.0	0.20	9.525										
	16IR14NPT-TC	14	16	1.2	1.5	0.22	9.525										
	16IR11.5NPT-TC	11.5	16	1.2	1.5	0.25	9.525										
	16IR8NPT-TC	8	16	1.3	1.8	0.30	9.525										

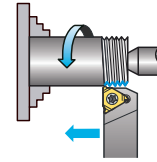
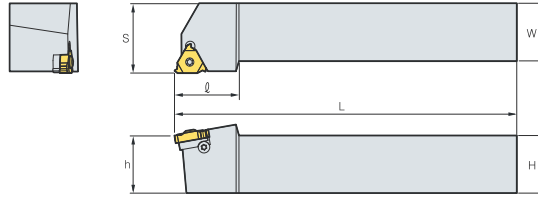
Standard Cutting Conditions

ISO	Workpiece Material		Vc(m/min)
P	Non-Alloy steel	<0.25%C	120-230
		0.25%C- 0.55%C	100-195
		≥0.55%C	90-180
	Low Alloy Steel		60-180
	High Alloy Steel		70-140
M	Martensitic Stainless Steel		70-170
	Austenitic Stainless Steel		90-140
K	Grey Cast Iron		80-160
	Ductile Cast Iron		80-160
N	Cast Aluminum Alloy		100-500
	Aluminum Alloy		300-700
	Copper Alloy		80-300
S	Heat-resistance Alloy		10-50
	Titanium Alloy		50-70
H	Hardened Alloy	45-50 HRC	40-50
		51-55 HRC	30-50



External Threading Toolholders

SER
(Screw on system)

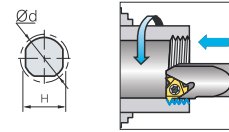
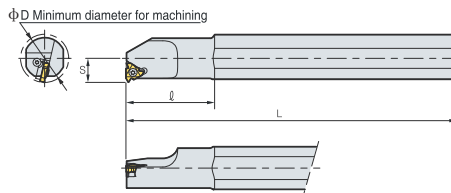


Righthand drawing
(mm)

Order No.	Dimension (mm)					Insert	Pin	Shim	Wrench	Screw
	H	W	S	L	h					
SER-1212H16	12	12	16	100	12	16ER..	ST3509	-	T15	-
SER-1616H16	16	16	20	100	16		ST3512	STM16	T15 L2.5	ST3006N
SER-2020K16	20	20	25	125	20					
SER-2525M16	25	25	32	150	25					
SER-3232P16	32	32	40	170	32					
SER-2525M22	25	25	32	150	25	22ER..	ST4016	STM22	T20 L3	ST4006N
SER-3232P22	32	32	40	170	32					

Internal Threading Bars

SNR
(Screw on system)



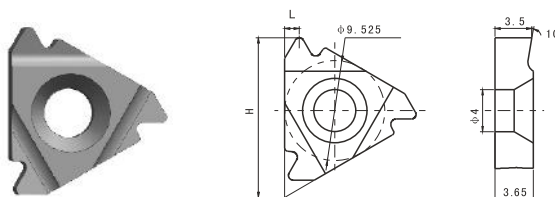
Righthand drawing
(mm)

Order No.	Dimension (mm)						Insert	Pin	Shim	Wrench	Screw
	D	d	L	S	H	I					
SNR-0008K11	11	8	125	5.5	7	20	11IR..	ST2508	-	T8	-
SNR-0010K11	13	10	125	6.5	9	22					
SNR-0012K11	15	12	125	7.5	11	26					
SNR-0016Q16	19	16	180	10	15	36	16IR..	ST3509	-	T15	-
SNR-0020R16	24	20	200	12	18	40					
SNR-0025R16	29	25	200	14.5	23	45					
SNR-0032T16	36	32	300	18.5	30	45					
SNR-0040T16	44	40	300	22	37	60					
SNR-0020R22	23	20	200	11.5	18	40	22IR..	ST4016	STM22	T20 L3	ST4006N
SNR-0025S22	31	25	250	16	23	45					
SNR-0032T22	38	32	300	19.5	30	45					
SNR-0040T22	46	40	300	24	37	60					

API tubing and casing round threading > Standard triangle series round threading inserts

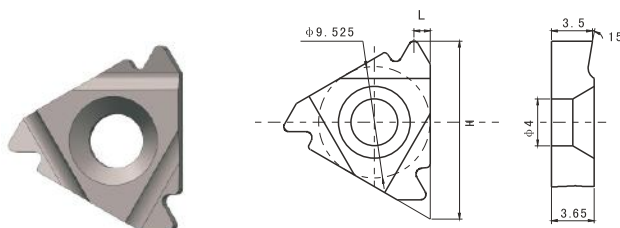
Grade	Introduce of use performance and application
0124	With good red-hardness and toughness, suitable for the high-effective threading machine tooling the dry steel, intermediate grade and high-grade steel (such as J55, K55, N80, L80 etc.) tubing, casing treading and connecting threading.
0326	With good high-intensity and red-hardness, meanwhile own excellent impact resistance. Suitable for the high-effective threading machine tooling the intermediate and high grade steel (such as N80, P110. etc.) tubing, casing and connecting threading.

External threading insert



Order No.	Teeth/inch	Taper	Thread form	H	L	Grade
16ER8API	8	1:16	API round tubing casing thread	15.2	1.4	0124/0326
16ER10API	10	1:16	API round tubing casing thread	15.2	1.2	0124/0326

Internal threading insert



Order No.	Teeth/inch	Taper	Thread form	H	L	Grade
16IR8API	8	1:16	API round tubing casing thread	15.2	1.4	0124/0326
16IR10API	10	1:16	API round tubing casing thread	15.2	1.2	0124/0326

Insert

External Toolholder

Internal Toolholder

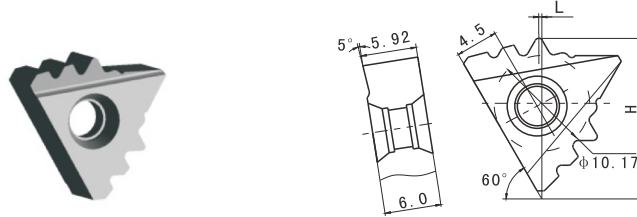
PSC Toolholder

Threading

Parting Grooving

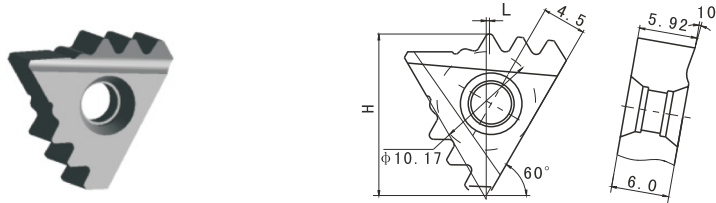
Miniature Tool

API tubing and casing round threading > Papilionaceous series round threading inserts
External threading insert

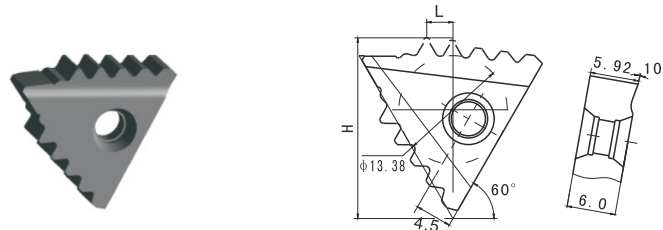


Order No.	Teeth/inch	Taper	Thread form	H	L	Grade
B8W2-3(15°)	8	1:16	API round tubing thread	17.09	0.32	0124/0326
B8W2-3(12°)	8	1:16	API round casing thread	17.09	0.32	0124/0326
B10W2-4	10	1:16	API round tubing thread	17.09	0.32	0124/0326

Internal threading insert

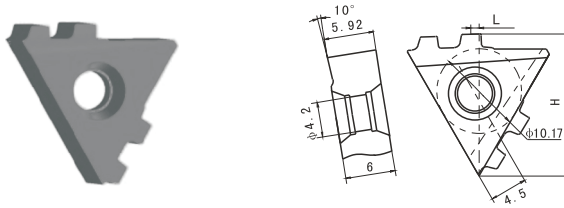


Order No.	Teeth/inch	Taper	Thread form	H	L	Grade
B8N2-3	8	1:16	API round tubing casing thread	17.09	0.32	0124/0326
B10N2-4	10	1:16	API round tubing thread	17.09	0.01	0124/0326



Order No.	Teeth/inch	Taper	Thread form	H	L	Grade
B8N2-5	8	1:16	API round tubing casing thread	21.84	3.24	0124/0326

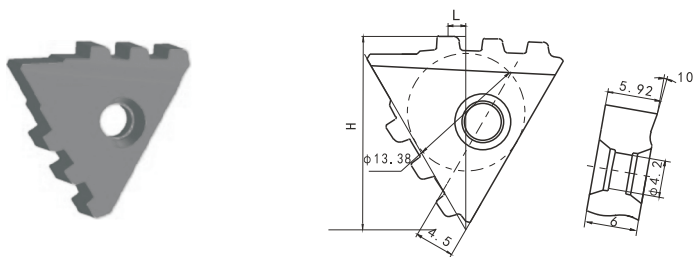
GOST buttress threading inserts for oil pipe
External threading insert



Order No.	Teeth/inch	Taper	Thread form	H	L	Grade
E5BW2-2	5	1:16	OTTM \ OTTG	17.03	0.83	0124/0326

GOST buttress threading inserts for oil pipe

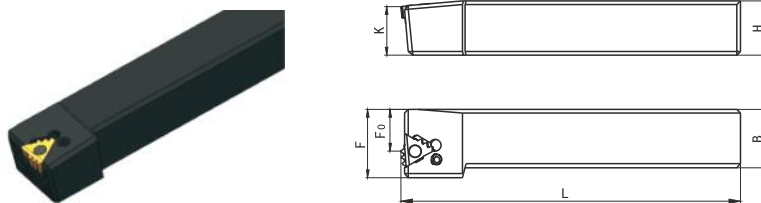
Internal threading insert



Order No.	Teeth/inch	Taper	Thread form	H	L	Grade
E5BN2-3	5	1:16	OTTM \ OTTG	22.075	2.0	0124/0326

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting + Grooving
Miniature Tool

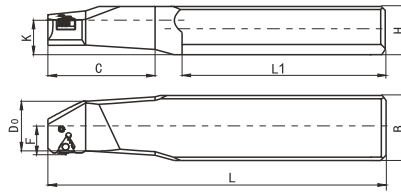
Tool shank for papilionaceous round external threading inserts



Type	Order No.	Working range	Dimension							Machine tool
			L	H	K	B	F	F ₀	λ	
A	P10 (8) W2-A28×25	2 $\frac{3}{8}$ "~3 $\frac{1}{2}$ "	175	28	25	30	35	22	70'	G620
	P10 (8) W2-A35×32		175	35	32	35	40	27	70'	
	P10 (8) W2-A40×40		175	40	40	40	45	30	70'	
B	P10 (8) W2-B35×32	4"~5 $\frac{1}{2}$ "	175	35	32	35	40	27	50'	QK1312 Q1319
	P10 (8) W2-B40×40		175	40	40	40	45	30	50'	
C	P10 (8) W2-C35×32	6 $\frac{5}{8}$ "~8 $\frac{5}{8}$ "	175	35	32	35	40	27	30'	S1-344 S1-189
	P10 (8) W2-C40×40		175	40	40	40	45	30	30'	
D	P10 (8) W2-D35×32	9 $\frac{5}{8}$ "~13 $\frac{3}{8}$ "	175	35	32	35	40	27	15'	
	P10 (8) W2-D40×40		175	40	40	40	45	30	15'	

Accessory	Insert	Shim	Oblique rod	Lock screw	Wrench
Image					
Order No.	B8W2-3H B10W2-4H	169. 798	φ4 Oblique rod	M6	S3

Square tool shank for papilionaceous round internal threading inserts

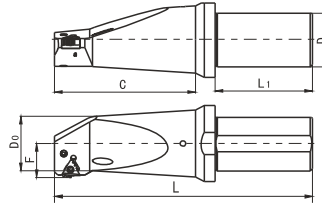


Type	Order No.	Working range	Dimension									Machine tool
			L	L ₁	H	C	K	F	D ₀	B	λ	
A	P10 (8) N2-AS40×25	2 $\frac{3}{8}$ "~3 $\frac{1}{2}$ "	275	150	40	100	25	26	42	65	70'	C620
	P10 (8) N2-AS48×32		305	180	48	100	32	26	42	74	70'	QK1312 Q1319
	P10 (8) N2-AS48×32(A1)	2 $\frac{3}{8}$ "	265	140	48	85	32	26.5	45	74	70'	-
	P10 (8) N2-AS48×32(A2)	2 $\frac{7}{8}$ "~3 $\frac{1}{2}$ "	275	140	48	95	32	30.5	50	74	70'	-
B	P10 (8) N2-BS48×32	4"~5 $\frac{1}{2}$ "	335	180	48	130	32	31	50	74	50'	QK1312 Q1319
	P10 (8) N2-BS55×36		335	200	55	130	36	31	50	77	50'	S1-262 S1-245 QK1312 Q1319
C	P10 (8) N2-CS48×32	6 $\frac{5}{8}$ "~8 $\frac{5}{8}$ "	358	180	48	158	32	36	56	74	30'	S1-262 S1-245 QK1312 Q1319
	P10 (8) N2-CS55×36		378	200	55	158	36	36	56	77	30'	S1-262 S1-245
D	P10 (8) N2-DS55×36	9 $\frac{5}{8}$ "~13 $\frac{3}{8}$ "	395	200	55	175	36	43	60	81	15'	S1-262 S1-245

Accessory	Insert	Shim	Oblique rod	Lock screw	Wrench
Image					
Order No.	B8N2-3H B10N2-4H	169. 523	Φ4 Oblique rod	M6	S3



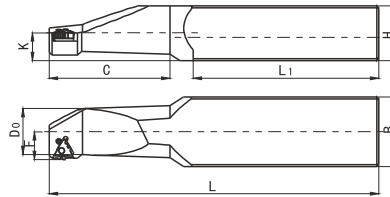
Round tool shank for papilionaceous round internal threading inserts



Type	Order No.	Working range	Dimension							Machine tool
			L	L ₁	D	C	D ₀	F	λ	
A	P10 (8) N2-AR40×80	2 $\frac{3}{8}$ "~3 $\frac{1}{2}$ "	205	80	40	100	42	26	70'	CK7815 CK7620
	P10 (8) N2-AR50×90		215	90	50	100	42	26	70'	CK7832 CK3263A
	P10 (8) N2-AR60×100		225	100	60	100	42	26	70'	CK7840
	P10 (8) N2-AR80×140		265	140	80	100	42	26	70'	CK3263B
	P10 (8) N2-AR60×140 (A1)	2 $\frac{3}{8}$ "	265	140	60	85	45	26.5	70'	-
	P10 (8) N2-AR60×140 (A2)	2 $\frac{7}{8}$ "~3 $\frac{1}{2}$ "	275	140	60	95	50	30.5	70'	-
B	P10 (8) N2-BR40×80	4"~5 $\frac{1}{2}$ "	235	80	40	130	50	31	50'	CK7815 CK7620
	P10 (8) N2-BR50×90		245	90	50	130	50	31	50'	CK7832 CK3263A
	P10 (8) N2-BR60×100		255	100	60	130	50	31	50'	CK7840
	P10 (8) N2-BR80×140		295	140	80	130	50	31	50'	CK3263B
C	P10 (8) N2-CR50×90	6 $\frac{5}{8}$ "~8 $\frac{5}{8}$ "	268	90	50	158	56	36	30'	CK7840
	P10 (8) N2-CR60×100		278	100	60	158	56	36	30'	CK3263B
	P10 (8) N2-CR80×140		318	140	80	158	56	36	30'	CK7832 CK3263A
D	P10 (8) N2-DR60×100	9 $\frac{5}{8}$ "~13 $\frac{3}{8}$ "	295	100	60	175	60	43	15'	CK7840
	P10 (8) N2-DR80×140		335	140	80	175	60	43	15'	CK3263B

Accessory	Insert	Shim	Oblique rod	Lock screw	Wrench
Image					
Order No.	B8N2-3H B10N2-4H	169. 523	Φ4 Oblique rod	M6	S3

Square tool shank for papilionaceous buttress internal threading inserts



Type	Order No.	Working range	Dimension									Machine tool
			L	L ₁	H	C	K	F	D ₀	B	λ	
B	P5BN2-BS48×32	4"~5 $\frac{1}{2}$ "	335	180	48	130	32	31	50	74	60'	S1-127 S1-344
	P5BN2-BS55×36		355	200	55	130	36	31	50	77	60'	
C	P5BN2-CS48×32	6 $\frac{5}{8}$ "~8 $\frac{5}{8}$ "	358	180	48	158	32	36	56	74	40'	S1-127 S1-344
	P5BN2-CS55×36		378	200	55	158	36	36	56	77	40'	
D	P5BN2-DS55×36	9 $\frac{5}{8}$ "~13 $\frac{3}{8}$ "	395	200	55	175	36	43	60	81	20'	S1-245 S1-262

Accessory	Insert	Shim	Oblique rod	Lock screw	Wrench
Image					
Order No.	B5BN2-3	169.973	Φ4 Oblique rod	M6	S3

Insert

External Toolholder

Internal Toolholder

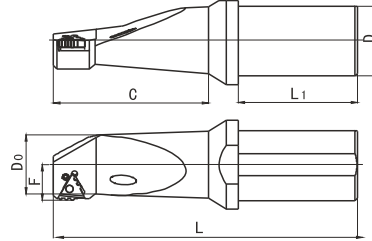
PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

Round tool shank for papilionaceous buttress internal threading inserts

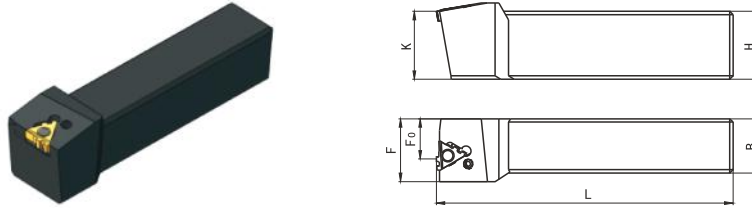


(mm)

Type	Order No.	Working range	Dimension							Machine tool
			L	L ₁	D	C	D ₀	F	λ	
B	P5BN2-BR50×90	4 $\frac{1}{2}$ "~6 $\frac{5}{8}$ "	245	90	50	130	50	31	60'	CK7820 CK7832
	P5BN2-BR60×100		255	100	60	130	50	31	60'	CK7840 S1-181
	P5BN2-BR80×140		295	140	80	130	50	31	60'	CK3263
C	P5BN2-CR60×100	7"~11 $\frac{3}{4}$ "	283	100	60	158	56	36	40'	CK7820 CK7832
	P5BN2-CR80×140		323	140	80	158	56	36	40'	CK3263
D	P5BN2-DR60×100	13 $\frac{3}{8}$ "~20"	300	100	60	175	60	43	20'	CK7840 S1-181
	P5BN2-DR80×140		340	140	80	175	60	43	20'	CK3263

Accessory	Insert	Shim	Oblique rod	Lock screw	Wrench
Image					
Order No.	B5BN2-3	169.973	φ4 Oblique rod	M6	S3

Tool shank for papilionaceous buttress external threading inserts



Type	Order No.	Working range	Dimension							Machine tool
			L	H	K	B	F	F ₀	λ	
B	P5BW2-B35×32	4"~5 $\frac{1}{2}$ "	175	35	32	35	40	25	60'	QK1312 S1-245 S1-127
C	P5BW2-C35×32	6 $\frac{5}{8}$ "~8 $\frac{5}{8}$ "	175	35	32	35	40	25	40'	
D	P5BW2-D35×32	9 $\frac{5}{8}$ "~13 $\frac{3}{8}$ "	175	35	32	35	40	25	20'	

Accessory	Insert	Shim	Oblique rod	Lock screw	Wrench
Image					
Order No.	B5BW2-2	169.798	φ4 Oblique rod	M6	S3

PARTING, GROOVING

Turnline TKD Series ----- A224-A226



Turnline TNG Series ----- A227-A235



Turnline GB Series ----- A236-A238



Turnline TGE Series ----- A239-A244



Turnline TTF Series ----- A245-A247




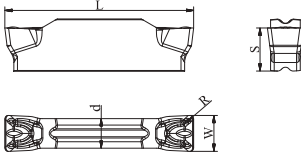
Turnline TTS Series ----- A248

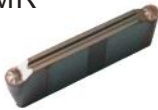
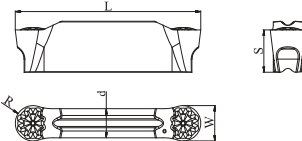
MINIATURE TOOL


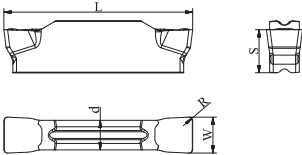
Solid Boring Bar ----- A249-A260



Modular Small Hole Cutter ----- A261-A262

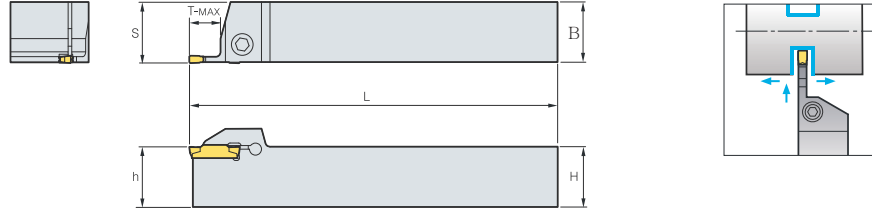
<p>TKD-MT</p> 			<table border="1"> <tr> <td>Material</td> <td colspan="2">TG4230</td> </tr> <tr> <td>Steel</td> <td>P</td> <td>●</td> </tr> <tr> <td>Stainless</td> <td>M</td> <td>●</td> </tr> <tr> <td>Cast Iron</td> <td>K</td> <td>●</td> </tr> </table>			Material	TG4230		Steel	P	●	Stainless	M	●	Cast Iron	K	●
	Material	TG4230															
Steel	P	●															
Stainless	M	●															
Cast Iron	K	●															
Order No .	Dimension (mm)																
	W	R	L	d	S												
TKD 2002 - MT	2	0.2	16	1.2	3.5												
TKD 2502 - MT	2.5	0.2	18.5	2	3.85												
TKD 3004 - MT	3	0.4	21.2	2.35	4.8												
TKD 4004 - MT	4	0.4	21	3.3	4.8												
TKD 5004 - MT	5	0.4	26	4.1	5.8												
TKD 5008 - MT	5	0.8	26	4.1	5.8												
TKD 6004 - MT	6	0.4	26	5	5.8												
TKD 6008 - MT	6	0.8	26	5	5.8												

<p>TKD-MR</p> 			<table border="1"> <tr> <td>Material</td> <td colspan="2">TG4230</td> </tr> <tr> <td>Steel</td> <td>P</td> <td>●</td> </tr> <tr> <td>Stainless</td> <td>M</td> <td>●</td> </tr> <tr> <td>Cast Iron</td> <td>K</td> <td>●</td> </tr> </table>			Material	TG4230		Steel	P	●	Stainless	M	●	Cast Iron	K	●
	Material	TG4230															
Steel	P	●															
Stainless	M	●															
Cast Iron	K	●															
Order No .	Dimension (mm)																
	W	R	L	d	S												
TKD 2010 - MR	2	1	16	1.5	3.5												
TKD 3015 - MR	3	1.5	21	2.35	4.8												
TKD 4020 - MR	4	2	21	3.3	4.8												
TKD 5025 - MR	5	2.5	26	4.1	5.8												
TKD 6030 - MR	6	3	26	5	5.8												

<p>TKD-AL</p> 			<table border="1"> <tr> <td>Material</td> <td colspan="2">TN410</td> </tr> <tr> <td>Non-ferrous Metal</td> <td>N</td> <td>●</td> </tr> </table>			Material	TN410		Non-ferrous Metal	N	●
	Material	TN410									
Non-ferrous Metal	N	●									
Order No .	Dimension (mm)										
	W	R	L	d	S						
TKD 2002 - AL	2	0.2	16	1.2	3.5						
TKD 2502 - AL	2.5	0.2	18.5	2	3.85						
TKD 3004 - AL	3	0.4	21.2	2.35	4.8						
TKD 4004 - AL	4	0.4	21	3.3	4.8						

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting + Grooving
Miniature Tool

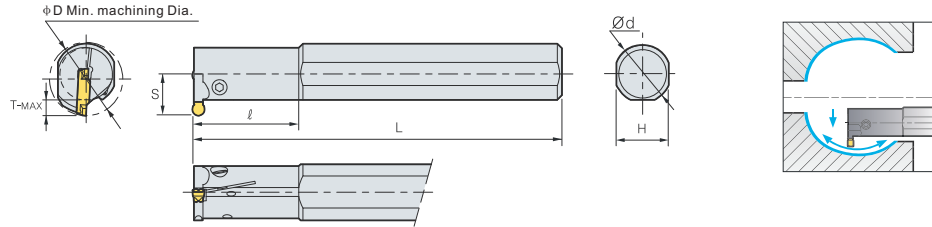
MGEHR/L



(mm)

Order No.	Dimension (mm)							Insert	Wrench	Screw
	W	T-MAX	H	B	L	S	h			
MGEHR/L1212-2.0	2	12	12	12	100	13	12	TKD20 .MT TKD20 .MR	LW20	LHA210
MGEHR/L1616-2.0	2	14	16	16	100	17	16		LW30	LHA310
MGEHR/L2020-2.0	2	14	20	20	125	21	20	TKD25 .MT TKD25 .MR	LW40	LHA410
MGEHR/L2525-2.0	2	14	25	25	150	26	25		LW50	LHA510
MGEHR/L1616-2.5	2.5	16	16	16	100	17	16	TKD30 .MT TKD30 .MR	LW30	LHA310
MGEHR/L2020-2.5	2.5	16	20	20	125	21	20		LW40	LHA410
MGEHR/L2525-2.5	2.5	16	25	25	150	26	25	TKD40 .MT TKD40 .MR	LW50	LHA510
MGEHR/L1212-3.0	3	16	12	12	100	13	12		LW20	LHA210
MGEHR/L1616-3.0	3	18	16	16	100	17	16	TKD50 .MT TKD50 .MR	LW30	LHA310
MGEHR/L2020-3.0	3	18	20	20	125	21	20		LW40	LHA410
MGEHR/L2525-3.0	3	18	25	25	150	26	25	TKD60 .MT TKD60 .MR	LW50	LHA510
MGEHR/L3232-3.0	3	18	32	32	170	33	32		LW60	LHA610
MGEHR/L1616-4.0	4	18	16	16	100	17	16	TKD50 .MT TKD50 .MR	LW30	LHA310
MGEHR/L2020-4.0	4	18	20	20	125	21	20		LW40	LHA410
MGEHR/L2525-4.0	4	18	25	25	150	26	25	TKD60 .MT TKD60 .MR	LW50	LHA510
MGEHR/L3232-4.0	4	18	32	32	170	33	32		LW60	LHA610
MGEHR/L2020-5.0	5	23	20	20	125	21	20	TKD60 .MT TKD60 .MR	LW40	LHA410
MGEHR/L2525-5.0	5	23	25	25	150	26	25		LW50	LHA510
MGEHR/L3232-5.0	5	23	32	32	170	33	32	TKD60 .MT TKD60 .MR	LW60	LHA610
MGEHR/L2525-6.0	6	25	25	25	150	26	25		LW50	LHA510
MGEHR/L3232-6.0	6	25	32	32	170	33	32	LW60	LHA610	

MGIVR/L



Order No.	Dimension (mm)								Insert	Wrench	Screw
	W	T-MAX	D	d	L	S	H	I			
MGIVR/L2016-2.0	2	4.5	20	16	125	12.4	15	35	TKD20 .MT TKD20 .MR	HW20L	MHA0210
MGIVR/L2520-2.0	2	4.5	25	20	150	14	18	45		HW30L	MHA0310
MGIVR/L2925-2.0	2	4.5	29	25	200	17.2	23	45	TKD25 .MT TKD25 .MR	HW40L	MHA0410
MGIVR/L2016-2.5	2.5	4.5	20	16	125	12.5	15	35		HW20L	MHA0210
MGIVR/L2520-2.5	2.5	4.5	25	20	150	15.1	18	45	TKD25 .MR	HW30L	MHA0310
MGIVR/L2925-2.5	2.5	4.5	29	25	200	18.2	23	45		HW40L	MHA0410
MGIVR/L2520-3.0	3	5	25	20	150	15.6	18	45	TKD30 .MT TKD30 .MR	HW30L	MHA0310
MGIVR/L3125-3.0	3	6	31	25	200	18.9	23	45		HW50L	MHA0510
MGIVR/L3732-3.0	3	6	37	32	250	21.5	30	60	TKD30 .MR	HW60L	MHA0610
MGIVR/L2520-4.0	4	6	25	20	150	15.6	18	45		HW30L	MHA0310
MGIVR/L3125-4.0	4	6	31	25	200	18.9	23	45	TKD40 .MT TKD40 .MR	HW50L	MHA0510
MGIVR/L3732-4.0	4	6	37	32	250	21.5	30	60		HW60L	MHA0610
MGIVR/L3125-5.0	5	8	31	25	200	19.4	23	45	TKD50 .MT TKD50 .MR	HW50L	MHA0510
MGIVR/L3732-5.0	5	8	37	32	250	21.4	30	60		HW60L	MHA0610
MGIVR/L3125-6.0	6	8	31	25	200	19.4	23	45	TKD60 .MT TKD60 .MR	HW50L	MHA0510
MGIVR/L3732-6.0	6	8	37	32	250	21.4	30	60		HW60L	MHA0610

TKD Series Standard Cutting Conditions

ISO	Workpiece Material	Vc(m/min)	Grooving				Turning			
			Edge Width (mm)				Edge Width (mm)			
			2-3	4	5	6	2-3	4	5	6
			f(mm/r)				f(mm/r)			
P	Carbon Steel	80-200	0.05-0.15	0.10-0.20	0.15-0.25	0.15-0.30	0.10-0.25	0.10-0.30	0.15-0.30	0.20-0.35
	Alloy Steel	70-180	0.05-0.15	0.10-0.20	0.15-0.25	0.15-0.30	0.10-0.25	0.10-0.30	0.15-0.30	0.20-0.35
M	Stainless Steel	60-150	0.05-0.15	0.10-0.20	0.15-0.25	0.15-0.30	0.10-0.25	0.10-0.30	0.15-0.30	0.20-0.35
K	Cast Iron	100-200	0.05-0.20	0.10-0.25	0.15-0.30	0.15-0.35	0.10-0.30	0.10-0.35	0.15-0.35	0.20-0.40

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

Coated Grade

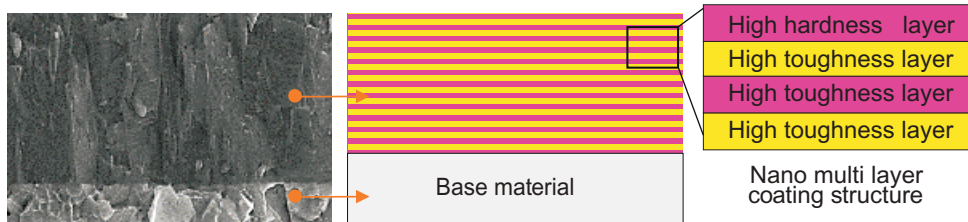
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

TV3025

- Applied to difficult to cut materials high speed,continuous machining like HRSA(Ti alloy,Inconel) Stainless steel Increase tool life and prevent defects with NANO composite powder.

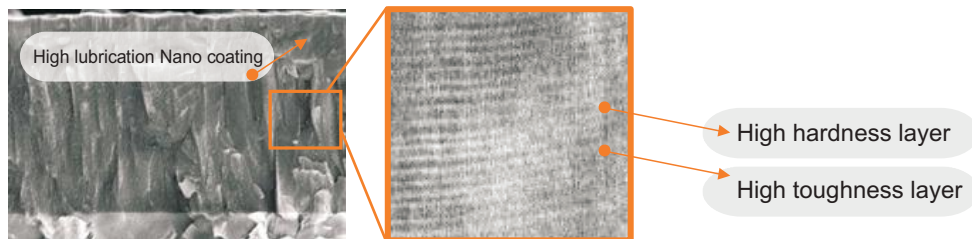
Features

- Excellent wear resistance and toughness in high temperature with NANO composite powder
- High speed continuous machining available ▶ Increase productivity
- Lower coefficient of friction ▶ Better surface roughness and decrease machining stress
- Nano multi coating layer ▶ High hardness and toughness



TU4025

- Suitable for high speed, continuous machining of Stainless steel and Steel(Carbon, Alloy, Mold steel etc.)
- Superior wear resistance with Nano composite powder
- Applying Nano Multi layer coating ▶ Heat resistance,wear resistance and high toughness available
- High lubrication coating layer apply to prevent built up edge



Chip Breaker Feature

TJ Chip Breaker

Machining type
Grooving / Turning
Parting off

Work piece
P,M,S group
M(Mold)

- Features : · Various machining type
- Excellent tool life
- Enhanced chip control

★ G (Grind) insert can be provided according to customer needs

TR Chip Breaker

Machining type
Profiling / Undercut

Work piece
P,M,S group
M(Mold)

- Features : · Various machining type
- Excellent tool life
- Enhanced chip control
- Full Radius for profiling

★ G (Grind) insert can be provided according to customer needs

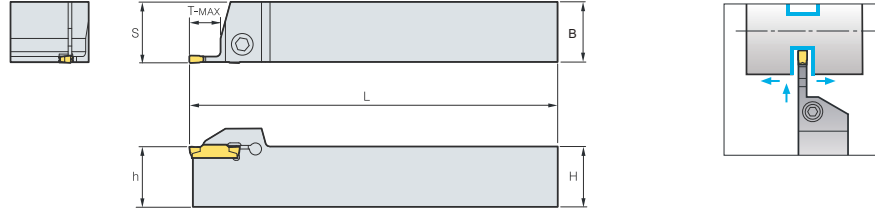
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting / Grooving
Miniature Tool

Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

Order No.	Dimension (mm)				Coated	
	W	R	L	B	TV3025	TU4025
TNG20N02M-TJ	2	0.2	20.0	1.7	•	•
TNG30N02M-TJ	3	0.2	20.0	2.2	•	•
TNG30N04M-TJ	3	0.4	20.0	2.2	•	•
TNG40N02M-TJ	4	0.2	20.0	3.2	•	•
TNG40N04M-TJ	4	0.4	20.0	3.2	•	•
TNG40N08M-TJ	4	0.8	20.0	3.2	•	•
TNG50N02M-TJ	5	0.2	25.0	4.0	•	•
TNG50N04M-TJ	5	0.4	25.0	4.0	•	•
TNG50N08M-TJ	5	0.8	25.0	4.0	•	•
TNG60N08M-TJ	6	0.8	25.0	5.0	•	•
TNG80N08M-TJ	8	0.8	30.3	6.0	•	•

Order No.	Dimension (mm)				Coated	
	W	R	L	B	TV3025	TU4025
TNG30R15M-TR	3	1.5	20.0	2.2	•	•
TNG40R20M-TR	4	2.0	20.0	3.2	•	•
TNG50R25M-TR	5	2.5	25.0	4.0	•	•
TNG60R30M-TR	6	3.0	25.0	5.0	•	•
TNG80R40M-TR	8	4.0	30.3	6.0	•	•

NG..EHR/L

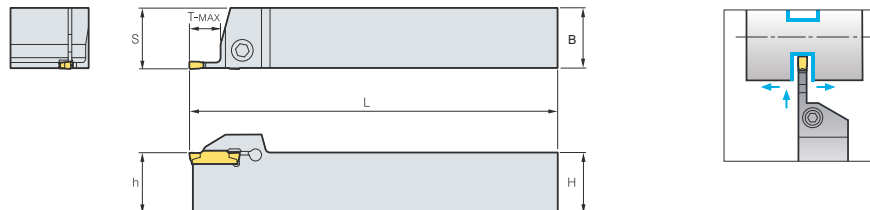


(mm)

Order No.	Dimension (mm)						Insert	Wrench 	Screw 	
	W	T-MAX	H	B	L	h				
NG2EHR/L2020-T09	2	9	20	20	125	20	TNG20N02M-TJ	NW220	TNS220	
NG2EHR/L2020-T13	2	13	20	20	125	20				
NG2EHR/L2020-T15	2	15	20	20	125	20				
NG2EHR/L2525-T09	2	9	25	25	150	25		NW225	TNS225	
NG2EHR/L2525-T13	2	13	25	25	150	25				
NG2EHR/L2525-T15	2	15	25	25	150	25				
NG2EHR/L2525-T17	2	17	25	25	150	25		NW2325	TNS2325	
NG2EHR/L3225-T09	2	9	32	25	150	32				
NG2EHR/L3225-T13	2	13	32	25	150	32				
NG2EHR/L3225-T15	2	15	32	25	150	32				
NG2EHR/L3225-T17	2	17	32	25	150	32	TNG30N..M-TJ TNG30R15M-TR	NW320	TNS320	
NG3EHR/L2020-T09	3	9	20	20	120	20				
NG3EHR/L2020-T11	3	11	20	20	120	20				
NG3EHR/L2020-T13	3	13	20	20	120	20				
NG3EHR/L2020-T15	3	15	20	20	120	20				
NG3EHR/L2020-T17	3	17	20	20	120	20				
NG3EHR/L2020-T20	3	20	20	20	120	20		NW325	TNS325	
NG3EHR/L2525-T09	3	9	25	25	150	25				
NG3EHR/L2525-T11	3	11	25	25	150	25				
NG3EHR/L2525-T13	3	13	25	25	150	25				
NG3EHR/L2525-T15	3	15	25	25	150	25				
NG3EHR/L2525-T17	3	17	25	25	150	25	NW3325	TNS3325		
NG3EHR/L2525-T20	3	20	25	25	150	25				
NG3EHR/L3225-T09	3	9	32	25	150	32				
NG3EHR/L3225-T11	3	11	32	25	150	32				
NG3EHR/L3225-T13	3	13	32	25	150	32				
NG3EHR/L3225-T15	3	15	32	25	150	32				
NG3EHR/L3225-T17	3	17	32	25	150	32				
NG3EHR/L3225-T20	3	20	32	25	150	32			NW332	TNS332
NG3EHR/L3232-T09	3	9	32	32	150	32				
NG3EHR/L3232-T11	3	11	32	32	150	32				
NG3EHR/L3232-T13	3	13	32	32	150	32				
NG3EHR/L3232-T15	3	15	32	32	150	32				
NG3EHR/L3232-T17	3	17	32	32	150	32				
NG3EHR/L3232-T20	3	20	32	32	150	32				



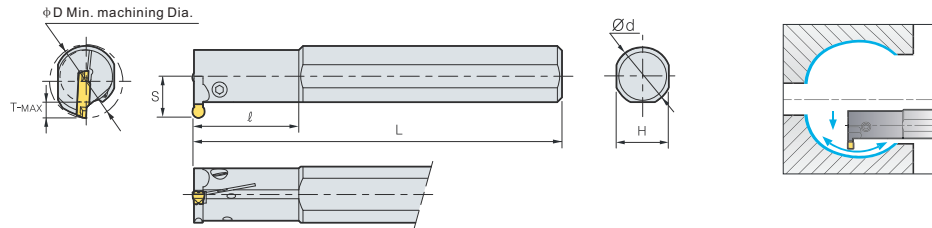
NG..EHR/L



(mm)

Order No.	Dimension (mm)						Insert	Wrench 	Screw 	
	W	T-MAX	H	B	L	h				
NG4EHR/L2020-T09	4	9	20	20	125	20	TNG40N..M-TJ TNG40R20M-TR	NW420	TNS420	
NG4EHR/L2020-T11	4	11	20	20	125	20				
NG4EHR/L2020-T13	4	13	20	20	125	20				
NG4EHR/L2020-T15	4	15	20	20	125	20				
NG4EHR/L2525-T09	4	9	25	25	150	25		TNG50N..M-TJ TNG50R25M-TR	NW425	TNS425
NG4EHR/L2525-T11	4	11	25	25	150	25				
NG4EHR/L2525-T13	4	13	25	25	150	25				
NG4EHR/L2525-T15	4	15	25	25	150	25				
NG4EHR/L3225-T09	4	9	32	25	150	32			NW4325	TNS4325
NG4EHR/L3225-T11	4	11	32	25	150	32				
NG4EHR/L3225-T13	4	13	32	25	150	32				
NG4EHR/L3225-T15	4	15	32	25	150	32				
NG4EHR/L3225-T17	4	17	32	25	150	32				
NG4EHR/L3225-T20	4	20	32	25	150	32				
NG5EHR/L2525-T15	5	15	25	25	150	25	TNG60N..M-TJ TNG60R30M-TR		NW525	TNS525
NG5EHR/L2525-T20	5	20	25	25	150	25				
NG5EHR/L3225-T15	5	15	32	25	150	32				
NG5EHR/L3225-T20	5	20	32	25	150	32		NW5325	TNS5325	
NG5EHR/L3225-T25	5	25	32	25	150	32				
NG5EHR/L3232-T15	5	15	32	32	170	32				
NG5EHR/L3232-T20	5	20	32	32	170	32	NW532	TNS532		
NG5EHR/L3232-T25	5	25	32	32	170	32				
NG6EHR/L2525-T15	6	15	25	25	150	25			TNG80N..M-TJ TNG80R40M-TR	NW625
NG6EHR/L2525-T20	6	20	25	25	150	25				
NG6EHR/L2525-T25	6	25	25	25	150	25				
NG6EHR/L3225-T15	6	15	32	25	150	32	NW6325	TNS6325		
NG6EHR/L3225-T20	6	20	32	25	150	32				
NG6EHR/L3225-T25	6	25	32	25	150	32				
NG6EHR/L3232-T15	6	15	32	32	170	32	NW632	TNS632		
NG6EHR/L3232-T20	6	20	32	32	170	32				
NG6EHR/L3232-T25	6	25	32	32	170	32				
NG8EHR/L3225-T15	8	15	32	25	170	32	NW8325	TNS8325		
NG8EHR/L3225-T20	8	20	32	25	170	32				
NG8EHR/L3225-T25	8	25	32	25	170	32				
NG8EHR/L3225-T30	8	30	32	25	170	32			NW832	TNS832
NG8EHR/L3232-T15	8	15	32	32	170	32				
NG8EHR/L3232-T20	8	20	32	32	170	32				
NG8EHR/L3232-T25	8	25	32	32	170	32				
NG8EHR/L3232-T30	8	30	32	32	170	32				
NG8EHR/L3232-T32	8	32	32	32	170	32				

NG..IVR/L



(mm)

Order No.	Dimension (mm)								Insert	Wrench	Screw
	W	T-MAX	D	d	L	S	H	I			
NG2IVR/L2516-T08	2	8	25	16	125	16.5	14	-	TNG20N02M-TJ	NFW216	TNFS216
NG2IVR/L2520-T06	2	6	25	20	160	15.8	18	40		NFW220	TNFS220
NG3IVR/L2520-T06	3	6	25	20	160	15.8	18	40	TNG30N..M-TJ TNG30R15M-TR	NFW320	TNFS320
NG3IVR/L2525-T051	3	5.1	25	25	200	17.5	23	40		NFW325	TNFS325
NG3IVR/L3225-T08	3	8	32	25	200	21.5	23	40		NFW3255	TNFS3255
NG3IVR/L4032-T10	3	10	40	32	250	27.0	30	60		NFW332	TNFS332
NG4IVR/L2520-T06	4	6	25	20	160	15.8	18	40	TNG40N..M-TJ TNG40R20M-TR	NFW420	TNFS420
NG4IVR/L3225-T08	4	8	32	25	200	21.5	23	40		NFW425	TNFS425
NG4IVR/L3132-T04	4	4	31	32	250	20.8	30	60		NFW4321	TNFS4321
NG4IVR/L4032-T10	4	10	40	32	250	27.0	30	60		NFW4322	TNFS4322
NG5IVR/L3125-T05	5	5	31	25	200	17.3	23	60	TNG50N..M-TJ TNG50R25M-TR	NFW525	TNFS525
NG5IVR/L4032-T10	5	10	40	32	250	27.0	30	60		NFW532	TNFS532
NG6IVR/L3132-T04	6	4	31	32	250	20.8	30	60	TNG60N..M-TJ TNG60R30M-TR	NFW6321	TNFS6321
NG6IVR/L4032-T10	6	10	40	32	250	27.0	30	60		NFW6322	TNFS6322
NG8IVR/L3732-T05	8	5	37	32	250	21.3	30	60	TNG80N..M-TJ TNG80R40M-TR	NFW832	TNFS832
NG8IVR/L4240-T058	8	5.8	42	40	300	25.8	38	65		NFW840	TNFS840

Insert

External Toolholder

Internal Toolholder

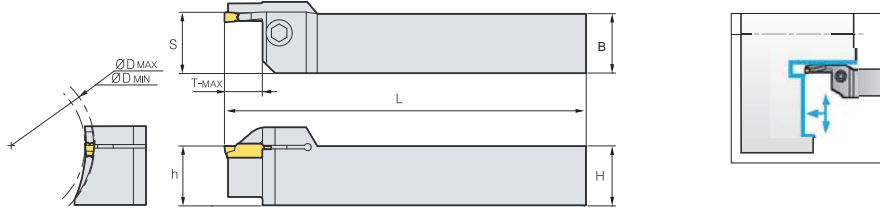
PSC Toolholder

Threading

Parting, Grooving

Miniature Tool

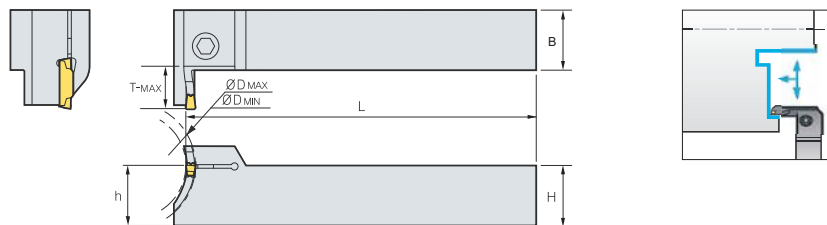
NG..TR/L



(mm)

Order No.	Dimension (mm)									Insert	Wrench 	Screw
	W	T-MAX	H	B	L	S	h	D MIN	D MAX			
NG3TR/L20-024035-T10	3	10	20	20	150	20.5	20	24	35	TNG30N..M-TJ TNG30R15M-TR	NTW320	TNTS320
NG3TR/L20-029040-T10	3	10	20	20	150	20.5	20	29	40			
NG3TR/L20-034050-T10	3	10	20	20	150	20.5	20	34	50			
NG3TR/L20-044070-T15	3	15	20	20	150	20.5	20	44	70			
NG3TR/L20-064100-T15	3	15	20	20	150	20.5	20	64	100			
NG3TR/L25-029040-T10	3	10	25	25	150	25.5	25	29	40		NTW325	TNTS325
NG3TR/L25-034050-T10	3	10	25	25	150	25.5	25	34	50			
NG3TR/L25-044070-T15	3	15	25	25	150	25.5	25	44	70			
NG3TR/L25-064100-T15	3	15	25	25	150	25.5	25	64	100			
NG4TR/L20-028042-T20	4	20	20	20	150	20.6	20	28	42			
NG4TR/L20-034050-T20	4	20	20	20	150	20.6	20	34	50			
NG4TR/L20-042070-T20	4	20	20	20	150	20.6	20	42	70			
NG4TR/L20-062120-T20	4	20	20	20	150	20.6	20	62	120			
NG4TR/L20-112200-T20	4	20	20	20	150	20.6	20	112	200			
NG4TR/L25-022036-T10	4	10	25	25	150	25.6	25	22	36	NTW425	TNTS425	
NG4TR/L25-028042-T20	4	20	25	25	150	25.6	25	28	42			
NG4TR/L25-034050-T20	4	20	25	25	150	25.6	25	34	50			
NG4TR/L25-042070-T20	4	20	25	25	150	25.6	25	42	70			
NG4TR/L25-062120-T20	4	20	25	25	150	25.6	25	62	120			
NG4TR/L25-112200-T20	4	20	25	25	150	25.6	25	112	200	TNG50N..M-TJ TNG50R25M-TR	NTW520	TNTS520
NG5TR/L20-050080-T25	5	25	20	20	150	20.6	20	50	80			
NG5TR/L20-070110-T25	5	25	20	20	150	20.6	20	70	110			
NG5TR/L20-100150-T25	5	25	20	20	150	20.6	20	100	150			
NG5TR/L20-140200-T25	5	25	20	20	150	20.6	20	140	200			
NG5TR/L25-050080-T25	5	25	25	25	150	25.6	25	50	80		NTW525	TNTS525
NG5TR/L25-070110-T25	5	25	25	25	150	25.6	25	70	110			
NG5TR/L25-100150-T25	5	25	25	25	150	25.6	25	100	150			
NG5TR/L25-140200-T25	5	25	25	25	150	25.6	25	140	200			
NG6TR/L25-048070-T25	6	25	25	25	150	25.6	25	48	70			
NG6TR/L25-058100-T25	6	25	25	25	150	25.6	25	58	100			
NG6TR/L25-088180-T25	6	25	25	25	150	25.6	25	88	180			
NG6TR/L25-168400-T25	6	25	25	25	150	25.6	25	168	400			

NG..VR/L



(mm)



Order No.	Dimension (mm)								Insert	Wrench 	Screw
	W	T-MAX	H	B	L	h	DMIN	DMAX			
NG3VR/L20-024035-T10	3	10	20	20	150	20	24	35	TNG30N..M-TJ TNG30R15M-TR	NVW320	TNVS320
NG3VR/L20-029040-T10	3	10	20	20	150	20	29	40			
NG3VR/L20-034050-T10	3	10	20	20	150	20	34	50			
NG3VR/L20-044060-T15	3	15	20	20	150	20	44	60			
NG3VR/L20-054085-T15	3	15	20	20	150	20	54	85			
NG3VR/L25-024035-T10	3	10	25	25	150	25	24	35			
NG3VR/L25-029040-T10	3	10	25	25	150	25	29	40			
NG3VR/L25-034050-T10	3	10	25	25	150	25	34	50			
NG3VR/L25-044060-T15	3	15	25	25	150	25	44	60			
NG3VR/L25-054085-T15	3	15	25	25	150	25	54	85			
NG4VR/L20-032050-T15	4	15	20	20	150	20	32	50	TNG40N..M-TJ TNG40R20M-TR	NVW420	TNVS420
NG4VR/L20-042060-T15	4	15	20	20	150	20	42	60			
NG4VR/L20-052085-T15	4	15	20	20	150	20	52	85			
NG4VR/L25-022040-T12	4	12	25	25	150	25	22	40			
NG4VR/L25-032050-T15	4	15	25	25	150	25	32	50			
NG4VR/L25-042060-T15	4	15	25	25	150	25	42	60			
NG4VR/L25-052085-T15	4	15	25	25	150	25	52	85			
NG5VR/L20-050080-T20	5	20	20	20	150	20	50	80	TNG50N..M-TJ TNG50R25M-TR	NVW520	TNVS520
NG5VR/L20-070110-T20	5	20	20	20	150	20	70	110			
NG5VR/L20-100150-T20	5	20	20	20	150	20	100	150			
NG5VR/L20-140200-T20	5	20	20	20	150	20	140	200			
NG5VR/L25-050080-T20	5	20	25	25	150	25	50	80			
NG5VR/L25-070110-T20	5	20	25	25	150	25	70	110			
NG5VR/L25-100150-T20	5	20	25	25	150	25	100	150			
NG5VR/L25-140200-T20	5	20	25	25	150	25	140	200			
NG6VR/L25-048085-T20	6	20	25	25	150	25	48	85	TNG60N..M-TJ TNG60R30M-TR	NVW625	TNVS625
NG6VR/L25-073150-T20	6	20	25	25	150	25	73	150			
NG6VR/L25-138250-T20	6	20	25	25	150	25	138	250			


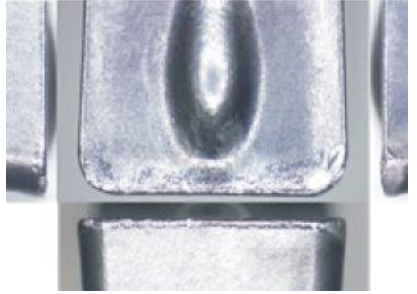
TNG Series Standard Cutting Conditions


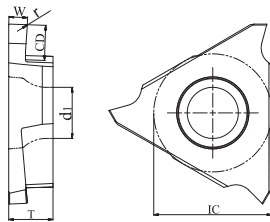
ISO	Workpiece Material	Grade	Vc (m/min)	Grooving				Turning			
				Edge Width (mm)				Edge Width (mm)			
				2-4	5	6	8	2-4	5	6	8
				f(mm/r)				f(mm/r)			
P	Carbon Steel	TU4025	150-300	0.05-0.20	0.10-0.25	0.10-0.30	0.10-0.30	0.10-0.25	0.10-0.30	0.15-0.30	0.20-0.35
	Alloy Steel	TU4025	120-280	0.05-0.15	0.10-0.20	0.10-0.25	0.10-0.30	0.10-0.25	0.10-0.30	0.15-0.30	0.20-0.35
M	Stainless Steel	TV3025	120-250	0.05-0.25	0.10-0.30	0.10-0.30	0.10-0.30	0.10-0.25	0.10-0.30	0.15-0.30	0.20-0.35
K	Cast Iron	TU4025	120-210	0.05-0.25	0.10-0.25	0.15-0.30	0.15-0.35	0.10-0.30	0.10-0.35	0.15-0.35	0.20-0.40
S	Hardened Alloy	TV3025	30-90	0.05-0.20	0.10-0.25	0.10-0.25	0.10-0.25	0.05-0.20	0.10-0.20	0.10-0.20	0.10-0.20
	Titanium Alloy	TV3025	30-90	0.05-0.20	0.10-0.25	0.10-0.25	0.10-0.25	0.05-0.20	0.10-0.20	0.10-0.20	0.10-0.20



Applications


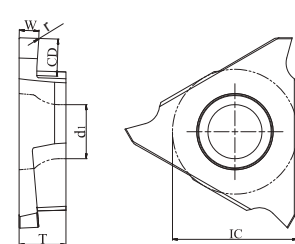
Insert	Workpiece name	Aerospace parts (COMP AFT INNER)	Workpiece material	Inconel 718
	Machining type	Ring shape/Vertical lathe(O.D deep grooving)/Wet		
	Cutting condition	Max.dia=542mm fn=0.15mm/rev	Vc=40m/min ap=0.7mm	
	Item	TNG50R25M-TR(TV3025)		
External Toolholder	Division	TOTIME		Competitor(T)
	Tool life/ Wear image (7min)			
Internal Toolholder	Status comparison	Normal wear		Lots of chipping at edge
PSC Toolholder	Result	Wear and damage comparison → Better wear resistance performance than competitor		

Threading	Workpiece name	Automobile parts (turbocharger housing)	Workpiece material	1.4837
	Machining type	Turbocharger housing/Horizontal lathe(Shouldering,Grooving)/Wet		
	Cutting condition	Max.dia=99mm fn=0.05-0.2mm/rev	Vc=150m/min ap=3.0mm	
	Item	TNG30N04M-TJ (TV3025)		
Parting , Grooving	Division	TOTIME		Competitor(T)
	Tool life/ Wear image			
Miniature Tool	Status comparison	After 10pcs machining:normal wear		After 5pcs machining:partial chipping, large wear
	Result	Wear and damage comparison at limit → 2 times better wear, chipping resistance performance than competitor		

GB 			<table border="1"> <tr> <th>Material</th> <th colspan="2">TG4230</th> </tr> <tr> <td>Steel</td> <td style="background-color: #00a0e3; color: white;">P</td> <td>●</td> </tr> <tr> <td>Stainless</td> <td style="background-color: #ffff00;">M</td> <td>●</td> </tr> <tr> <td>Cast Iron</td> <td style="background-color: #ff0000; color: white;">K</td> <td>●</td> </tr> </table>		Material	TG4230		Steel	P	●	Stainless	M	●	Cast Iron	K	●	● : Stock ○ : Non-Stock	
			Material	TG4230														
Steel	P	●																
Stainless	M	●																
Cast Iron	K	●																
Order No.	Dimension (mm)																	
	W	CD	r	IC	T	d1	R	L										
GB3075R/L -010	0.75	2.0	0.1	9.525	3.18	4.4	●	○										
GB3080R/L -005	0.80		0.05	9.525	3.18	4.4	●	○										
GB3095R/L -010	0.95		0.1	9.525	3.18	4.4	●	○										
GB3100R/L -005	1.00		0.05	9.525	3.18	4.4	●	○										
GB3100R/L -010	1.00		0.1	9.525	3.18	4.4	●	○										
GB3120R/L -010	1.20		0.1	9.525	3.18	4.4	●	○										
GB3120R/L -020	1.20		0.2	9.525	3.18	4.4	●	○										
GB3125R/L -010	1.25		0.1	9.525	3.18	4.4	●	○										
GB3140R/L -010	1.40		0.1	9.525	3.18	4.4	●	○										
GB3140R/L -020	1.40		0.2	9.525	3.18	4.4	●	●										
GB3150R/L -010	1.50		0.1	9.525	3.18	4.4	●	○										
GB3150R/L -020	1.50		0.2	9.525	3.18	4.4	●	●										
GB3175R/L -010	1.75		0.1	9.525	3.18	4.4	●	○										
GB3200R/L -010	2.00	2.5	0.1	9.525	3.18	4.4	●	○										
GB3200R/L -020	2.00		0.2	9.525	3.18	4.4	●	●										
GB3250R/L -010	2.50		0.1	9.525	3.18	4.4	●	○										
GB3250R/L -020	2.50		0.2	9.525	3.18	4.4	●	●										
GB3300R/L -020	3.00		0.2	9.525	3.18	4.4	●	●										
GB4125R/L -020	1.25	2.0	0.2	12.7	4.76	5.5	●	●										
GB4150R/L -010	1.50	3.5	0.1	12.7	4.76	5.5	●	○										
GB4150R/L -020	1.50		0.2	12.7	4.76	5.5	●	●										
GB4175R/L -020	1.75		0.2	12.7	4.76	5.5	●	○										
GB4185R/L -020	1.85		0.2	12.7	4.76	5.5	●	●										
GB4200R/L -005	2.00		0.05	12.7	4.76	5.5	●	○										
GB4200R/L -010	2.00		0.1	12.7	4.76	5.5	●	○										
GB4200R/L -020	2.00		0.2	12.7	4.76	5.5	●	●										
GB4200R/L -030	2.00		0.3	12.7	4.76	5.5	●	○										
GB4200R/L -050	2.00		0.5	12.7	4.76	5.5	●	○										
GB4250R/L -030	2.50		0.3	12.7	4.76	5.5	●	●										
GB4265R/L -030	2.65	4.0	0.3	12.7	4.76	5.5	●	○										
GB4280R/L -030	2.80		0.3	12.7	4.76	5.5	●	○										
GB4300R/L -030	3.00		0.3	12.7	4.76	5.5	●	●										
GB4330R/L -030	3.30	5.0	0.3	12.7	4.76	5.5	●	○										
GB4350R/L -030	3.50		0.3	12.7	4.76	5.5	●	●										
GB4400R/L -040	4.00		0.4	12.7	4.76	5.5	●	●										
GB4430R/L -040	4.30		0.4	12.7	4.76	5.5	●	○										

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Treading
Parting, Grooving
Miniature Tool

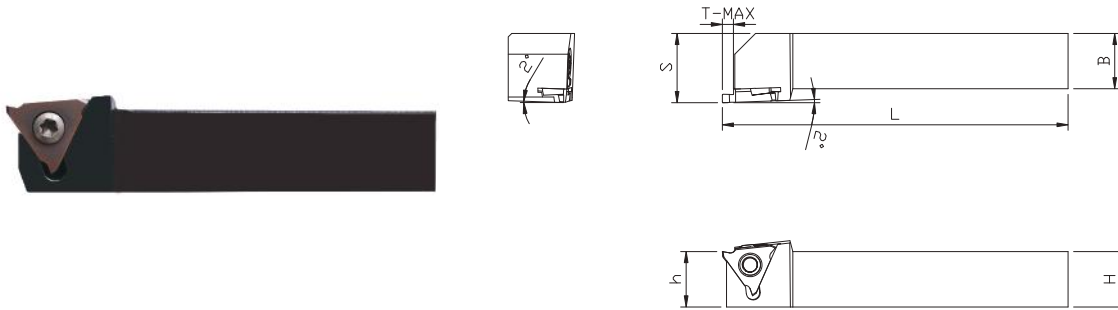
Insert
 External Toolholder
 Internal Toolholder
 PSC Toolholder
 Threading
 Parting, Grooving
 Miniature Tool

GBR					<table border="1"> <tr> <th>Material</th> <th colspan="2">TG4230</th> </tr> <tr> <td>Steel</td> <td style="background-color: #00aaff; color: white;">P</td> <td>●</td> </tr> <tr> <td>Stainless</td> <td style="background-color: #ffff00; color: black;">M</td> <td>●</td> </tr> <tr> <td>Cast Iron</td> <td style="background-color: #ff0000; color: white;">K</td> <td>●</td> </tr> </table>		Material	TG4230		Steel	P	●	Stainless	M	●	Cast Iron	K	●
	Material	TG4230																
Steel	P	●																
Stainless	M	●																
Cast Iron	K	●																
				● : Stock ○ : Non-Stock														
Order No.	Dimension (mm)																	
	W	CD	r	IC	T	d1	R	L										
GBR4100R/L -050	1.00	2.0	0.50	12.70	4.76	5.50	●	●										
GBR4150R/L -075	1.50	3.5	0.75	12.70	4.76	5.50	●	●										
GBR4200R/L -100	2.00	3.5	1.00	12.70	4.76	5.50	●	●										
GBR4250R/L -125	2.50	4.0	1.25	12.70	4.76	5.50	●	●										
GBR4300R/L -150	3.00	4.0	1.50	12.70	4.76	5.50	●	●										
GBR4400R/L -200	4.00	5.0	2.00	12.70	4.76	5.50	●	●										

GB/GBR Series Standard Cutting Conditions

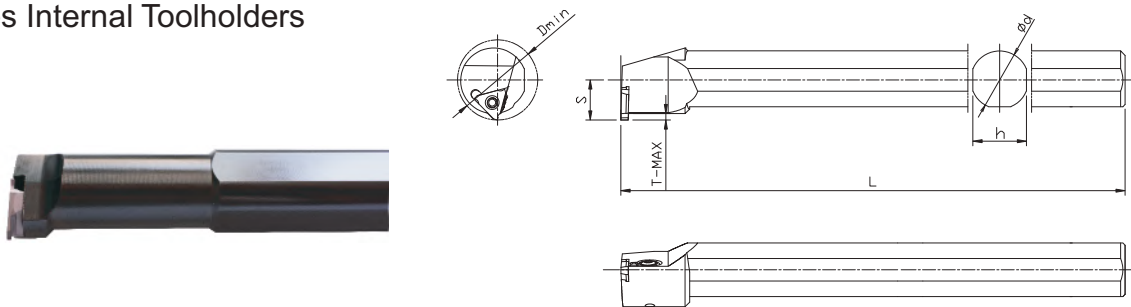
ISO	Workpiece Material	Vc(m/min)	Grooving					Turning				
			Edge Width (mm)					Edge Width (mm)				
			0.75-1.00	1.20-2.00	2.50-3.00	3.30-4.00	4.30	0.75-1.00	1.20-2.00	2.50-3.00	3.30-4.00	4.30
			f(mm/min)					f(mm/min)				
P	Carbon Steel	80-200	0.03-0.08	0.04-0.09	0.05-0.10	0.05-0.12	0.05-0.12	—	0.04-0.09	0.05-0.10	0.05-0.10	0.05-0.10
	Alloy Steel	80-180	0.03-0.07	0.04-0.08	0.05-0.09	0.05-0.10	0.05-0.10	—	0.04-0.08	0.05-0.09	0.05-0.10	0.05-0.10
M	Stainless Steel	60-150	0.03-0.07	0.04-0.08	0.05-0.09	0.05-0.10	0.05-0.10	—	0.04-0.08	0.05-0.09	0.05-0.10	0.05-0.10
K	Cast Iron	80-180	0.03-0.08	0.04-0.09	0.05-0.10	0.05-0.12	0.05-0.12	—	0.04-0.09	0.05-0.10	0.05-0.10	0.05-0.10

GB Series External Toolholders



Order No.	Dimension (mm)						Insert	Wrench 	Screw
	T-MAX	H	B	L	S	h			
GBER2020K3	2.5	20	20	125	25	20	GB3...	TT15P	SI60M 035120
GBER2525M3	2.5	25	25	150	30	25			
GBER2020K4-15	4.0	20	20	125	25	20	GB4/GBR4... (1.0 ≤ W < 2.5)	TT20P	SI60M 050120
GBER2525M4-15	4.0	25	25	150	30	25			
GBER2020K4-25	4.5	20	20	125	25	20	GB4/GBR4... (2.5 ≤ W < 3.3)		
GBER2525M4-25	4.5	25	25	150	30	25			
GBER2020K4-35	5.5	20	20	125	25	20	GB4/GBR4... (3.3 ≤ W < 4.8)		
GBER2525M4-35	5.5	25	25	150	30	25			

GB Series Internal Toolholders



Order No.	Dimension (mm)						Insert	Wrench 	Screw
	T-MAX	Dmin	Φd	L	S	h			
GBIR/L2620Q3	3.0	26	20	180	13	18	GB3...	TT15P	SI60M
GBIR/L3525R4	4.5	35	25	200	17.5	23	GB4/GBR4...	TT20P	SI60M

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

TGE Series Inserts for Grooving

Insert

External Toolholder

Internal Toolholder

PSC Toolholder

Threading

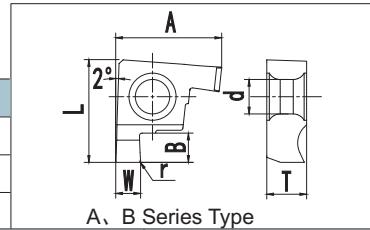
Parting , Grooving

Miniature Tool

Model	A(mm)	L(mm)	T (mm)	d (mm)
TGER**-A	6.69	6.50	2.58	2.5
TGER**-B	8.46	8.20	3.18	2.7
TGER**-C	5.80	11.48	4.05	2.8
TGER**-D	6.80	16.44	5.05	3.4
TGER**-E	9.54	21.66	5.55	4.4

● Good recommendation

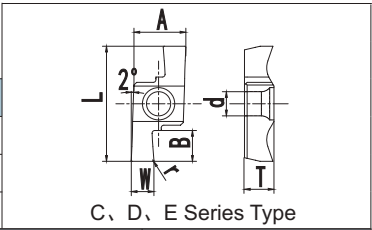


Material Recommended	Grade	TG1225
	Steel	P ●
	Stainless	M ●
	Cast Iron	K ●



Insert	Order No.		Dimensions (mm)			Toolholders
	Right hand	Left hand	W	B	r	
	TGER050-A	TGEL050-A	0.50	1.2	0.05	SIGER/L0808A-EH SIGER/L0808A-WH
	TGER060-A	TGEL060-A	0.60	1.2	0.05	
	TGER070-A	TGEL070-A	0.70	1.2	0.05	
	TGER080-A	TGEL080-A	0.80	1.2	0.05	
	TGER100-A	TGEL100-A	1.00	1.5	0.05	
	TGER120-A	TGEL120-A	1.20	1.5	0.05	
	TGER125-A	TGEL125-A	1.25	1.5	0.05	
	TGER140-A	TGEL140-A	1.40	1.5	0.10	
	TGER150-A	TGEL150-A	1.50	1.5	0.10	
	TGER180-A	TGEL180-A	1.80	1.5	0.10	
	TGER200-A	TGEL200-A	2.00	1.5	0.10	
	TGER080-B	TGEL080-B	0.80	1.8	0.05	SIGER/L1010B-EH SIGER/L1010B-WH SIGER/L1210B-EH
	TGER100-B	TGEL100-B	1.00	2.2	0.05	
	TGER120-B	TGEL120-B	1.20	2.2	0.05	
	TGER125-B	TGEL125-B	1.25	2.2	0.05	
	TGER130-B	TGEL130-B	1.30	2.2	0.10	
	TGER145-B	TGEL145-B	1.45	2.2	0.10	
	TGER150-B	TGEL150-B	1.50	2.2	0.10	
	TGER180-B	TGEL180-B	1.80	2.2	0.10	
	TGER200-B	TGEL200-B	2.00	2.2	0.10	
	TGER225-B	TGEL225-B	2.25	2.2	0.10	
	TGER250-B	TGEL250-B	2.50	2.2	0.10	
TGER280-B	TGEL280-B	2.80	2.2	0.20		
TGER300-B	TGEL300-B	3.00	2.2	0.20		
	TGER100-C	TGEL100-C	1.00	2.5	0.05	SIGER/L1412C-EH SIGER/L1612C-EH SIGER/L1616C-EH
	TGER120-C	TGEL120-C	1.20	2.5	0.05	
	TGER125-C	TGEL125-C	1.25	2.5	0.05	
	TGER140-C	TGEL140-C	1.40	2.5	0.10	
	TGER145-C	TGEL145-C	1.45	2.5	0.10	
	TGER150-C	TGEL150-C	1.50	2.5	0.10	
	TGER160-C	TGEL160-C	1.60	2.5	0.10	
	TGER170-C	TGEL170-C	1.70	2.5	0.10	
	TGER185-C	TGEL185-C	1.85	2.5	0.10	
	TGER195-C	TGEL195-C	1.95	2.5	0.10	
	TGER200-C	TGEL200-C	2.00	2.5	0.10	
	TGER225-C	TGEL225-C	2.25	2.5	0.10	
	TGER250-C	TGEL250-C	2.50	2.5	0.20	
	TGER275-C	TGEL275-C	2.75	2.5	0.20	
	TGER280-C	TGEL280-C	2.80	2.5	0.20	
	TGER300-C	TGEL300-C	3.00	2.5	0.20	
TGER320-C	TGEL320-C	3.20	2.5	0.20		
TGER350-C	TGEL350-C	3.50	2.5	0.20		

Right-hand Insert for Right-hand Toolholder
Left-hand Insert for Left-hand Toolholder

TGE Series Inserts for Grooving

Model	A(mm)	L(mm)	T (mm)	d(mm)				
TGER**-A	6.69	6.50	2.58	2.5	● Good recommendation Material Recommended	Grade		TG1225
TGER**-B	8.46	8.20	3.18	2.7		Steel		P ●
TGER**-C	5.80	11.48	4.05	2.8		Stainless		M ●
TGER**-D	6.80	16.44	5.05	3.4		Cast Iron		K ●
TGER**-E	9.54	21.66	5.55	4.4				
Insert	Order No.		Dimensions(mm)			Toolholders		
	Right hand	Left hand	W	B	r			
	TGER100-D	TGEL100-D	1.00	2.5	0.05	SIGER/L2020D-EH SIGER/L2525D-EH		
	TGER120-D	TGEL120-D	1.20	2.5	0.05			
	TGER125-D	TGEL125-D	1.25	2.5	0.05			
	TGER140-D	TGEL140-D	1.40	2.5	0.05			
	TGER145-D	TGEL145-D	1.45	2.5	0.10			
	TGER150-D	TGEL150-D	1.50	3.0	0.10			
	TGER170-D	TGEL170-D	1.70	3.0	0.10			
	TGER185-D	TGEL185-D	1.85	3.0	0.10			
	TGER195-D	TGEL195-D	1.95	3.0	0.10			
	TGER200-D	TGEL200-D	2.00	3.6	0.10			
	TGER225-D	TGEL225-D	2.25	3.6	0.10			
	TGER230-D	TGEL230-D	2.30	3.6	0.20			
	TGER250-D	TGEL250-D	2.50	3.6	0.20			
	TGER275-D	TGEL275-D	2.75	3.6	0.20			
	TGER280-D	TGEL280-D	2.80	4.5	0.20			
	TGER300-D	TGEL300-D	3.00	4.5	0.20			
	TGER320-D	TGEL320-D	3.20	4.5	0.20			
TGER350-D	TGEL350-D	3.50	4.5	0.20				
TGER400-D	TGEL400-D	4.00	4.5	0.20				
	TGER100-E	TGEL100-E	1.00	2.5	0.05	SIGER/L2525E-EH SIGER/L3232E-EH SIGER/L4032E-EH		
	TGER150-E	TGEL150-E	1.50	3.0	0.10			
	TGER170-E	TGEL170-E	1.70	3.0	0.10			
	TGER185-E	TGEL185-E	1.85	3.0	0.10			
	TGER195-E	TGEL195-E	1.95	3.0	0.10			
	TGER200-E	TGEL200-E	2.00	3.2	0.10			
	TGER225-E	TGEL225-E	2.25	3.2	0.10			
	TGER230-E	TGEL230-E	2.30	3.2	0.20			
	TGER250-E	TGEL250-E	2.50	4.5	0.20			
	TGER275-E	TGEL275-E	2.75	4.5	0.20			
	TGER280-E	TGEL280-E	2.80	4.5	0.20			
	TGER300-E	TGEL300-E	3.00	4.5	0.20			
	TGER330-E	TGEL330-E	3.30	4.5	0.20			
	TGER350-E	TGEL350-E	3.50	5.5	0.20			
	TGER400-E	TGEL400-E	4.00	5.5	0.20			
	TGER430-E	TGEL430-E	4.30	5.5	0.20			
	TGER450-E	TGEL450-E	4.50	6.5	0.20			
TGER460-E	TGEL460-E	4.60	6.5	0.20				
TGER500-E	TGEL500-E	5.00	6.5	0.20				

Right-hand Insert for Right-hand Toolholder
Left-hand Insert for Left-hand Toolholder



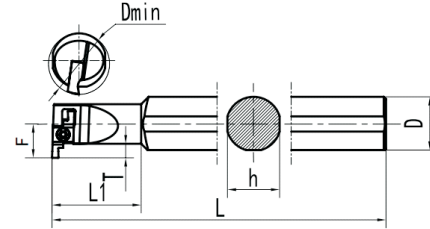
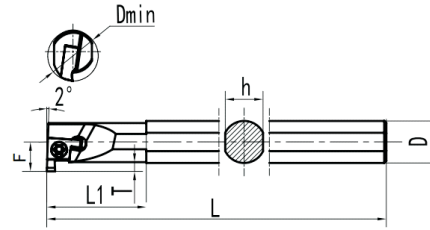
TGE Series Inserts for Grooving

Model	A(mm)	L(mm)	T (mm)	d (mm)	Material Recommended	Grade	TG1225	● Good recommendation								
TGER**-A	6.69	6.5	2.58	2.5						Steel	P	●				
TGER**-B	8.46	8.2	3.18	2.7												
TGER**-C	5.8	11.48	4.05	2.8										Stainless	M	●
TGER**-D	6.8	16.44	5.05	3.4												
TGER**-E	9.54	21.66	5.55	4.4	Cast Iron	K	●									

Insert	Order No.		Dimensions(mm)			Toolholders
	Right hand	Left hand	W	B	r	
	TGER100-050AR	TGEL100-050AR	1.0	1.5	0.50	SIGER/L0808A-EH SIGER/L0808A-WH
	TGER150-075AR	TGEL150-075AR	1.5	1.5	0.75	
	TGER200-100AR	TGEL200-100AR	2.0	1.5	1.00	
	TGER100-050BR	TGEL100-050BR	1.0	2.2	0.50	SIGER/L1010B-EH SIGER/L1010B-WH SIGER/L1210B-EH
	TGER150-075BR	TGEL150-075BR	1.5	2.2	0.75	
	TGER200-100BR	TGEL200-100BR	2.0	2.2	1.00	
	TGER250-125BR	TGEL250-125BR	2.5	2.2	1.25	
	TGER300-150BR	TGEL300-150BR	3.0	2.2	1.50	
	TGER100-050CR	TGEL100-050CR	1.0	2.5	0.50	SIGER/L1412C-EH SIGER/L1612C-EH SIGER/L1616C-EH
	TGER150-075CR	TGEL150-075CR	1.5	2.5	0.75	
	TGER200-100CR	TGEL200-100CR	2.0	2.5	1.00	
	TGER250-125CR	TGEL250-125CR	2.5	2.5	1.25	SIGER/L2020D-EH SIGER/L2525D-EH
	TGER300-150CR	TGEL300-150CR	3.0	2.5	1.50	
	TGER150-075DR	TGEL150-075DR	1.5	3.2	0.75	
	TGER200-100DR	TGEL200-100DR	2.0	3.2	1.00	
	TGER250-125DR	TGEL250-125DR	2.5	4.5	1.25	
	TGER300-150DR	TGEL300-150DR	3.0	4.5	1.50	
	TGER250-125ER	TGEL250-125ER	2.5	5.5	1.25	
TGER300-150ER	TGEL300-150ER	3.0	5.5	1.50		
TGER350-175ER	TGEL350-175ER	3.5	5.5	1.75		
TGER400-200ER	TGEL400-200ER	4.0	6.5	2.00		
TGER450-225ER	TGEL450-225ER	4.5	6.5	2.25		
TGER500-250ER	TGEL500-250ER	5.0	6.5	2.50		

Right-hand Insert for Right-hand Toolholder
Left-hand Insert for Left-hand Toolholder

TGE Series Toolholders for Grooving



WH: Carbide Shank

Order No.	Insert	Dimensions (mm)							Insert Screw	Torx Key
		Dmin	T	L1	D	F	h	L		
SIGER0808A-EH	TGER**A	8	1.5	20	8	4.8	7.2	100	L60M225	T6
SIGER0808A-WH	TGER**AR	8		20	8	4.8	7.2	100		
SIGER1010B-EH	TGER**B TGER**BR	10	2.2	25	10	6.2	9.0	125	L60M256	T8
SIGER1010B-WH		10		25	10	6.2	9.0	125		
SIGER1210B-EH		12		30	10	7.0	9.0	125		
SIGER1412C-EH	TGER**C TGER**CR	14	2.5	33	12	8.0	11.4	150	L60M256	T8
SIGER1612C-EH		16		20	12	8.5	11.4	150		
SIGER1616C-EH		16		36	16	9.0	15.0	160		
SIGER2020D-EH	TGER**D	20	4.5	40	20	12.1	19.0	180	L60M38	T10
SIGER2525D-EH	TGER**DR	25	4.2	45	25	12.3	24.0	200		
SIGER2525E-EH	TGER**E TGER**ER	25	6.5	45	25	15.6	24.0	200	L60M485	T15
SIGER3232E-EH		32		55	32	19.0	30.4	220		
SIGER4032E-EH		40		45	32	23.0	30.4	250		
SIGEL0808A-EH	TGEL**A	8	1.5	20	8	4.8	7.2	100	L60M225	T6
SIGEL0808A-WH	TGEL**AR	8		20	8	4.8	7.2	100		
SIGEL1010B-EH	TGEL**B TGEL**BR	10	2.2	25	10	6.2	9.0	125	L60M256	T8
SIGEL1010B-WH		10		25	10	6.2	9.0	125		
SIGEL1210B-EH		12		30	10	7.0	9.0	125		
SIGEL1412C-EH	TGEL**C TGEL**CR	14	2.5	33	12	8.0	11.4	150	L60M256	T8
SIGEL1612C-EH		16		20	12	8.5	11.4	150		
SIGEL1616C-EH		16		36	16	9.0	15.0	160		
SIGEL2020D-EH	TGEL**D	20	4.5	40	20	12.1	19.0	180	L60M38	T10
SIGEL2525D-EH	TGEL**DR	25	4.2	45	25	12.3	24.0	200		
SIGEL2525E-EH	TGEL**E TGEL**ER	25	6.5	45	25	15.6	24.0	200	L60M485	T15
SIGEL3232E-EH		32		55	32	19.0	30.4	220		
SIGEL4032E-EH		40		45	32	23.0	30.4	250		



TGE Series Inserts for Face Grooving

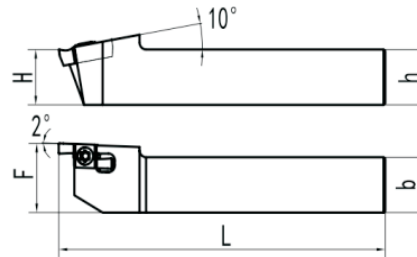
Model	A(mm)	L(mm)	T (mm)	d (mm)		
TGER**-D	6.8	16.44	5.05	3.4	● Good recommendation	
					Material Recommended	Grade TG1225
						Steel P ●
						Stainless M ●
						Cast Iron K ●

DM Series Type

DM...R Series Type

Insert	Order No.	External Dia. of the Groove	Dimensions (mm)			Toolholders
			W	B	r	
	TGER200DM10-D	>10mm	2.0	3.5	0.20	SEGEL1010K-D SEGEL1212K-D SEGEL1616H-D SEGEL2020K-D SEGEL2525M-D
	TGER250DM15-D	>15mm	2.5	4.5	0.20	
	TGER300DM15-D	>15mm	3.0	4.5	0.20	
	TGER400DM15-D	>15mm	4.0	4.5	0.20	
	TGER200DM10R100-D	>10mm	2.0	3.5	1.00	
	TGER250DM15R125-D	>15mm	2.5	4.5	1.25	
	TGER300DM15R150-D	>15mm	3.0	4.5	1.50	
	TGER400DM15R200-D	>15mm	4.0	4.5	2.00	

TGE Series Toolholders for Face Grooving



Order No.	Insert Type	Dimensions(mm)					Insert Screw	Torx Key
		h	b	L	F	H		
SEGEL1010K-D	TGER**-D	10	10	125	10	10	L60M310	T10
SEGEL1212K-D		12	12	125	12	12		
SEGEL1616H-D		16	16	100	20	16		
SEGEL2020K-D		20	20	125	25	20		
SEGEL2525M-D		25	25	150	32	25		

TGER/L...A(R),TGER/L...B(R) Series

ISO	Workpiece material	Vc(m/min)	Grooving			Turning		
			TGER/L050-200A	TGER/L080-200B	TGER/L225-200B	TGER/L050-200A	TGER/L080-200B	TGER/L225-200B
			TGER/L100-200AR	TGER/L100-200BR	TGER/L250-300BR	TGER/L100-200AR	TGER/L100-200BR	TGER/L250-300BR
			f(mm/r)			f(mm/r)		
P	Carbon Steel	50-80	0.01-0.03	0.02-0.04	0.02-0.04	0.01-0.03	0.02-0.04	0.02-0.04
	Alloy Steel	50-80	0.01-0.03	0.02-0.04	0.02-0.04	0.01-0.03	0.02-0.04	0.02-0.04
M	Stainless Steel	50-80	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03	0.01-0.03
K	Cast Iron	50-80	0.01-0.03	0.02-0.04	0.02-0.04	0.01-0.03	0.02-0.04	0.02-0.04

TGER/L...C(R),TGER/L...D(R) ,TGER/L...E(R) Series

ISO	Workpiece material	Vc(m/min)	Grooving						
			TGER/L100-200C	TGER/L225-350C	TGER/L200-280D	TGER/L250-330E(R)	TGER/L300-400D	TGER/L350-430E(R)	TGER/L450-500E(R)
			TGER/L100-200CR	TGER/L250-300CR	TGER/L150-200DR	—	TGER/L300DR	—	—
			TGER/L100-145D	TGER/L150-195D	TGER/L200-230E(R)	—	—	—	—
			TGER/L100E(R)	TGER/L150-195E(R)	—	—	—	—	—
			f(mm/r)						
P	Carbon Steel	60-140	0.03-0.08	0.03-0.08	0.04-0.09	0.04-0.09	0.05-0.12	0.05-0.12	0.05-0.12
	Alloy Steel	60-120	0.03-0.07	0.03-0.07	0.04-0.08	0.04-0.08	0.05-0.10	0.05-0.10	0.05-0.10
M	Stainless Steel	60-110	0.03-0.07	0.03-0.07	0.04-0.08	0.04-0.08	0.05-0.10	0.05-0.10	0.05-0.10
K	Cast Iron	60-100	0.03-0.08	0.03-0.08	0.04-0.09	0.04-0.09	0.05-0.12	0.05-0.12	0.05-0.12

ISO	Workpiece material	Vc(m/min)	Turning						
			TGER/L100-200C	TGER/L225-350C	TGER/L200-280D	TGER/L250-330E(R)	TGER/L300-400D	TGER/L350-430E(R)	TGER/L450-500E(R)
			TGER/L100-200CR	TGER/L250-300CR	TGER/L150-200DR	—	TGER/L300DR	—	—
			TGER/L100-145D	TGER/L150-195D	TGER/L200-230E(R)	—	—	—	—
			TGER/L100E(R)	TGER/L150-195E(R)	—	—	—	—	—
			f(mm/r)						
P	Carbon Steel	60-140	0.03-0.08	0.03-0.08	0.04-0.09	0.04-0.09	0.05-0.10	0.05-0.10	0.05-0.10
	Alloy Steel	60-120	0.03-0.10	0.03-0.10	0.04-0.08	0.04-0.08	0.05-0.10	0.05-0.10	0.05-0.10
M	Stainless Steel	60-110	0.03-0.10	0.03-0.10	0.04-0.08	0.04-0.08	0.05-0.10	0.05-0.10	0.05-0.10
K	Cast Iron	60-100	0.03-0.08	0.03-0.08	0.04-0.09	0.04-0.09	0.05-0.10	0.05-0.10	0.05-0.10

TGER...DM Series

ISO	Workpiece Material	Vc(m/min)	Grooving			Turning		
			TGER200DM	TGER250DM	TGER300-400DM	TGER200DM	TGER250DM	TGER300-400DM
			f(mm/r)			f(mm/r)		
P	Carbon Steel	60-160	0.03-0.10	0.04-0.12	0.05-0.12	0.03-0.10	0.04-0.10	0.05-0.10
	Alloy Steel	60-140	0.03-0.10	0.04-0.12	0.05-0.12	0.03-0.10	0.04-0.10	0.05-0.10
M	Stainless Steel	60-110	0.03-0.08	0.04-0.08	0.05-0.10	0.03-0.10	0.04-0.10	0.05-0.10
K	Cast Iron	60-100	0.03-0.10	0.04-0.12	0.05-0.12	0.03-0.10	0.04-0.10	0.05-0.10

Insert

External Toolholder

Internal Toolholder

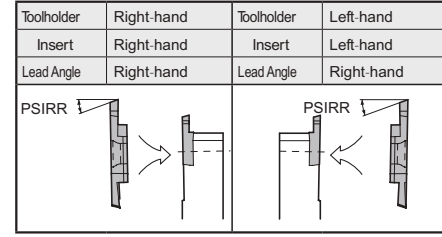
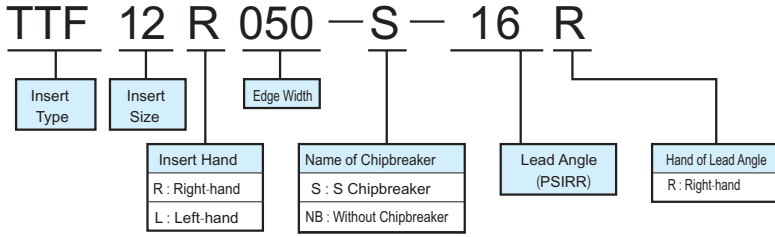
PSC Toolholder

Threading

Parting , Grooving

Miniature Tool

◆ Inserts Identification System



TTF Series Inserts for Parting-off

Model	IC(mm)	T (mm)	d (mm)	Material Recommended	Grade	TG1225
					Steel	P
				Stainless	M	●
				Cast Iron	K	●

● Good recommendation

Insert	Order No.		Dimensions (mm)				Toolholders
	Right hand	Left hand	W	α	Dmax	r	
	TTF12R050-S	TTF12L050-S	0.5	0	5	0.05	KTKFR/L1010K-12 KTKFR/L1212K-12 KTKFR/L1212M-12 KTKFR/L1616M-12 KTKFR/L2020M-12 KTKFR/L2525M-12
	TTF12R070-S	TTF12L070-S	0.7	0	8	0.05	
	TTF12R100-S	TTF12L100-S	1.0	0	12	0.08	
	TTF12R150-S	TTF12L150-S	1.5	0	12	0.08	
	TTF12R200-S	TTF12L200-S	2.0	0	12	0.08	
	TTF12R050-S-16R	TTF12L050-S-16R	0.5	16	5	0.05	
	TTF12R070-S-16R	TTF12L070-S-16R	0.7	16	8	0.05	
	TTF12R100-S-16R	TTF12L100-S-16R	1.0	16	12	0.08	
	TTF12R150-S-16R	TTF12L150-S-16R	1.5	16	12	0.08	
	TTF12R200-S-16R	TTF12L200-S-16R	2.0	16	12	0.08	
	TTF12R050-NB	TTF12L050-NB	0.5	0	5	0.05	KTKFR/L1010K-16 KTKFR/L1212K-16 KTKFR/L1212M-16 KTKFR/L1616M-16 KTKFR/L2020M-16 KTKFR/L2525M-16
	TTF12R070-NB	TTF12L070-NB	0.7	0	8	0.05	
	TTF12R100-NB	TTF12L100-NB	1.0	0	12	0.08	
	TTF12R150-NB	TTF12L150-NB	1.5	0	12	0.08	
	TTF12R200-NB	TTF12L200-NB	2.0	0	12	0.08	
	TTF12R050-NB-20R	TTF12L050-NB-20R	0.5	20	5	0.05	
	TTF12R070-NB-20R	TTF12L070-NB-20R	0.7	20	8	0.05	
	TTF12R100-NB-20R	TFK12L100-NB-20R	1.0	20	12	0.08	
	TTF12R150-NB-20R	TTF12L150-NB-20R	1.5	20	12	0.08	
	TTF12R200-NB-20R	TTF12L200-NB-20R	2.0	20	12	0.08	
	TTF16R100-S	TTF16L100-S	1.0	0	16	0.08	KTKFR/L1010K-16 KTKFR/L1212K-16 KTKFR/L1212M-16 KTKFR/L1616M-16 KTKFR/L2020M-16 KTKFR/L2525M-16
	TTF16R150-S	TTF16L150-S	1.5	0	16	0.10	
	TTF16R200-S	TTF16L200-S	2.0	0	16	0.10	
	TTF16R250-S	TTF16L250-S	2.5	0	16	0.10	
	TTF16R300-S	TTF16L300-S	3.0	0	16	0.15	
	TTF16R100-S-16R	TTF16L100-S-16R	1.0	16	16	0.08	
	TTF16R150-S-16R	TTF16L150-S-16R	1.5	16	16	0.10	
	TTF16R200-S-16R	TTF16L200-S-16R	2.0	16	16	0.10	
	TTF16R250-S-16R	TTF16L250-S-16R	2.5	16	16	0.10	
	TTF16R300-S-16R	TTF16L300-S-16R	3.0	16	16	0.15	

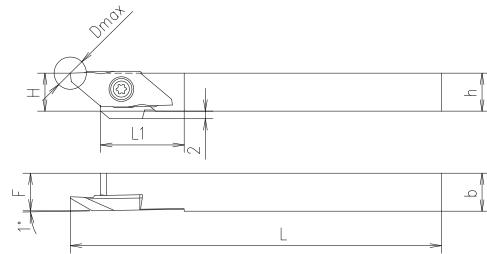
Right-hand Insert for Right-hand Toolholder
Left-hand Insert for Left-hand Toolholder

Model	IC (mm)	T (mm)	d (mm)	● Good recommendation			
				Material Recommended	Grade	TG1225	
TTF12**	8.7	3	5		Steel	P ●	
TTF16**	9.5	4	5		Stainless	M ●	
					Cast Iron	K ●	

Insert	Order No.		Dimensions (mm)				Toolholders
	Right hand	Left hand	W	α	Dmax	r	
	TTF16R100-NB	TTF16L100-NB	1.0	0	16	0.08	KTKFR/L1010K-16 KTKFR/L1212K-16 KTKFR/L1212M-16 KTKFR/L1616M-16 KTKFR/L2020M-16 KTKFR/L2525M-16
	TTF16R150-NB	TTF16L150-NB	1.5	0	16	0.10	
	TTF16R200-NB	TTF16L200-NB	2.0	0	16	0.10	
	TTF16R250-NB	TTF16L250-NB	2.5	0	16	0.10	
	TTF16R300-NB	TTF16L300-NB	3.0	0	16	0.15	
	TTF16R100-NB-20R	TTF16L100-NB-20R	1.0	20	16	0.08	
	TTF16R150-NB-20R	TTF16L150-NB-20R	1.5	20	16	0.10	
	TTF16R200-NB-20R	TTF16L200-NB-20R	2.0	20	16	0.10	
	TTF16R250-NB-20R	TTF16L250-NB-20R	2.5	20	16	0.10	
	TTF16R300-NB-20R	TTF16L300-NB-20R	3.0	20	16	0.15	

Right-hand Insert for Right-hand Toolholder
Left-hand Insert for Left-hand Toolholder

TTF Series Toolholders for Parting-off



Order No.	Insert	Dimensions (mm)							Insert Screw	Torx Key
		h	b	H	F	L	Dmax	L1		
KTKFR1010K-12	TTF12R**	10	10	10	10	125	12	15	L60M410	T15
KTKFR1212K-12		12	12	12	12					
KTKFR1212M-12		12	12	12	12					
KTKFR1616M-12		16	16	16	16	150		—		
KTKFR2020M-12		20	20	20	20					
KTKFR2525M-12		25	25	25	25					
KTKFR1010K-16	TTF16R**	10	10	10	10		125	16	20	L60M410
KTKFR1212K-16		12	12	12	12					
KTKFR1212M-16		12	12	12	12					
KTKFR1616M-16		16	16	16	16	150	—			
KTKFR2020M-16		20	20	20	20					
KTKFR2525M-16		25	25	25	25					
KTKFL1010K-12	TTF12L**	10	10	10	10		125	12	15	L60M410
KTKFL1212K-12		12	12	12	12					
KTKFL1212M-12		12	12	12	12					
KTKFL1616M-12		16	16	16	16	150	—			
KTKFL2020M-12		20	20	20	20					
KTKFL2525M-12		25	25	25	25					
KTKFL1010K-16	TTF16L**	10	10	10	10		125	16	20	L60M410
KTKFL1212K-16		12	12	12	12					
KTKFL1212M-16		12	12	12	12					
KTKFL1616M-16		16	16	16	16	150	—			
KTKFL2020M-16		20	20	20	20					
KTKFL2525M-16		25	25	25	25					

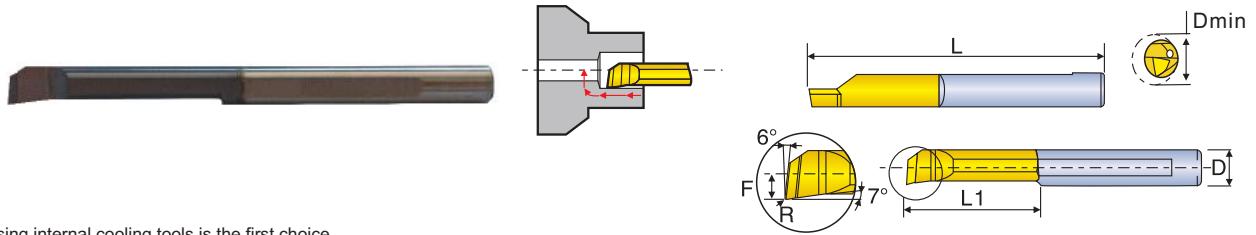
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting, Grooving
Miniature Tool

TTF Series Standard Cutting Conditions

ISO	Workpiece Material	Vc(m/min)	TTF12					TTF16				
			Edge Width (mm)					Edge Width (mm)				
			0.5	0.7	1.0	1.5	2.0	1.0	1.5	2.0	2.5	3.0
			f(mm/r)					f(mm/r)				
P	Carbon Steel	70-150	0.01-0.02	0.01-0.03	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.06	0.02-0.07	0.02-0.07	0.02-0.07	0.02-0.08
	Alloy Steel	70-150	0.01-0.02	0.01-0.03	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.06	0.02-0.07	0.02-0.07	0.02-0.07	0.02-0.08
M	Stainless Steel	60-120	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.03	0.01-0.04	0.01-0.04	0.01-0.04	0.01-0.05
K	Cast Iron	50-100	0.01-0.03	0.01-0.04	0.01-0.05	0.01-0.05	0.01-0.05	0.01-0.07	0.02-0.08	0.02-0.08	0.02-0.08	0.02-0.08

Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting , Grooving
Miniature Tool

MT SERIES
Solid Boring Bar for Boring

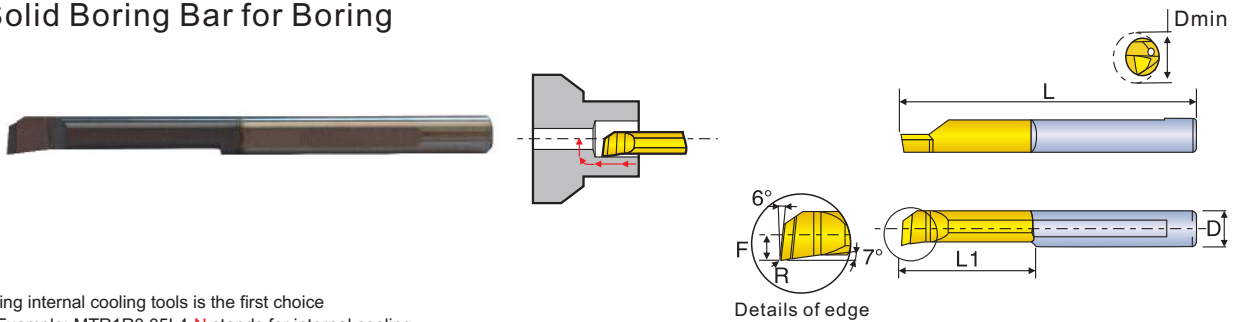


Using internal cooling tools is the first choice
★Example: MTR1R0.05L4-N stands for internal cooling

Details of edge

Order No.	Dimensions (mm)						Sleeve No.
	D	L	L1	R	F	Dmin	
MTR1R0.05L4	3	40	4	0.05	0.5	1.0	NC1603-100-2N
MTR1.5R0.1L6	3	40	6	0.10	0.7	1.5	
MTR2R0.05L10	3	40	10	0.05	0.8	2.1	
MTR2R0.15L5	3	40	5	0.15	0.8	2.1	
MTR2R0.15L10	3	40	10	0.15	0.8	2.1	
MTR2R0.15L15	3	40	15	0.15	0.8	2.1	
MTR2R0.15L20	3	40	20	0.15	0.8	2.1	
MTR3R0.05L10	3	40	10	0.05	1.3	3.1	
MTR3R0.05L15	3	40	15	0.05	1.3	3.1	
MTR3R0.1L10	3	40	10	0.10	1.3	3.1	
MTR3R0.1L15	3	40	15	0.10	1.3	3.1	
MTR3R0.2L10	3	40	10	0.20	1.3	3.1	
MTR3R0.2L15	3	40	15	0.20	1.3	3.1	
MTR3R0.2L20	3	40	20	0.20	1.3	3.1	
MTR4R0.05L15	4	50	15	0.05	1.7	4.1	
MTR4R0.1L15	4	50	15	0.10	1.7	4.1	
MTR4R0.1L22	4	50	22	0.10	1.7	4.1	
MTR4R0.2L10	4	50	10	0.20	1.7	4.1	
MTR4R0.2L15	4	50	15	0.20	1.7	4.1	
MTR4R0.2L22	4	50	22	0.20	1.7	4.1	
MTR4R0.2L30	4	65	30	0.20	1.7	4.1	NC. .05-100-2N
MTR5R0.05L15	5	50	15	0.05	2.1	5.1	
MTR5R0.1L22	5	50	22	0.10	2.1	5.1	
MTR5R0.2L10	5	50	10	0.20	2.1	5.1	
MTR5R0.2L15	5	50	15	0.20	2.1	5.1	
MTR5R0.2L22	5	50	22	0.20	2.1	5.1	
MTR5R0.2L30	5	65	30	0.20	2.1	5.1	
MTR5R0.2L35	5	65	35	0.20	2.1	5.1	

MT SERIES Solid Boring Bar for Boring



Using internal cooling tools is the first choice
★Example: MTR1R0.05L4-N stands for internal cooling

Order No.	Dimensions (mm)						Sleeve No.
	D	L	L1	R	F	Dmin	
MTR6R0.05L15	6	50	15	0.05	2.8	6.1	NC..06-100-2N
MTR6R0.1L22	6	50	22	0.10	2.8	6.1	
MTR6R0.2L15	6	50	15	0.20	2.8	6.1	
MTR6R0.2L22	6	50	22	0.20	2.8	6.1	
MTR6R0.2L30	6	65	30	0.20	2.8	6.1	
MTR6R0.2L40	6	65	40	0.20	2.8	6.1	
MTR7R0.2L30	7	65	30	0.20	3.3	7.1	NC..07-100-2N
MTR7R0.2L35	7	65	35	0.20	3.3	7.1	
MTR7R0.2L42	7	80	42	0.20	3.3	7.1	
MTR7R0.2L49	7	80	49	0.20	3.3	7.1	
MTR8R0.2L40	8	80	40	0.20	3.8	8.1	NC..08-100-2N
MTR10R0.2L35	10	65	35	0.20	4.8	10.1	NC2010-100-2N
MTR10R0.2L50	10	80	50	0.20	4.8	10.1	
MTL2R0.15L10	3	40	10	0.15	0.8	2.1	NC1603-100-2N
MTL3R0.2L15	3	40	15	0.20	1.3	3.1	
MTL4R0.2L22	4	50	22	0.20	1.7	4.1	NC..04-100-2N
MTL5R0.2L22	5	50	22	0.20	2.1	5.1	NC..05-100-2N
MTL6R0.2L22	6	50	22	0.20	2.8	6.1	NC..06-100-2N
MTL7R0.2L30	7	65	30	0.20	3.3	7.1	NC..07-100-2N

Insert

External Toolholder

Internal Toolholder

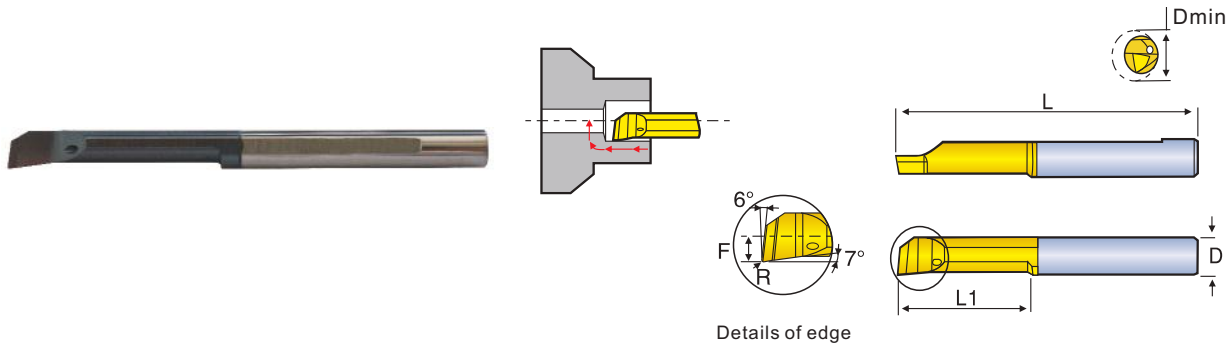
PSC Toolholder

Threading

Parting, Grooving

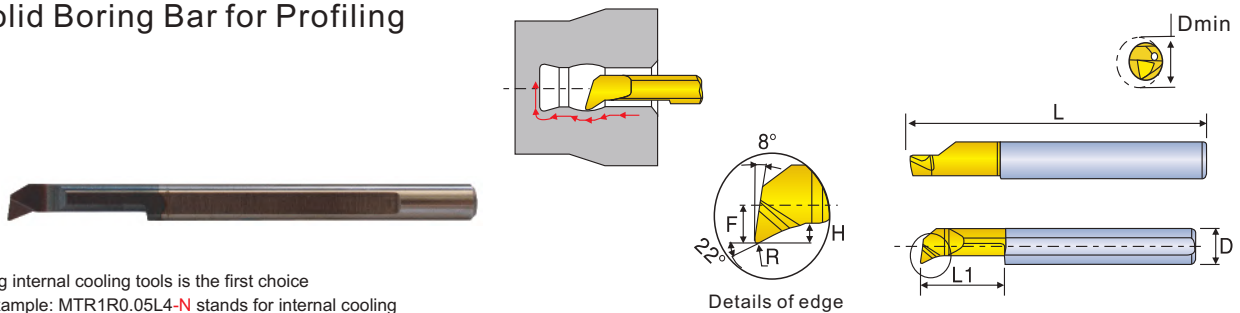
Miniature Tool

MTR SERIES
Solid Boring Bar for Boring (Internal Coolant)



Order No.	Dimensions (mm)						Sleeve No.
	D	L	L1	R	F	Dmin	
MTR4R0. 2L15-N	4	50	15	0.2	1.7	4.1	NC. . 04-100-2N
MTR4R0. 2L22-N	4	50	22	0.2	1.7	4.1	
MTR5R0. 2L15-N	5	50	15	0.2	2.1	5.1	NC. . 05-100-2N
MTR5R0. 2L22-N	5	50	22	0.2	2.1	5.1	
MTR6R0. 2L22-N	6	50	22	0.2	2.8	6.1	NC. . 06-100-2N

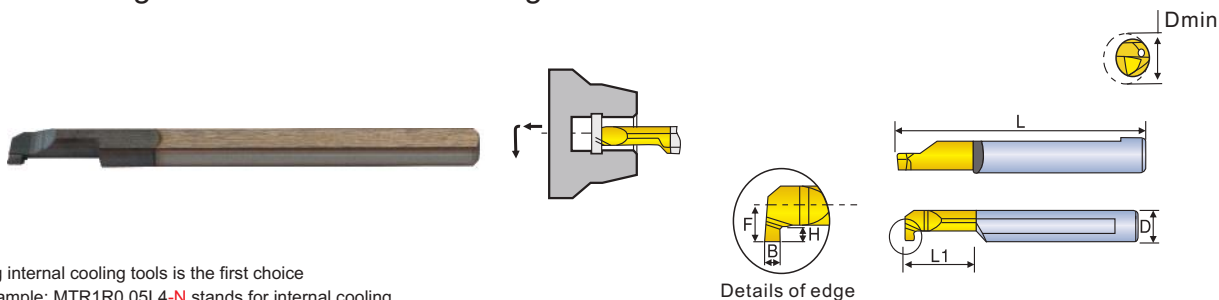
MPR SERIES
Solid Boring Bar for Profiling



Using internal cooling tools is the first choice
★Example: MTR1R0.05L4-N stands for internal cooling

Order No.	Dimensions (mm)							Sleeve No.
	D	L	L1	R	H	F	Dmin	
MPR1R0. 05L4	3	40	4	0.05	0.2	0.5	1.0	NC1603-100-2N
MPR1. 5R0. 1L6	3	40	6	0.10	0.3	0.7	1.5	
MPR2R0. 15L10	3	40	10	0.15	0.5	0.8	2.1	
MPR3R0. 2L10	3	40	10	0.20	0.7	1.3	3.1	
MPR3R0. 2L15	3	40	15	0.20	0.7	1.3	3.1	
MPR4R0. 2L15	4	50	15	0.20	0.8	1.7	4.1	NC. . 04-100-2N
MPR4R0. 2L22	4	50	22	0.20	0.8	1.7	4.1	
MPR5R0. 2L22	5	50	22	0.20	1.2	2.1	5.1	NC. . 05-100-2N
MPR5R0. 2L30	5	65	30	0.20	1.2	2.1	5.1	
MPR6R0. 2L22	6	50	22	0.20	1.4	2.8	6.1	NC. . 06-100-2N
MPR6R0. 2L30	6	65	30	0.20	1.4	2.8	6.1	

MG SERIES Solid Boring Bar for Internal Grooving

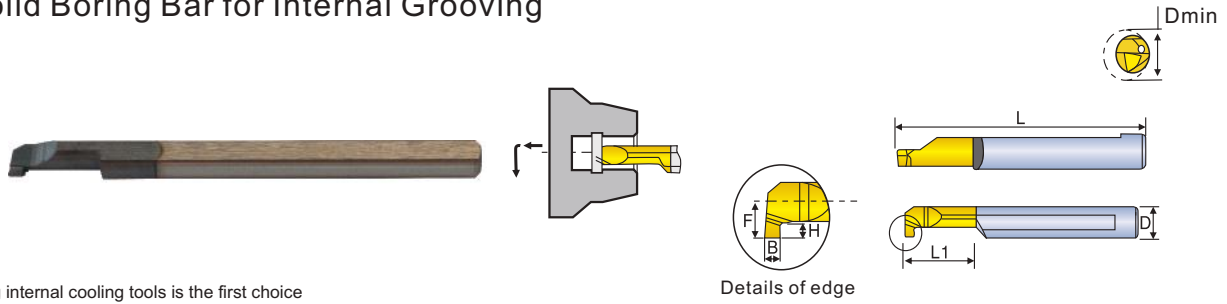


Using internal cooling tools is the first choice
★Example: MTR1R0.05L4-N stands for internal cooling

Order No.	Dimensions (mm)							Sleeve No.
	B	H	D	L	L1	F	Dmin	
MGR2B0. 5L6	0.5	0.4	3	40	6	0.8	2.1	NC1603-100-2N
MGR3B0. 5L10	0.5	0.5	3	40	10	1.3	3.1	
MGR3B0. 7L10	0.7	0.6	3	40	10	1.3	3.1	
MGR3B1. 0L10	1.0	0.7	3	40	10	1.3	3.1	
MGR4B1. 0L10	1.0	1.0	4	50	10	1.7	4.1	NC. . 04-100-2N
MGR4B1. 5L10	1.5	1.0	4	50	10	1.7	4.1	
MGR4B1. 0L15	1.0	1.0	4	50	15	1.7	4.1	
MGR4B1. 5L15	1.5	1.0	4	50	15	1.7	4.1	
MGR5B1. 0L15	1.0	1.2	5	50	15	2.3	5.1	NC. . 05-100-2N
MGR5B1. 5L15	1.5	1.2	5	50	15	2.3	5.1	
MGR5B2. 0L15	2.0	1.2	5	50	15	2.3	5.1	
MGR5B1. 0L22	1.0	1.2	5	50	22	2.3	5.1	
MGR5B1. 5L22	1.5	1.2	5	50	22	2.3	5.1	
MGR5B2. 0L22	2.0	1.2	5	50	22	2.3	5.1	
MGR6B1. 0L15	1.0	1.8	6	50	15	2.8	6.1	NC. . 06-100-2N
MGR6B1. 5L15	1.5	1.8	6	50	15	2.8	6.1	
MGR6B2. 0L15	2.0	1.8	6	50	15	2.8	6.1	
MGR6B1. 0L22	1.0	1.8	6	50	22	2.8	6.1	
MGR6B1. 5L22	1.5	1.8	6	50	22	2.8	6.1	
MGR6B2. 0L22	2.0	1.8	6	50	22	2.8	6.1	
MGR6B1. 0L30	1.0	1.8	6	65	30	2.8	6.1	
MGR6B1. 5L30	1.5	1.8	6	65	30	2.8	6.1	
MGR6B2. 0L30	2.0	1.8	6	65	30	2.8	6.1	
MGR6B1. 0L17-2.0	1.0	2.0	6	50	17	2.8	6.1	
MGR6B1. 5L17-2.0	1.5	2.0	6	50	17	2.8	6.1	
MGR6B2. 0L17-2.0	2.0	2.0	6	50	17	2.8	6.1	



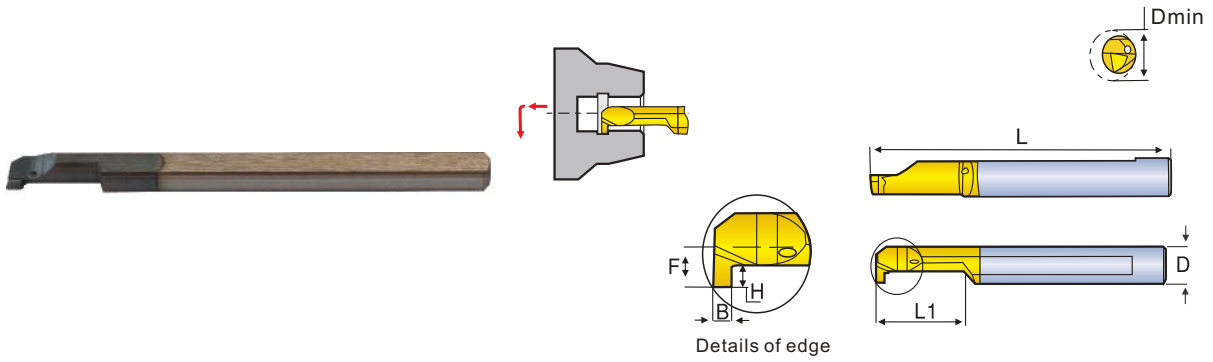
MG SERIES Solid Boring Bar for Internal Grooving



Using internal cooling tools is the first choice
★Example: MTR1R0.05L4-N stands for internal cooling

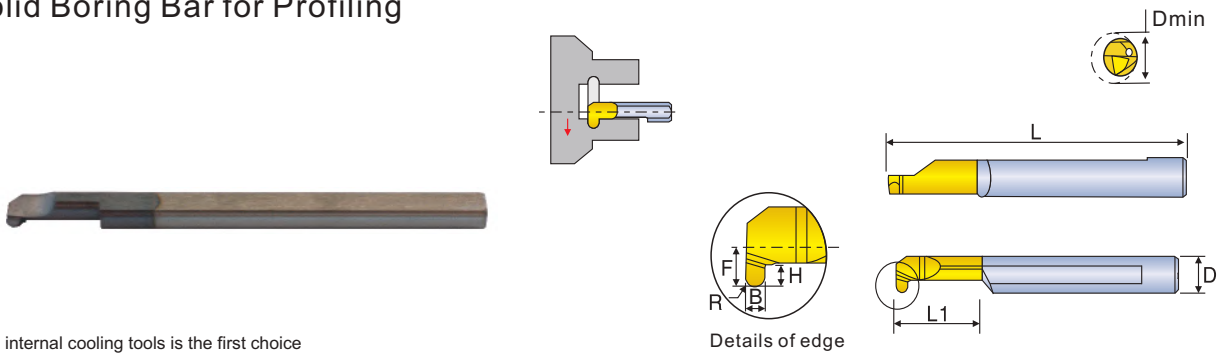
Order No.	Dimensions (mm)							Sleeve No.
	B	H	D	L	L1	F	Dmin	
MGR7B1. 0L22	1.0	2.5	7	65	22	3.3	7.1	NC..07-100-2N
MGR7B1. 5L22	1.5	2.5	7	65	22	3.3	7.1	
MGR7B2. 0L22	2.0	2.5	7	65	22	3.3	7.1	
MGR7B1. 0L30	1.0	2.5	7	65	30	3.3	7.1	
MGR7B1. 5L30	1.5	2.5	7	65	30	3.3	7.1	
MGR7B2. 0L30	2.0	2.5	7	65	30	3.3	7.1	
MGR8B1. 0L22	1.0	2.6	8	65	22	3.8	8.1	NC..08-100-2N
MGR8B1. 5L22	1.5	2.6	8	65	22	3.8	8.1	
MGR8B2. 0L22	2.0	2.6	8	65	22	3.8	8.1	
MGR8B1. 5L22X	1.5	3.1	8	65	22	3.8	8.1	
MGR8B2. 0L22X	2.0	3.1	8	65	22	3.8	8.1	
MGR8B2. 0L30X	2.0	3.1	8	65	30	3.8	8.1	
MGR8B2. 0L40X	2.0	3.1	8	80	40	3.8	8.1	NC1603-100-2N
MGL3B0. 7L10	0.7	0.6	3	40	10	1.3	3.1	
MGL4B1. 5L10	1.5	1.0	4	50	10	1.7	4.1	NC..04-100-2N
MGL5B2. 0L15	2.0	1.2	5	50	15	2.3	5.1	NC..05-100-2N
MGL6B2. 0L15	2.0	1.8	6	50	15	2.8	6.1	NC..06-100-2N
MGL6B2. 0L22	2.0	1.8	6	50	22	2.3	6.1	
MGL7B2. 0L30	2.0	2.5	7	65	30	2.8	7.1	NC..07-100-2N

MGR SERIES
Solid Boring Bar for Internal Grooving (Internal Coolant)



Order No.	Dimensions (mm)							Sleeve No.
	B	H	D	L	L1	F	Dmin	
MGR4B1.0L10-N	1.0	1.0	4	50	10	1.7	4.1	NC..04-100-2N
MGR4B1.5L10-N	1.5	1.0	4	50	10	1.7	4.1	
MGR5B1.0L15-N	1.0	1.2	5	50	15	2.3	5.1	NC..05-100-2N
MGR5B1.5L15-N	1.5	1.2	5	50	15	2.3	5.1	
MGR5B2.0L15-N	2.0	1.2	5	50	15	2.3	5.1	NC..06-100-2N
MGR6B1.0L15-N	1.0	1.4	6	50	15	2.8	6.1	
MGR6B1.5L15-N	1.5	1.4	6	50	15	2.8	6.1	
MGR6B2.0L15-N	2.0	1.4	6	50	15	2.8	6.1	

MKR SERIES
Solid Boring Bar for Profiling

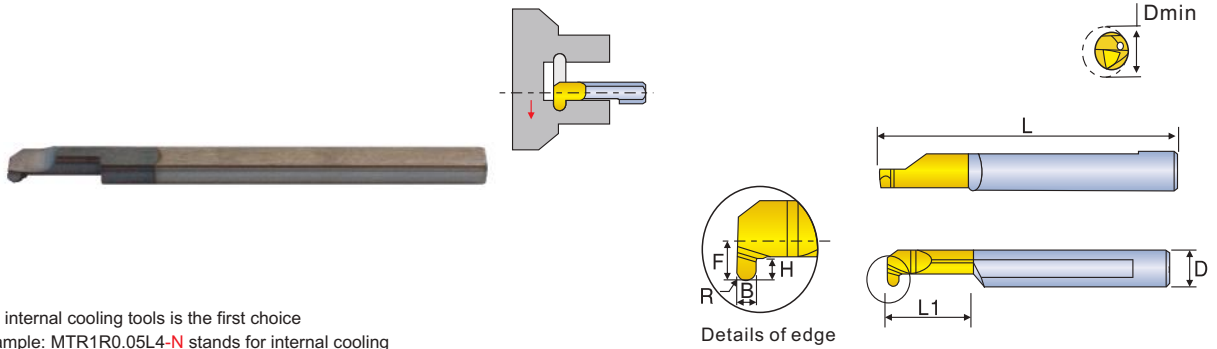


Using internal cooling tools is the first choice
★Example: MTR1R0.05L4-N stands for internal cooling

Order No.	Dimensions (mm)								Sleeve No.
	B	R	H	D	L	L1	F	Dmin	
MKR4R0.5L10	1.0	0.50	1.0	4	50	10	1.7	4.1	NC..04-100-2N
MKR4R0.75L10	1.5	0.75	1.0	4	50	10	1.7	4.1	

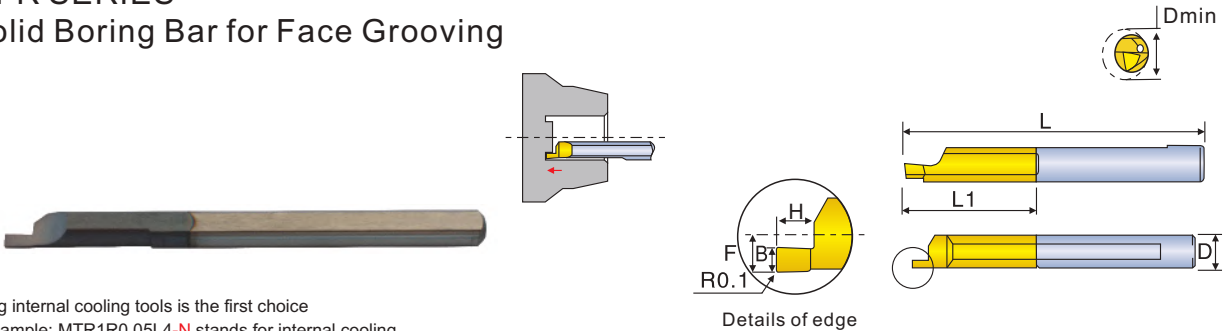
Insert
External Toolholder
Internal Toolholder
PSC Toolholder
Threading
Parting / Grooving
Miniature Tool

MKR SERIES Solid Boring Bar for Profiling



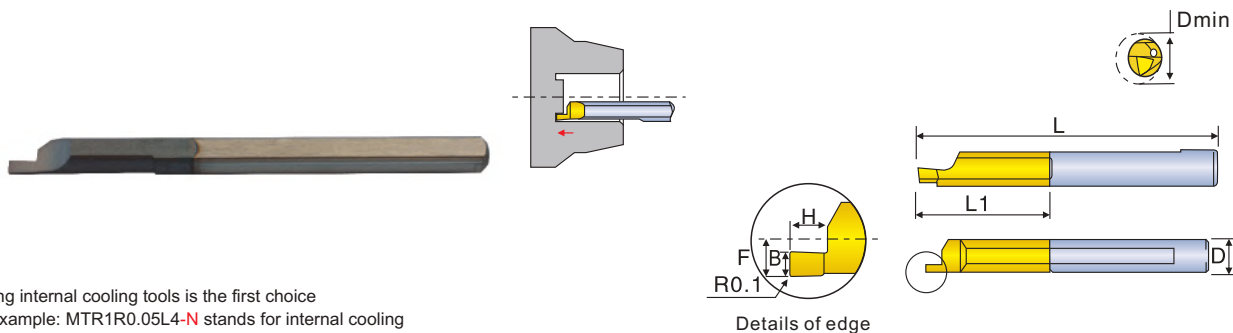
Order No.	Dimensions (mm)								Sleeve No.
	B	R	H	D	L	L1	F	Dmin	
MKR5R0.5L15	1.0	0.50	1.2	5	50	15	2.3	5.1	NC. .05-100-2N
MKR5R0.75L15	1.5	0.75	1.2	5	50	15	2.3	5.1	
MKR5R1.0L15	2.0	1.00	1.2	5	50	15	2.3	5.1	NC. .06-100-2N
MKR6R0.5L15	1.0	0.50	1.6	6	50	15	2.8	6.1	
MKR6R0.75L15	1.5	0.75	1.6	6	50	15	2.8	6.1	
MKR6R1.0L15	2.0	1.00	1.6	6	50	15	2.8	6.1	

MFR SERIES Solid Boring Bar for Face Grooving



Order No.	Dimensions (mm)							Sleeve No.
	B	H	D	L	L1	F	Dmin	
MFR4B1.0L15	1.0	1.5	4	50	15	1.95	5	NC. .04-100-2N
MFR4B1.5L15	1.5	2.8	4	50	15	1.95	5	
MFR5B1.0L22	1.0	1.5	5	50	22	2.45	6	NC. .05-100-2N
MFR5B1.5L22	1.5	2.5	5	50	22	2.45	6	
MFR5B2.0L22	2.0	3.8	5	50	22	2.45	6	

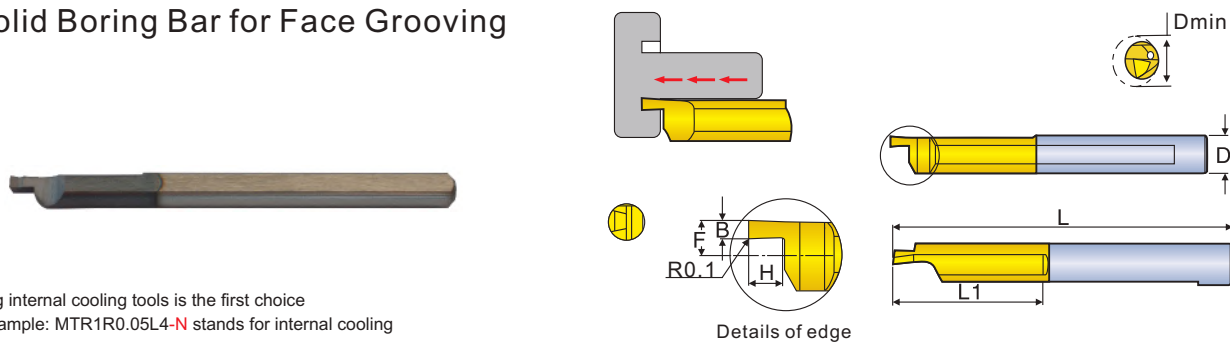
MFR SERIES Solid Boring Bar for Face Grooving



Using internal cooling tools is the first choice
★Example: MTR1R0.05L4-N stands for internal cooling

Order No.	Dimensions (mm)							Sleeve No.
	B	H	D	L	L1	F	Dmin	
MFR6B1. 0L22	1.0	1.5	6	50	22	2.95	8	NC. . 06-100-2N
MFR6B1. 5L22	1.5	2.5	6	50	22	2.95	8	
MFR6B2. 0L22	2.0	3.0	6	50	22	2.95	8	
MFR6B3. 0L30	3.0	6.0	6	65	30	2.95	8	

MFL SERIES Solid Boring Bar for Face Grooving

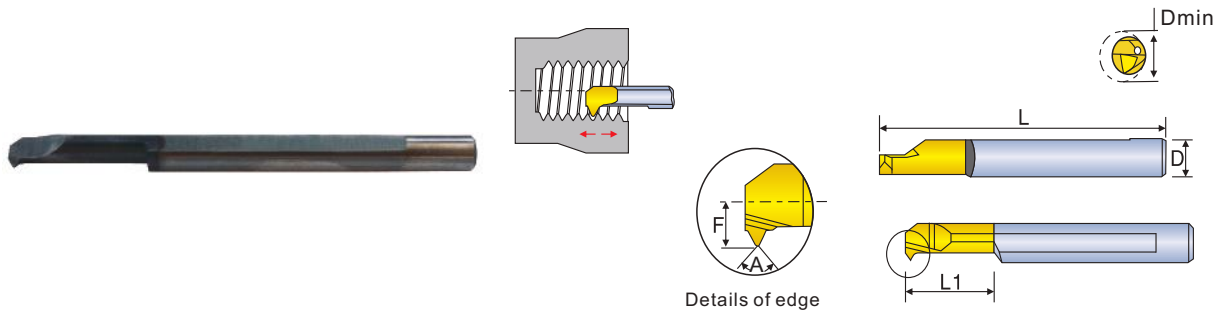


Using internal cooling tools is the first choice
★Example: MTR1R0.05L4-N stands for internal cooling

Order No.	Dimensions (mm)							Sleeve No.
	B	H	D	L	L1	F	Dmin	
MFL4B1. 0L15	1.0	1.5	4	50	15	1.75	5	NC. . 04-100-2N
MFL4B1. 5L15	1.5	2.8	4	50	15	1.75	5	
MFL5B1. 0L22	1.0	1.5	5	50	22	2.25	6	NC. . 05-100-2N
MFL5B1. 5L22	1.5	2.5	5	50	22	2.25	6	
MFL5B2. 0L22	2.0	3.8	5	50	22	2.25	6	NC. . 06-100-2N
MFL6B1. 0L22	1.0	1.5	6	50	22	2.75	8	
MFL6B1. 5L22	1.5	2.5	6	50	22	2.75	8	
MFL6B2. 0L22	2.0	3.0	6	50	22	2.75	8	
MFL6B3. 0L30	3.0	6.0	6	65	30	2.75	8	



MI SERIES Solid Boring Bar for Threading

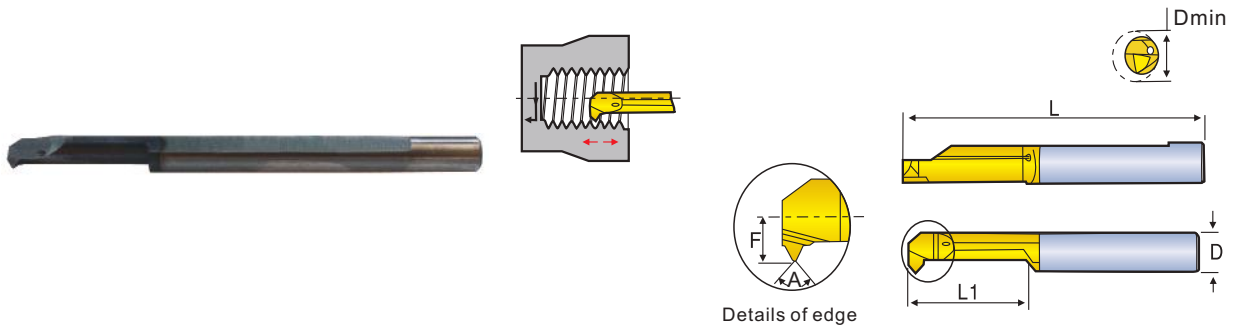


Using internal cooling tools is the first choice

★Example: MTR1R0.05L4-N stands for internal cooling

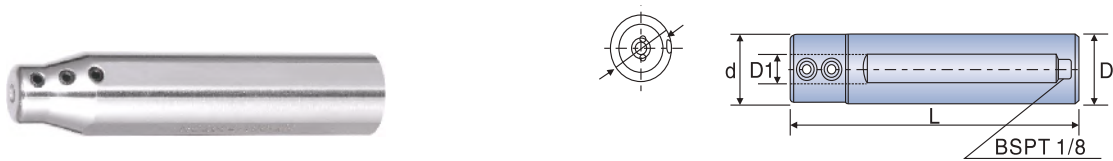
Order No.	Dimensions (mm)								Sleeve No.
	D	L	L1	Thread angle	Pitch		F	Dmin	
				A	mm	TPI			
MIR2L8A60	3	40	8	60	0.45-0.70	56-32	1.0	2.1	NC1603-100-2N
MIR3L15A60	3	40	15	60	0.50-1.00	48-24	1.4	3.2	
MIR4L15A60	4	50	15	60	0.50-1.00	48-24	1.8	4.1	NC..04-100-2N
MIR5L15A60	5	50	15	60	0.50-1.25	48-20	2.3	5.1	NC..05-100-2N
MIR5L22A60	5	50	22	60	1.00-1.25	24-20	2.3	5.1	
MIR6L15A60	6	50	15	60	0.50-1.50	48-16	2.6	6.0	NC..06-100-2N
MIR6L22A60	6	50	22	60	0.50-1.50	48-16	2.6	6.0	
MIR8L22A60	8	65	22	60	1.00-2.00	24-13	3.6	8.0	NC..08-100-2N
MIR3L15A55	3	40	15	55	0.50-1.00	48-24	1.4	3.2	NC1603-100-2N
MIR4L15A55	4	50	15	55	0.50-1.00	48-24	1.8	4.1	NC..04-100-2N
MIR5L15A55	5	50	15	55	0.50-1.25	48-20	2.3	5.1	NC..05-100-2N
MIR6L15A55	6	50	15	55	0.50-1.50	48-16	2.6	6.0	NC..06-100-2N
MIL3L15A60	3	40	15	60	0.50-1.00	32-24	1.4	3.2	NC1603-100-2N
MIL4L15A60	4	50	15	60	0.50-1.00	48-24	1.8	4.1	NC..04-100-2N
MIL5L15A60	5	50	15	60	0.50-1.25	48-20	2.3	5.1	NC..05-100-2N
MIL6L15A60	6	50	15	60	0.50-1.50	48-16	2.6	6.0	NC..06-100-2N
MIL3L15A55	3	40	15	55	0.50-1.00	48-24	1.4	3.2	NC1603-100-2N
MIL4L15A55	4	50	15	55	0.50-1.00	48-24	1.8	4.1	NC..04-100-2N
MIL5L15A55	5	50	15	55	0.50-1.25	48-20	2.3	5.1	NC..05-100-2N
MIL6L15A55	6	50	15	55	0.50-1.50	48-16	2.6	6.0	NC..06-100-2N

MIR SERIES
Solid Boring Bar for Threading (Internal Coolant)



Order No.	Dimensions (mm)								Sleeve No.
	D	L	L1	Thread angle	Pitch		F	Dmin	
				A	mm	TPI			
MIR4L15A60-N	4	50	15	60	0.80-1.00	32-24	1.8	4.1	NC..04-100-2N
MIR5L15A60-N	5	50	15	60	1.00-1.25	24-20	2.3	5.1	NC..05-100-2N
MIR6L15A60-N	6	50	15	60	1.00-1.50	24-16	2.6	6.0	NC..06-100-2N
MIR6L22A60-N	6	50	22	60	1.00-1.50	24-16	2.6	6.0	

Sleeve for Coolant Supply



Order No.	Dimensions (mm)				Wrench	Screw
	D1	L	D	d		
NC1603-100-2N	3	100	16	12.0	WT15	S34
NC1604-100-2N	4	100	16	13.0	WT20	S44
NC1605-100-2N	5	100	16	14.7	WT25	S44
NC1606-100-2N	6	100	16	15.0	WT25	S54
NC1608-100-2N	8	100	16	15.7	WT30	S66
NC2004-100-2N	4	100	20	13.0	WT20	S44
NC2005-100-2N	5	100	20	16.0	WT25	S44
NC2006-100-2N	6	100	20	17.0	WT30	S55
NC2007-100-2N	7	100	20	17.5	WT30	S66
NC2008-100-2N	8	100	20	19.0	WT30	S66
NC2010-100-2N	10	100	20	19.7	WT30	S66
NC2012-100-2N	12	100	20	19.7	WT30	S66



Standard Cutting Conditions of Boring

ISO	Workpiece material		Vc (m/min)	f (mm/r)
P	Non-Alloy steel	<0.25%C	50-120	0.05
		0.25%C- 0.55%C	40-100	0.04
		≥0.55%C	30-80	0.03
	Low Alloy Steel		30-70	0.04
	High Alloy Steel		25-50	0.03
M	Martensitic Stainless Steel		40-100	0.04
	Austenitic Stainless Steel		40-90	0.04
K	Grey Cast Iron		40-70	0.02
	Ductile Cast Iron		50-80	0.02
N	Cast Aluminum Alloy		100-300	0.03
	Aluminum Alloy		60-150	0.03
	Copper Alloy		100-150	0.03
S	Heat-resistance Alloy		10-45	0.02
	Titanium Alloy		40-60	0.02
H	Hardened Alloy	45-50 HRC	20-40	0.01
		51-55 HRC	20-35	0.01

Standard Cutting Conditions of Grooving

ISO	Workpiece material		Vc (m/min)	f (mm/r)
P	Non-Alloy steel	<0.25%C	50-120	0.03
		0.25%C- 0.55%C	40-100	0.02
		≥0.55%C	30-80	0.01
	Low Alloy Steel		30-70	0.02
	High Alloy Steel		25-50	0.01
M	Martensitic Stainless Steel		40-100	0.01
	Austenitic Stainless Steel		40-90	0.01
K	Grey Cast Iron		40-70	0.02
	Ductile Cast Iron		50-80	0.01
N	Cast Aluminum Alloy		100-300	0.03
	Aluminum Alloy		60-150	0.03
	Copper Alloy		100-150	0.03
S	Heat-resistance Alloy		10-45	0.01
	Titanium Alloy		40-60	0.01
H	Hardened Alloy	45-50 HRC	20-40	0.01
		51-55 HRC	20-35	0.01

Standard Cutting Conditions of Threading

ISO	Workpiece material		Vc(m/min)
P	Non-Alloy steel	<0.25%C	50-120
		0.25%C- 0.55%C	40-100
		≥0.55%C	30-80
	Low Alloy Steel		30-70
	High Alloy Steel		25-50
M	Martensitic Stainless Steel		40-100
	Austenitic Stainless Steel		40-90
K	Grey Cast Iron		40-70
	Ductile Cast Iron		50-80
N	Cast Aluminum Alloy		100-300
	Aluminum Alloy		60-150
	Copper Alloy		100-150
S	Heat-resistance Alloy		10-45
	Titanium Alloy		40-60
H	Hardened Alloy	45-50 HRC	20-40
		51-55 HRC	20-35

Standard Cutting Conditions of Face Grooving

ISO	Workpiece material		Vc(m/min)	f(mm/r)
P	Non-Alloy steel	<0.25%C	40-140	0.01-0.05
		0.25%C- 0.55%C		
		≥0.55%C		
	Low Alloy Steel			
	High Alloy Steel			
M	Martensitic Stainless Steel		40-140	0.01-0.05
	Austenitic Stainless Steel			
K	Grey Cast Iron		30-130	0.01-0.05
	Ductile Cast Iron			
N	Cast Aluminum Alloy		90-120	0.01-0.05
	Aluminum Alloy			
	Copper Alloy			
S	Heat-resistance Alloy		30-100	0.01-0.05
	Titanium Alloy			

Insert

External Toolholder

Internal Toolholder

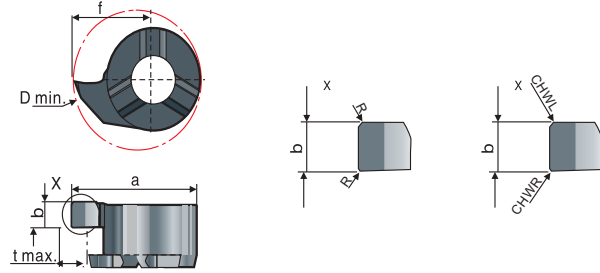
PSC Toolholder

Threading

Parting Grooving

Miniature Tool

Modular Small Hole Cutter for Inserts



Order No.	Dimensions(mm)							
	W	Tmax	a	f	R	CHWL	CHWR	Dmin
MB-05GR075-1.4D07	0.75	1.4	6.8	4.3	—	0.04	0.04	7.0
MB-05GR100-1.4D07	1.00	1.4	6.8	4.3	—	0.04	0.04	7.0
MB-05GR150-1.4D07	1.50	1.4	6.8	4.3	0.10	—	—	7.0
MB-05GR200-1.4D07	2.00	1.4	6.8	4.3	0.20	—	—	7.0
MB-05GR100-2.3D08	1.00	2.3	7.7	5.2	—	0.04	0.04	8.0
MB-05GR150-2.3D08	1.50	2.3	7.7	5.2	0.10	—	—	8.0
MB-05GR200-2.3D08	2.00	2.3	7.7	5.2	0.20	—	—	8.0
MB-05GR100-2.8D09	1.00	2.8	8.3	5.8	—	0.04	0.04	8.8
MB-05GR150-2.8D09	1.50	2.8	8.3	5.8	0.10	—	—	8.8
MB-05GR200-2.8D09	2.00	2.8	8.3	5.8	0.20	—	—	8.8
MB-07GR075-2.0D10	0.75	2.0	9.5	6.0	—	0.04	0.04	10.0
MB-07GR100-2.0D10	1.00	2.0	9.5	6.0	—	0.04	0.04	10.0
MB-07GR150-2.0D10	1.50	2.0	9.5	6.0	0.10	—	—	10.0
MB-07GR200-2.0D10	2.00	2.0	9.5	6.0	0.20	—	—	10.0
MB-07GR300-2.0D10	3.00	2.0	9.5	6.0	0.20	—	—	10.0
MB-07GR100-3.0D11	1.00	3.0	10.5	7.0	—	0.04	0.04	11.0
MB-07GR150-3.0D11	1.50	3.0	10.5	7.0	0.10	—	—	11.0
MB-07GR200-3.0D11	2.00	3.0	10.5	7.0	0.20	—	—	11.0
MB-07GR300-3.0D11	3.00	3.0	10.5	7.0	0.20	—	—	11.0
MB-07GR100-3.5D12	1.00	3.5	11.5	7.5	—	0.04	0.04	12.0
MB-09GR150-4.0D14	1.50	4.0	13.5	9.0	0.10	—	—	14.0
MB-09GR200-4.0D14	2.00	4.0	13.5	9.0	0.20	—	—	14.0
MB-09GR250-4.0D14	2.50	4.0	13.5	9.0	0.20	—	—	14.0
MB-09GR150-5.5D16	1.50	5.5	15.0	10.3	0.10	—	—	16.0
MB-09GR200-5.5D16	2.00	5.5	15.0	10.5	0.20	—	—	16.0
MB-09GR250-5.5D16	2.50	5.5	15.0	10.5	0.20	—	—	16.0
MB-09GR300-5.5D16	3.00	5.5	15.0	10.5	0.20	—	—	16.0
MB-09GR150-6.5D17	1.50	6.5	16.0	11.5	0.10	—	—	17.0
MB-09GR200-6.5D17	2.00	6.5	16.0	11.5	0.20	—	—	17.0
MB-09GR250-6.5D17	2.50	6.5	16.0	11.5	0.20	—	—	17.0
MB-09GR300-6.5D17	3.00	6.5	16.0	11.5	0.20	—	—	17.0

MG SERIES
Modular Small Hole Cutter for Toolholders

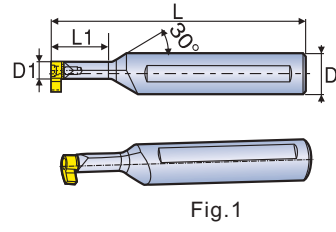


Fig.1

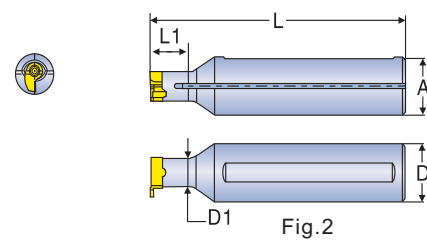


Fig.2

Order No.	D	D1	L1	L	A	Insert	Wrench	Screw	Fig.
MG-H12-18-05ST	12	5	18	80	11.6	MB-05..	WC06	CSTB22	1
MG-H16-20-07R	16	7	20	120	15.0	MB-07..	WC10	CSTB30	2
MG-H16-30-09R	16	9	30	120	15.0	MB-09..	WC15	CSTB40	2

Standard Cutting Conditions

ISO	Workpiece material		Vc(m/min)	f(mm/r)
P	Non-Alloy steel	<0.25%C	40-180	0.30-0.50
		0.25%C- 0.55%C	40-170	0.30-0.50
		≥ 0.55%C	40-160	0.25-0.35
	Low Alloy Steel		40-190	0.25-0.45
	High Alloy Steel		40-115	0.18-0.30
M	Martensitic Stainless Steel		40-100	0.20-0.35
	Austenitic Stainless Steel		40-90	0.15-0.35
K	Grey Cast Iron		40-70	0.20-0.35
	Ductile Cast Iron		50-80	0.15-0.30
N	Cast Aluminum Alloy		100-300	0.50-1.00
	Aluminum Alloy		60-150	0.50-0.90
	Copper Alloy		100-150	0.50-0.90
S	Heat-resistance Alloy		10-45	0.10-0.20
	Titanium Alloy		40-60	0.10-0.20

Basic size step(mm)		Tolerance zone class of hole (µm)																																					
>	≤	B10	C9	C10	D8	D9	D10	E7	E8	E9	F6	F7	F8	G6	G7	H6	H7	H8	H9	H10	JS6	JS7	K6	K7	M6	M7	N6	N7	P6	P7	R7	S7	T7	U7	X7				
-	3	+180 +140	+85 +60	+100 +60	+34 +20	+45 +20	+60 +20	+24 +14	+28 +14	+39 +14	+12 +6	+16 +6	+20 +6	+8 +2	+12 +2	+6 0	+10 0	+14 0	+25 0	+40 0	±3	±5	0 -6	0 -10	-2 -8	-2 -12	-4 -10	-4 -14	-6 -12	-6 -16	-10 -20	-14 -24	-	-18 -28	-20 -30				
3	6	+188 +140	+100 +70	+118 +70	+48 +30	+60 +30	+78 +20	+32 +20	+38 +20	+50 +20	+18 +10	+22 +10	+28 +10	+12 +4	+16 +4	+8 0	+12 0	+18 0	+30 0	+48 0	±4	±6	+2 -6	+3 -9	-1 -9	0 -12	-5 -13	-4 -16	-9 -17	-8 -20	-11 -23	-15 -27	-	-19 -31	-24 -36				
6	10	+208 +150	+116 +80	+138 +80	+62 +40	+76 +40	+98 +40	+40 +25	+47 +25	+61 +25	+22 +13	+28 +13	+35 +13	+14 +5	+20 +5	+9 0	+15 0	+22 0	+36 0	+58 0	±4.5	±7	+2 -7	+5 -10	-3 -12	0 -15	-7 -16	-4 -19	-12 -21	-9 -24	-13 -28	-17 -32	-	-22 -37	-28 -43				
10	14	+220 +150	+138 +95	+165 +95	+77 +50	+93 +50	+120 +50	+50 +32	+59 +32	+75 +32	+27 +16	+34 +16	+43 +16	+17 +6	+24 +6	+11 0	+18 0	+27 0	+43 0	+70 0	±5.5	±9	+2 -9	+6 -12	-4 -15	0 -18	-9 -20	-5 -23	-15 -26	-11 -29	-16 -34	-21 -39	-	-26 -44	-33 -56				
14	18																																						
18	24	+244 +160	+162 +110	+194 +110	+98 +65	+117 +65	+149 +40	+61 +40	+73 +40	+92 +40	+33 +20	+41 +20	+53 +20	+20 +7	+28 +7	+13 0	+21 0	+33 0	+52 0	+84 0	±6.5	±10	+2 -11	+6 -15	-4 -17	0 -21	-11 -24	-7 -28	-18 -31	-14 -41	-20 -48	-27 -48	-	-33 -54	-46 -67				
24	30																																						
30	40	+270 +170	+182 +120	+220 +120	+119 +119	+142 +142	+180 +180	+75 +75	+89 +89	+112 +112	+41 +41	+50 +50	+64 +64	+25 +25	+34 +34	+16 +16	+25 +25	+39 +39	+62 +62	+100 +100	±8	±12	+3 -13	+7 -18	-4 -20	0 -25	-12 -28	-8 -33	-21 -37	-17 -42	-25 -50	-34 -59	-39 -70	-42 -76	-55 -86	-76 -86			
40	50	+280 +180	+192 +130	+230 +130	+80 +80	+80 +80	+50 +50	+50 +50	+25 +25	+25 +25	+25 +25	+25 +25	+9 +9	+9 +9	0 0	0 0	0 0	0 0	0 0	0 0	±8	±12	-13 -18	-18 -20	-20 -25	-25 -28	-33 -33	-37 -37	-42 -42	-50 -50	-59 -59	-70 -70	-86 -86	-106 -106	-106 -106				
50	65	+310 +190	+214 +140	+260 +140	+146 +146	+174 +174	+220 +220	+90 +90	+106 +106	+134 +134	+49 +49	+60 +60	+76 +76	+29 +29	+40 +40	+19 +19	+30 +30	+46 +46	+74 +74	+120 +120	±9.5	±15	+4 -15	+9 -21	-5 -24	0 -30	-14 -33	-9 -39	-26 -45	-21 -51	-30 -60	-42 -72	-55 -85	-76 -106	-106 -106				
65	80	+320 +200	+224 +150	+270 +150	+100 +100	+100 +100	+60 +60	+60 +60	+30 +30	+30 +30	+30 +30	+10 +10	+10 +10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	±9.5	±15	-15 -21	-21 -24	-24 -30	-30 -33	-39 -39	-45 -45	-51 -51	-60 -60	-72 -72	-85 -85	-106 -106	-106 -106					
80	100	+360 +220	+257 +170	+310 +170	+174 +174	+207 +207	+260 +260	+107 +107	+126 +126	+159 +159	+58 +58	+71 +71	+90 +90	+34 +34	+47 +47	+22 +22	+35 +35	+54 +54	+87 +87	+140 +140	±11	±17	+4 -18	+10 -25	-6 -28	0 -35	-16 -38	-10 -45	-30 -52	-24 -59	-38 -73	-58 -93	-78 -113	-111 -146	-146 -146				
100	120	+380 +240	+267 +180	+320 +180	+120 +120	+120 +120	+72 +72	+72 +72	+36 +36	+36 +36	+12 +12	+12 +12	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	±11	±17	-18 -25	-25 -28	-28 -35	-35 -38	-45 -45	-52 -52	-59 -59	-76 -76	-101 -101	-126 -126	-166 -166	-166 -166					
120	140	+420 +260	+300 +200	+360 +200																																			
140	160	+440 +280	+310 +210	+370 +210	+208 +145	+245 +145	+305 +145	+125 +85	+148 +85	+185 +85	+68 +43	+83 +43	+106 +43	+39 +14	+54 +14	+25 0	+40 0	+63 0	+100 0	+160 0	±12.5	±20	+4 -21	+12 -28	-8 -33	0 -40	-20 -45	-12 -61	-36 -68	-28 -68	-50 -90	-85 -125	-119 -159	-159 -159					
160	180	+470 +310	+330 +230	+390 +230																																			
180	200	+525 +340	+355 +240	+425 +240																																			
200	225	+565 +380	+375 +260	+445 +260	+242 +170	+285 +170	+355 +170	+146 +100	+172 +100	+215 +100	+79 +50	+96 +50	+122 +50	+44 +15	+61 +15	+29 0	+46 0	+72 0	+115 0	+185 0	±14.5	±23	+5 -24	+13 -33	-8 -37	0 -46	-22 -51	-14 -60	-41 -70	-33 -79	-63 -109	-113 -159	-159 -159						
225	250	+605 +420	+395 +280	+465 +280																																			
250	280	+690 +480	+430 +300	+510 +300	+271 +271	+320 +320	+400 +400	+162 +162	+191 +191	+240 +240	+88 +88	+108 +108	+137 +137	+49 +49	+69 +69	+32 +32	+52 +52	+81 +81	+130 +130	+210 +210	±16	±26	+5 -27	+16 -36	-9 -41	0 -52	-25 -57	-14 -66	-47 -79	-36 -88	-126 -178	-178 -178	-178 -178	-178 -178					
280	315	+750 +540	+460 +330	+540 +330	+190 +190	+190 +190	+110 +110	+110 +110	+56 +56	+56 +56	+56 +56	+17 +17	+17 +17	0 0	0 0	0 0	0 0	0 0	0 0	0 0	±16	±26	-27 -36	-36 -41	-41 -52	-52 -57	-66 -66	-79 -79	-88 -88	-130 -130	-130 -130	-130 -130	-130 -130	-130 -130					
315	355	+830 +600	+500 +360	+590 +360	+299 +210	+350 +210	+440 +210	+182 +125	+214 +125	+265 +125	+98 +62	+119 +62	+151 +62	+54 +18	+75 +18	+36 0	+57 0	+89 0	+140 0	+230 0	±18	±28	+7 -29	+17 -40	-10 -46	0 -57	-26 -62	-16 -73	-51 -87	-41 -98	-144 -150	-150 -150	-150 -150	-150 -150					
355	400	+910 +680	+540 +400	+630 +400	+210 +210	+210 +210	+125 +125	+125 +125	+62 +62	+62 +62	+62 +62	+18 +18	+18 +18	0 0	0 0	0 0	0 0	0 0	0 0	0 0	±18	±28	-29 -40	-40 -46	-46 -57	-57 -62	-62 -73	-73 -87	-87 -98	-98 -109	-109 -109	-109 -109	-109 -109	-109 -109					
400	450	+1010 +760	+595 +440	+690 +440	+327 +327	+385 +385	+480 +480	+198 +198	+232 +232	+290 +290	+108 +108	+131 +131	+165 +165	+60 +60	+83 +83	+40 +40	+63 +63	+97 +97	+155 +155	+250 +250	±20	±31	+8 -32	+18 -45	-10 -50	0 -63	-27 -67	-17 -80	-55 -95	-45 -108	-166 -166	-166 -166	-166 -166	-166 -166					
450	500	+1080 +840	+635 +480	+730 +480	+230 +230	+230 +230	+135 +135	+135 +135	+68 +68	+68 +68	+68 +68	+20 +20	+20 +20	0 0	0 0	0 0	0 0	0 0	0 0	0 0	±20	±31	-32 -45	-45 -50	-50 -63	-63 -67	-80 -80	-95 -95	-108 -108	-109 -109	-109 -109	-109 -109	-109 -109	-109 -109					

In every step given in the table, the value on the upper side shows the upper deviation and the value on the lower side, the lower deviation.

Basic size step (mm)		Tolerance zone class of shaft (μm)																														
>	\leq	b9	c9	d8	d9	e7	e8	e9	f6	f7	f8	g5	g6	h5	h6	h7	h8	h9	js5	js6	js7	k5	k6	m5	m6	n6	p6	r6	s6	t6	u6	x6
-	3	-140 -165	-60 -85	-20 -34	-20 -45	-14 -24	-14 -28	-14 -39	-6 -12	-6 -16	-6 -20	-2 -6	-2 -8	0 -4	0 -6	0 -10	0 -14	0 -25	± 2	± 3	± 5	+4 0	+6 0	+6 +2	+8 +2	+10 +4	+12 +6	+16 +10	+20 +14	-	+24 +18	+26 +20
3	6	-140 -170	-70 -100	-30 -48	-30 -60	-20 -32	-20 -38	-20 -50	-10 -18	-10 -22	-10 -28	-4 -9	-4 -12	0 -5	0 -8	0 -12	0 -18	0 -30	± 2.5	± 4	± 6	+6 +1	+9 +1	+9 +4	+12 +4	+16 +8	+20 +12	+23 +15	+27 +19	-	+31 +23	+36 +28
6	10	-150 -186	-80 -116	-40 -62	-40 -76	-25 -40	-25 -47	-25 -61	-13 -22	-13 -28	-13 -35	-5 -11	-5 -14	0 -6	0 -9	0 -15	0 -22	0 -36	± 3	± 4.5	± 7	+7 +1	+10 +1	+12 +6	+15 +6	+19 +10	+24 +15	+28 +19	+32 +23	-	+37 +28	+43 +34
10	14	-150	-95	-50	-50	-32	-32	-32	-16	-16	-16	-6	-6	0	0	0	0	0	± 4	± 5.5	± 9	+9	+12	+15	+18	+23	+29	+34	+39	-	+44	+51
14	18	-193	-138	-77	-93	-50	-59	-75	-27	-34	-43	-14	-17	-8	-11	-18	-27	-43	± 4	± 5.5	± 9	+1	+1	+7	+7	+12	+18	+23	+28	-	+33	+56 +45
18	24	-160	-110	-65	-65	-40	-40	-40	-20	-20	-20	-7	-7	0	0	0	0	0	± 4.5	± 6.5	± 10	+11	+15	+17	+21	+28	+35	+41	+48	-	+54 +41	+67 +54
24	30	-212	-162	-98	-117	-61	-73	-92	-33	-41	-53	-16	-20	-9	-13	-21	-33	-52	± 4.5	± 6.5	± 10	+2	+2	+8	+8	+15	+22	+23	+35	+54 +41	+61 +48	+77 +64
30	40	-170 -232	-120 -182	-80	-80	-50	-50	-50	-25	-25	-25	-9	-9	0	0	0	0	0	± 5.5	± 8	± 12	+13	+18	+20	+25	+33	+42	+50	+59	+64 +48	+76 +60	-
40	50	-180 -242	-130 -192	-119	-142	-75	-89	-112	-41	-50	-64	-20	-25	-11	-16	-25	-39	-62	± 5.5	± 8	± 12	+2	+2	+9	+9	+17	+26	+34	+43	+70 +54	+86 +70	-
50	65	-190 -264	-140 -214	-100	-100	-60	-60	-60	-30	-30	-30	-10	-10	0	0	0	0	0	± 6.5	± 9.5	± 15	+15	+21	+24	+30	+39	+51	+60 +41	+72 +53	+85 +66	+106 +87	-
65	80	-200 -274	-150 -224	-146	-174	-90	-106	-134	-49	-60	-76	-23	-29	-13	-19	-30	-46	-74	± 6.5	± 9.5	± 15	+2	+2	+11	+11	+20	+32	+62 +43	+78 +59	+94 +75	+121 +102	-
80	100	-220 -307	-170 -257	-120	-120	-72	-72	-72	-36	-36	-36	-12	-12	0	0	0	0	0	± 7.5	± 11	± 17	+18	+25	+28	+35	+45	+59	+73 +51	+93 +71	+113 +91	+146 +124	-
100	120	-240 -327	-180 -267	-174	-207	-107	-126	-159	-58	-71	-90	-27	-34	-15	-22	-35	-54	-87	± 7.5	± 11	± 17	+3	+3	+13	+13	+23	+37	+76 +54	+101 +79	+126 +104	+166 +144	-
120	140	-260 -360	-200 -300																± 9	± 12.5	± 20	+21	+28	+33	+40	+52	+68	+88 +63	+117 +92	+147 +122	-	-
140	160	-280 -380	-210 -310	-145	-145	-85	-85	-85	-43	-43	-43	-14	-14	0	0	0	0	0	± 9	± 12.5	± 20	+3	+3	+15	+15	+27	+43	+90 +65	+125 +100	+159 +134	-	-
160	180	-310 -410	-230 -330	-208	-245	-125	-148	-185	-68	-83	-106	-32	-39	-18	-25	-40	-63	-100	± 9	± 12.5	± 20	+3	+3	+15	+15	+27	+43	+93 +68	+133 +108	+171 +146	-	-
180	200	-340 -455	-240 -355																± 10	± 14.5	± 23	+24	+33	+37	+46	+60	+79	+106 +77	+151 +122	-	-	-
200	225	-380 -495	-260 -495	-170	-170	-100	-100	-100	-50	-50	-50	-15	-15	0	0	0	0	0	± 10	± 14.5	± 23	+4	+4	+17	+17	+31	+50	+109 +80	+159 +130	-	-	-
225	250	-420 -535	-280 -395	-242	-285	-146	-172	-215	-79	-96	-122	-35	-44	-20	-29	-46	-72	-115	± 10	± 14.5	± 23	+4	+4	+17	+17	+31	+50	+113 +84	+169 +140	-	-	-
250	280	-480 -610	-300 -430	-190	-190	-110	-110	-110	-56	-56	-56	-17	-17	0	0	0	0	0	± 11.5	± 16	± 26	+27	+36	+43	+52	+66	+88	+126 +94	-	-	-	-
280	315	-540 -670	-330 -460	-271	-320	-162	-191	-240	-88	-108	-137	-40	-49	-23	-32	-52	-81	-130	± 11.5	± 16	± 26	+4	+4	+20	+20	+34	+56	+130 +98	-	-	-	-
315	355	-600 -740	-360 -500	-210	-210	-125	-125	-125	-62	-62	-62	-18	-18	0	0	0	0	0	± 12.5	± 18	± 28	+29	+40	+46	+57	+73	+98	+144 +108	-	-	-	-
355	400	-680 -820	-400 -540	-299	-350	-182	-214	-265	-98	-119	-151	-43	-54	-25	-36	-57	-89	-140	± 12.5	± 18	± 28	+4	+4	+21	+21	+37	+62	+150 +114	-	-	-	-
400	450	-760 -915	-440 -595	-230	-230	-135	-135	-135	-68	-68	-68	-20	-20	0	0	0	0	0	± 13.5	± 20	± 31	+32	+45	+50	+63	+80	+108	+166 +126	-	-	-	-
450	500	-840 -995	-480 -635	-327	-385	-198	-232	-290	-108	-131	-165	-47	-60	-27	-40	-63	-97	-155	± 13.5	± 20	± 31	+5	+5	+23	+23	+40	+68	+172 +132	-	-	-	-

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