NTK CUTTING TOOLS

GENERAL CATALOG 6200



App for iOS
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App for ANDROID
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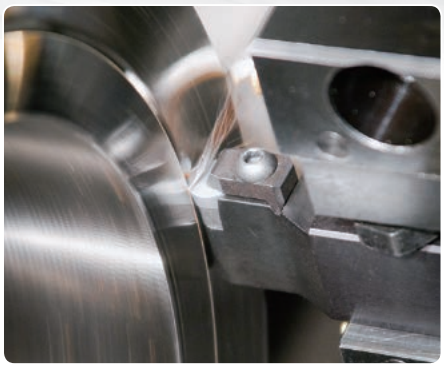
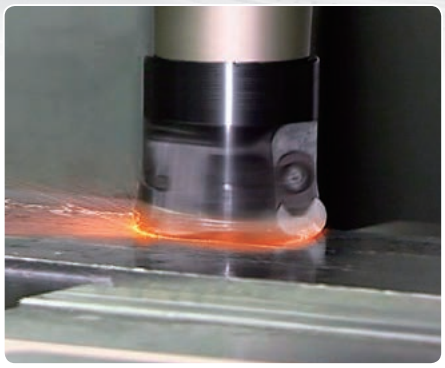
NTK TECHNOLOGY

High Temperature Alloys

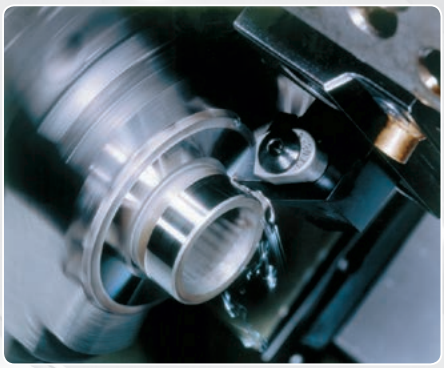
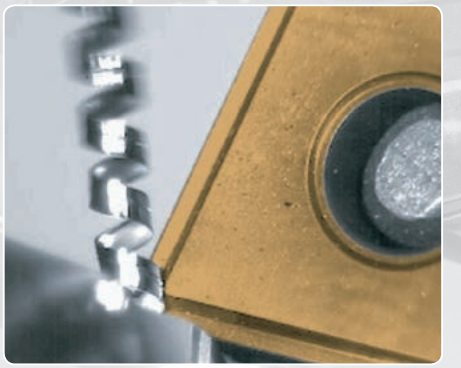




Gray/Ductile Cast Iron



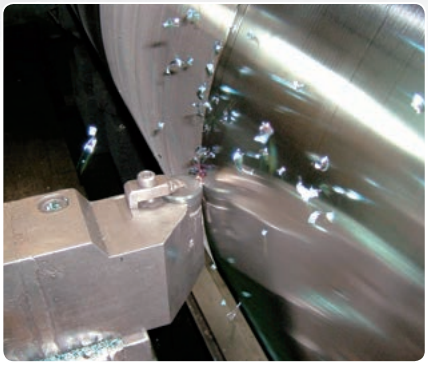



Hardened Steels

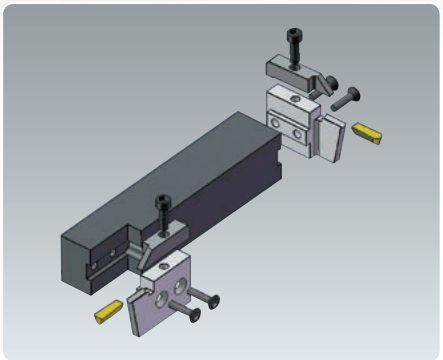




Mill Rolls





Grooving

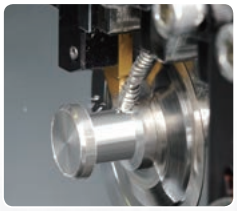


Tooling For Swiss Type Lathes

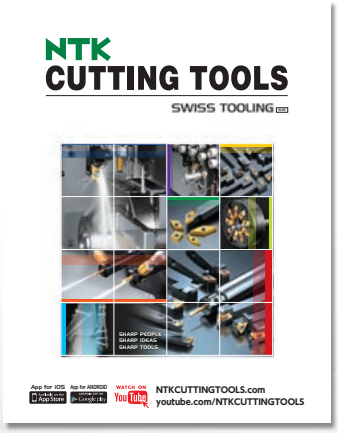








NTK Swiss Catalog 6100



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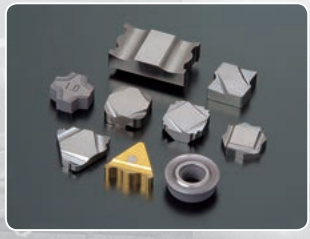
Bearing Production





Steel Machining





High Speed Machining of Aluminum



Guidelines for Catalog

- This catalog lists products as of September 2015.
- Please note that specifications of the products listed in this catalog may be changed without notice due to continuous research & development and product improvements.
- This catalog contains the major features and relevant information on all of our products. Please contact our sales representatives or dealers if more detailed information is needed.
- Stock Status Symbols

  ● : Standard stock available for Right-Hand, Left-Hand and neutral products
  R : Stock available only in Right-Hand
  L : Stock available only in Left-Hand
  ○ : 1-2 weeks delivery
  Ⓡ : 1-2 weeks delivery only in Right-Hand
  Ⓛ : 1-2 weeks delivery only in Left-Hand
  ■ : While stock lasts
  No symbol : Not stocked

- Please note that this catalog was prepared based on products intended mainly for sale in North and South America.

■ Standard

1) Holder Type	Package quantity	Notes
Turning holder	1 pc/case	
Milling cutter	1 pc/case	
2) Spare parts	**Package quantity**	**Notes**
Screw	10 pcs/case	Clamp screw, Clamp bolt, Double screw, Button screw
Seat	10 pcs/case	Shim seat
Clamp	10 pcs/case	Clamp
Wrench and cutter parts (such as cartridges)	5 pcs/case	Wrench, bit, cutter product
Handle, Hose	1 pc/case	Handle with magnet, handle and bit
3) Insert Type	**Package quantity**	**Notes**
BIDEMICS (Brazed)	1 pc/case	JP2
CBN	1 pc/case	B23, B30, B36, B40, B52, B5K, B6K, B99
PCD	1 pc/case	PD1, PD2
CTPW insert for cut-off	5 pcs/case	CTPW series
STICK DUO Solid carbide bar	1 pc/case	SHFS, SHFB, SBFS, SBFB, SBB, SBG, SBT, SSP
All others	10 pcs/case	

＊Packaging may vary depending on the product size.
For more information, please contact your nearest dealer or our sales office.

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NEW PRODUCTS FOR SWISS-TYPE LATHES

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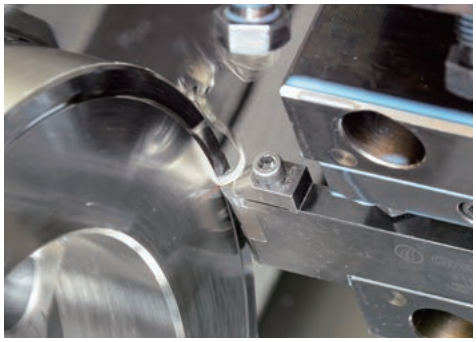
NEW BIDEMICS New Era in Aerospace Machining

WATCH ON YouTube





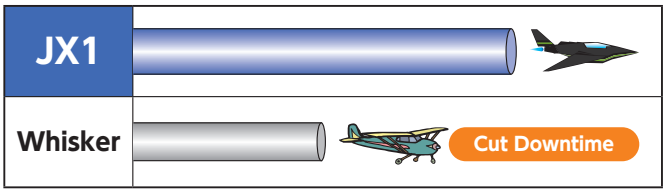
JX1

Features — Patents Pending

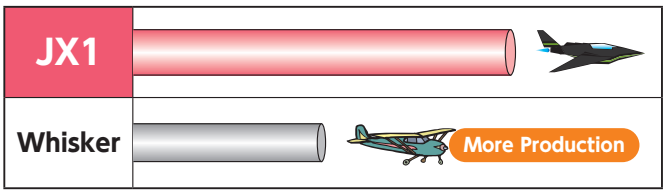
- *Significantly extended tool life compared to whisker ceramics*
- *Double cutting speed potential compared to whisker ceramics*
- *Superior surface finish compared to whisker ceramics*
- *Applicable to powder-metallurgical heat resistant alloys*

Increase Productivity vs. Whisker Ceramics

① Significantly extended tool life at same speed



② Double speed capability



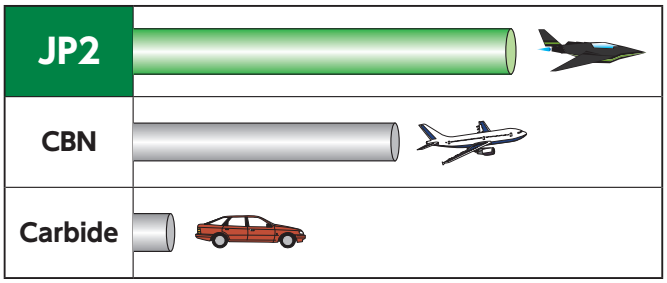
JP2

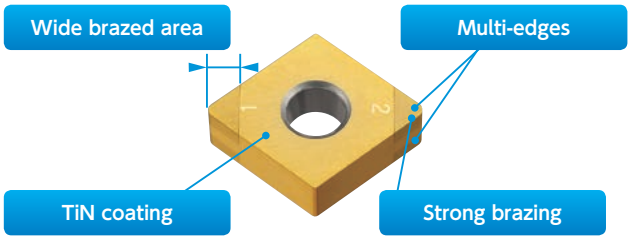
Features — Patents Pending

- *High speed finish turning can be performed at 800SFM or higher*
- *Superior wear resistance compared to CBN's*
- *Superior notching resistance vs CBN or carbides*
- *Superior surface finishes vs CBNs and coated carbides*

Increase Productivity vs. Carbide

① 10 to 15 times higher speed capability





Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
JX1	Heat Resistant Alloy	Turning	Rough no scale	600-**1600**	.005-.011	.040-.100		●
			Semi finishing	600-**1600**	.004-.010	.020-.080		●
JP2	Heat Resistant Alloy	Turning	Finishing	600-**1700**	.002-.007	.005-.030		●

1 Longer tool life

JX1's combination of High Hardness, Superior Thermal Conductivity and Improved Strength compared to whisker ceramics results in significantly longer tool life when applied at typical whisker ceramic speeds / feeds and depth of cut.

Turbine shaft (Inco718 Pre-machined)

	Comp. whisker	JX1
Shape	RNG45	←
Cutting speed (SFM)	800	←
Feed (IPR)	.008	←
Depth of cut (inch)	.080	←
	WET	←



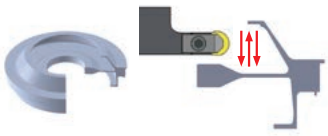
NTK : JX1	10 min	
Competitor's whisker ceramic	3 min	

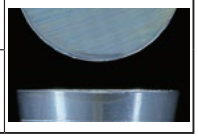
2 Higher speeds

JX1's Superior Physical Properties compared to whisker ceramic enable you to increase speeds; potentially as much as 2X whisker ceramic speeds; increasing productivity and potentially offsetting needs for additional equipment to meet increasing demands.

Turbine disk (Inco718 rough)

	Comp. whisker	JX1
Shape	RPGX45	←
Cutting speed (SFM)	650	1300
Feed (IPR)	.006	←
Depth of cut (inch)	.080	←
	WET	←



NTK : JX1	120 cc/min	JX1 
Competitor's whisker ceramic	60 cc/min	

JX1



Whisker Ceramic



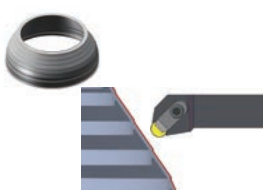
Chips break easily at higher cutting speed vs typically continuous chips of Super Alloy materials. This makes more efficient chip removal.

3 Works well on wide range of High Temperature Alloys

JX1's Unique Physical Properties enables machining of newer compositions of difficult to machine High Nickel Alloys, High Nickel/Cobalt alloys, or powdered metallurgy alloys that are becoming more common in the market .

Turbine case (718Plus semi finish)

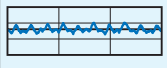
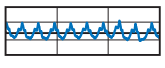
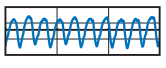
	Comp. coated whisker	JX1
Shape	RNG45	←
Cutting speed (SFM)	800	←
Feed (IPR)	.010	←
Depth of cut (inch)	.020	←
	WET	←



NTK : JX1	3 pass	
Competitor's whisker ceramic	1 pass	

4 Superior Surface Finish

JP2's Outstanding Wear Resistance and Notching Resistance results in workpiece surface finishes consistently superior to either CBN or Carbide

		JP2	CBN	Carbide
				
Machined surface				
Roughness				
	Ra	0.64 μm	1.18 μm	2.75 μm
	Rz	3.36 μm	5.56 μm	9.64 μm
Cutting speed		800 SFM	←	120 SFM
Feed rate		.006 IPR	←	←
Cycle time		3.3 min	←	14.7 min
Removed chip		48 cc	←	←

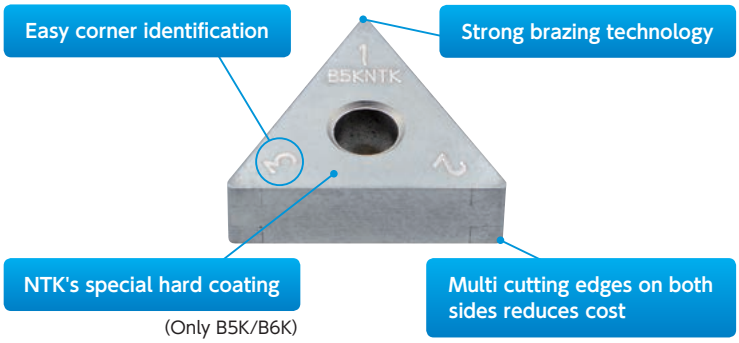
➡D2

NEW NTK CBN Grades

WATCH ON YouTube

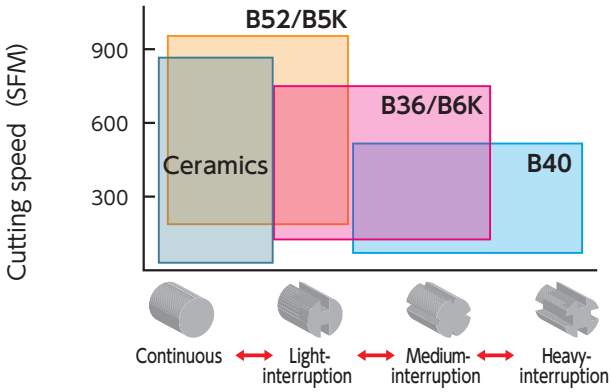
CBN series



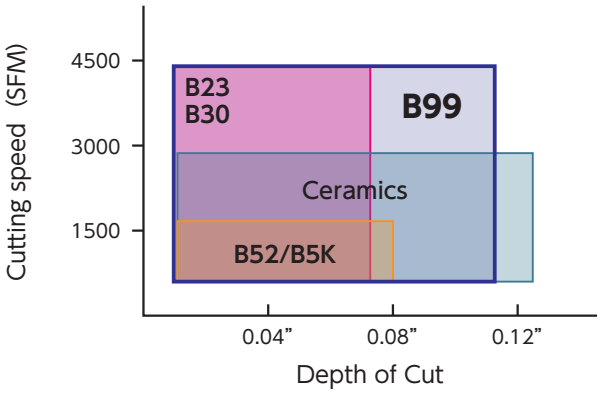


Grade	Style	Coating	Main Binder	CBN Volume	Applications				
					Cast Iron	Ductile Cast Iron	Hardened Material	Mill Rolls	Sintered Alloy
NEW **B99**	**Solid**	—	**AlN**	**93%**	●	○		●	
B23	Brazed	—	Ti	90%	●				●
B30	Brazed	—	Ti	95%	●				●
B36	Brazed	—	TiCN	65%			●		
NEW **B6K**	**Brazed**	**TiCN**	**TiCN**	**65%**			●		
B40	Brazed	—	TiN	65%			●		
B52	Brazed	—	TiC	50%		●	●		
NEW **B5K**	**Brazed**	**TiCN**	**TiC**	**50%**		●	●		

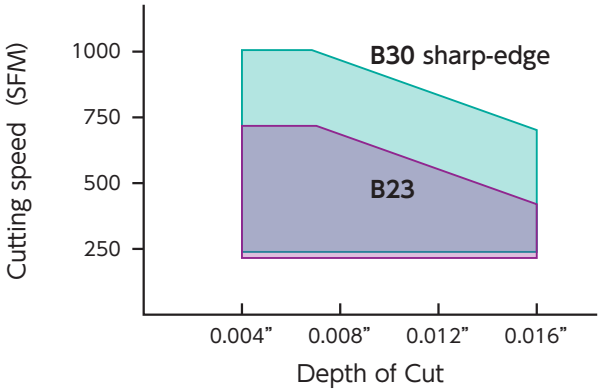
Hardened Material Applications



Gray / Ductile Cast Iron Applications



Sintered Alloy Applications



➡D32

NEW DM4 / DT4 New PVD coated carbide

WATCH ON YouTube

DM4

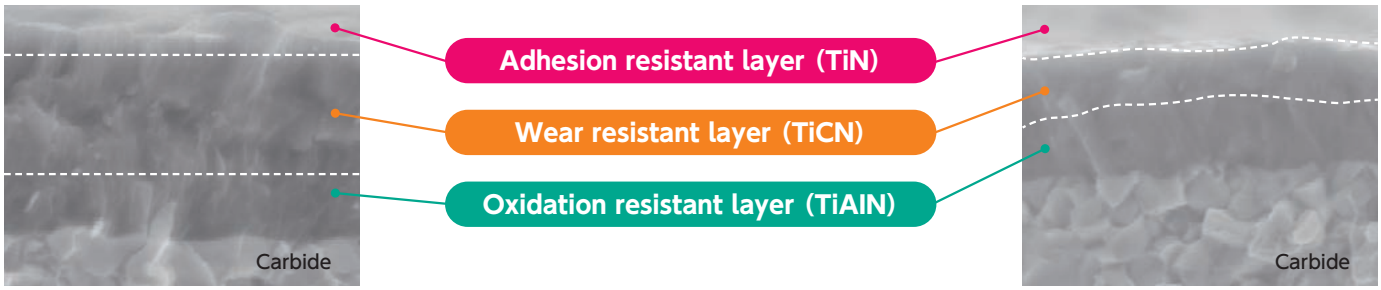


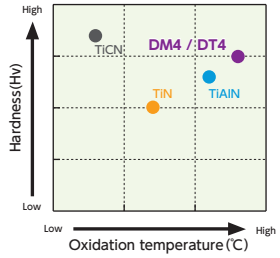
DT4



Features

- *Best grades for Titanium alloys*
- *Excellent oxidation resistance enables high temperature machining*
- *Triple coating layers provide superior tool life and consistency*





- For Titanium alloys
- For hard to cut materials
- For high temperature alloys

➡D44

NEW PD2 Super micro grain PCD

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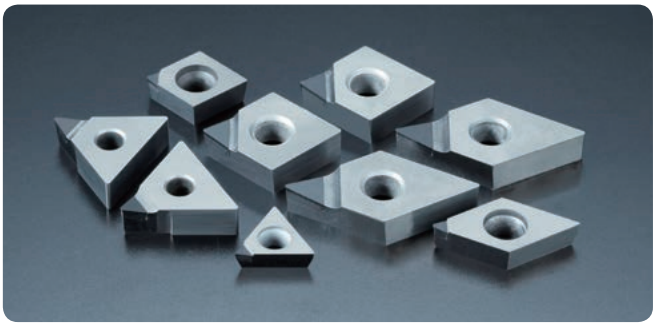
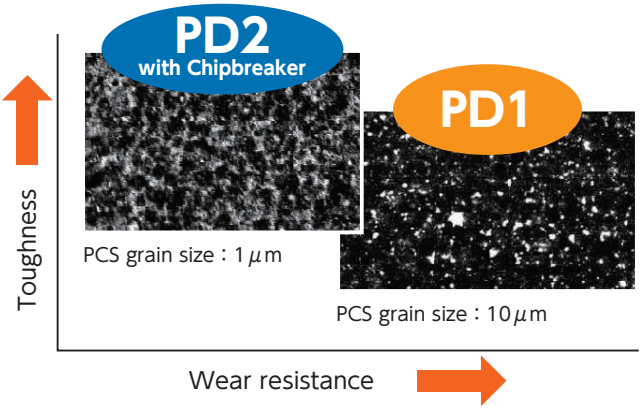
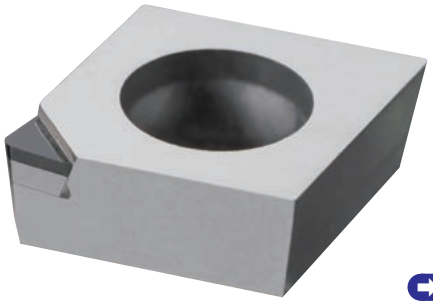


Features

- *Super micro grain PCD, maintains sharp cutting edges and increases chipping resistance*
- *Good chip control due to the high rake angle on the insert*





➡D34

NEW Groove DUO

WATCH ON YouTube

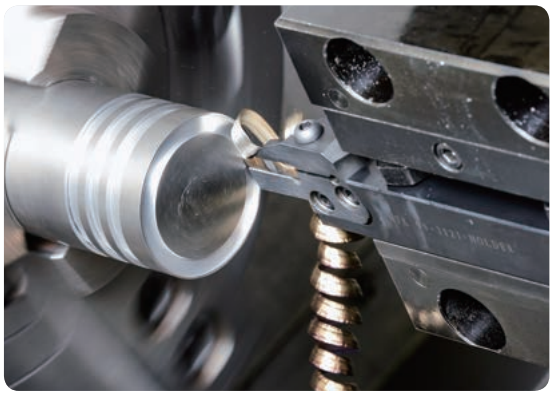


Features

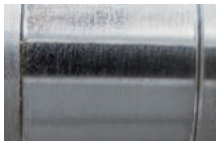
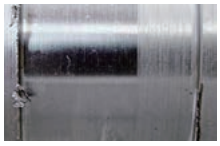
- *Grooving and side turning tools with highly rigid design*
- *3D design chipbreakers result in less tool pressure and excellent chip control*
- *Modular system provides more flexibility*

Multi purpose

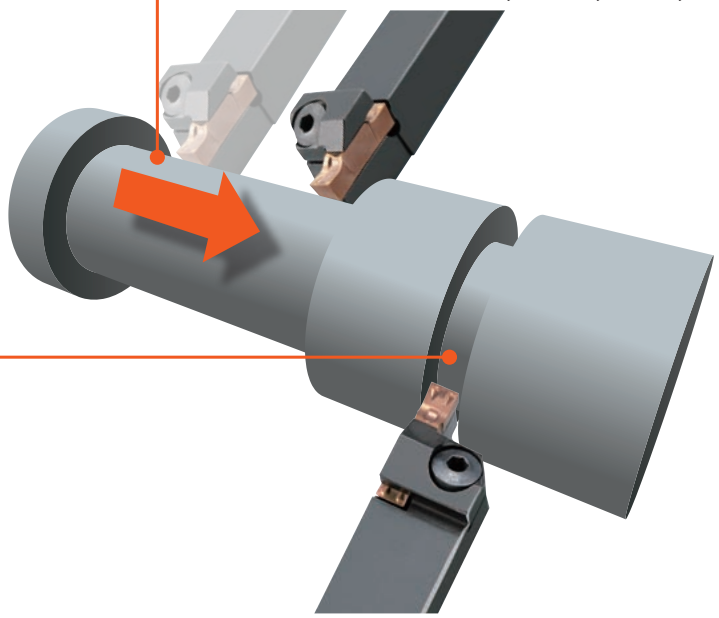
■Face Grooving



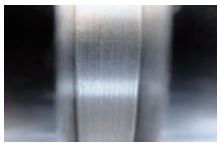
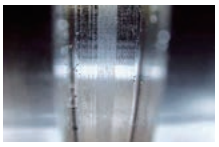
■Side-turning

	NTK:GW chipbreaker	Competitor
Chip		
Surface finish		

Material : 4135, 500SFM, .004IPR, .040DOC



■Grooving

	NTK:GW chipbreaker	Competitor
Chip		
Surface finish		

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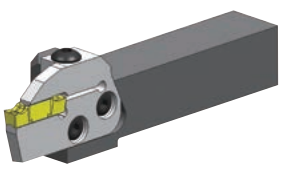
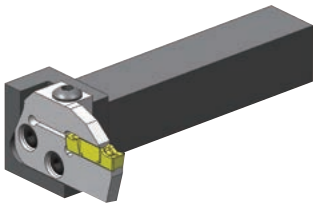
Modular system (To be released in 2016)

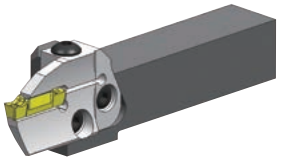
■For OD Grooving

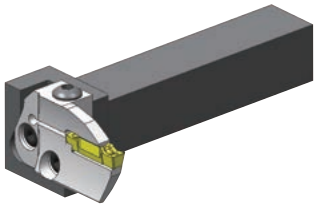




■For Face Grooving

From ϕ1.14"min. diameter

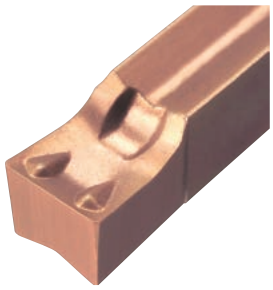




Chipbreaker

For Grooving / Side-turning

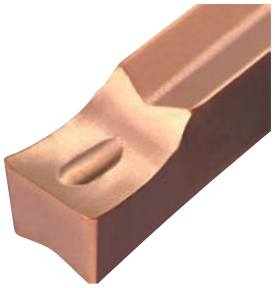
GW



- *Excellent chip control*
- *Good sharpness*
- *Side turning capability*

Less tool pressure

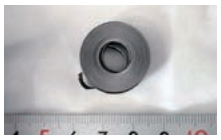
GV



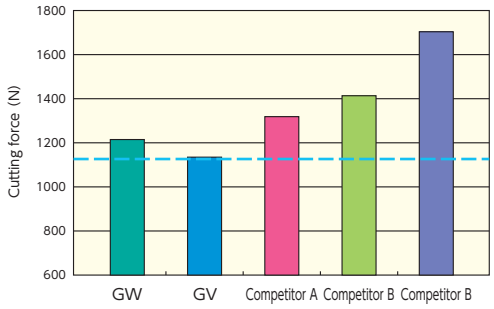
- *Superior sharp edge*

Chip condition (Grooving)

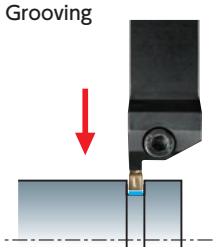
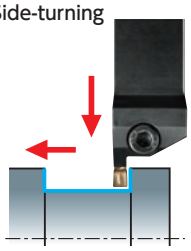
[Cutting condition]
260 SFM .003 IPR .197" width

	GW	GV
304SS		
303SS		
4135		

Tool pressure comparison when grooving



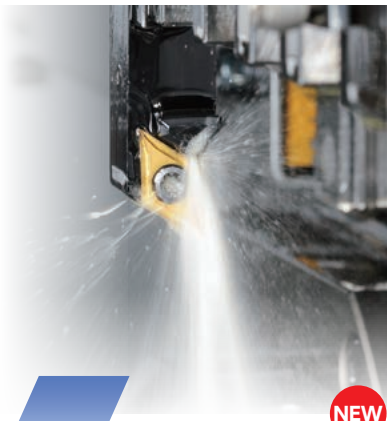
Recommended cutting conditions

Application	Work material	Cutting speed (SFM) 160 330 500 650	Feed rate (IPR) .002 .004 .006	Depth of cut (inch)
Grooving 	Free cutting steels			
	Carbon steels, Alloy steels			
	Stainless steel			
Side-turning 	Free cutting steels			~.138
	Carbon steels, Alloy steels			
	Stainless steel			

Inserts ➡H15 Holders ➡H12・H16

New Products for Swiss Type Lathes

Swiss tooling starts in Section N



NEW

Coolant through toolholders

SPLASH Series

➡N2 • O3

WATCH ON YouTube



NEW

Coolant through boring sleeves

STICK DUO SPLASH

➡N4 • O3

WATCH ON YouTube



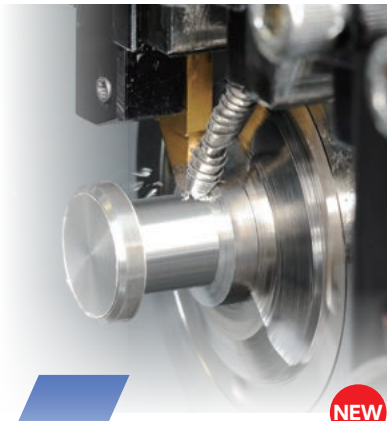
NEW

For HEX / Square socket

SHAPER DUO

➡N9 • W1

WATCH ON YouTube



NEW

New molded chipbreaker for TBP/TBPA

TBP / TBPA-BM

➡N6

WATCH ON YouTube



NEW

New molded chipbreaker for GTM32 grooving

GTMH-GX

➡N7

WATCH ON YouTube



NEW

Developed for Swiss machines

VBGT Tools

➡N10



NEW

Perfect combination of sharpness and chip control

YL Chipbreaker

➡N8

WATCH ON YouTube



Very sharp edge with good chip control

CL Chipbreaker

➡N8

WATCH ON YouTube



For light depth of cut

AMX Chipbreaker

➡N8

WATCH ON YouTube

B

Application Introduction

- Machining High Temperature Alloys with BIDEMICS and Ceramics ··· B2
- Machining Gray / Ductile Cast Iron with Ceramics ····· B4
- Machining Mill Rolls with Ceramics ··· B6
- Machining Hardened Materials with Ceramics ····· B7
- Machining Poly-V Pulley Profiles··· B8
- Tools for Bearing Industry / Tube Scarfing Tools / Tooth Chamfering Tools ····· B9
- Tooling for Swiss Type Lathes B10
- High Speed Milling of Aluminum ···B12

Machining High Temperature Alloys with BIDEMICS and Ceramics

Solutions for the Aerospace Industry

JX1 BIDEMICS

NEW ➡D2 • D4

WATCH ON YouTube

Features

- Significantly extended tool life compared to whisker ceramics
- Double cutting speed potential compared to whisker ceramics
- Superior surface finish compared to whisker ceramics
- Applicable to powder-metallurgical heat resistant alloys

	JX1	WA1
Notching	◎	
Flank Wear	◎	◎
Toughness	○	
Heat Shock		

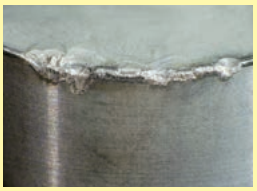
Recommended Work Materials

- Inco 718
- MAR-M247
- 718 Plus
- Rene

Recommended Applications

- Semi-Finish
- Profiling

Profiling of Inco 718



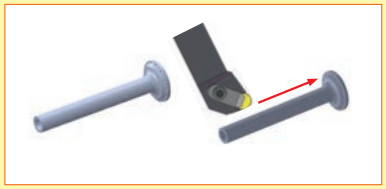
Competitor's Whisker Ceramic

Tool Life : 3min



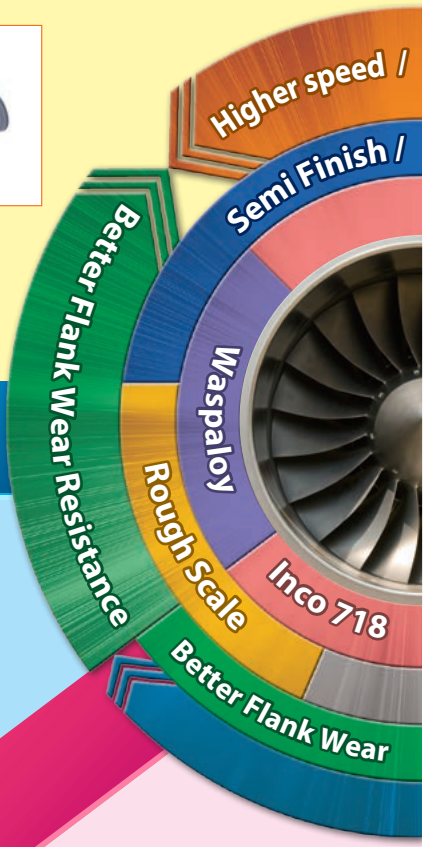
JX1

Tool Life : 10min



Turbine Shaft

RNG45, 800SFM, 008IPR,
080DOC, WET,
Inco 718 (pre-machined)



SX5 SiAlON Ceramic

➡D27

Features

- Best grade for scale and interruptions
- Best grade for machining high-cobalt alloys

Recommended Work Materials

- Waspaloy
- 718Plus
- Udimet 720
- Rene 41

Recommended Applications

- Rough Turning with scale and interruptions

SX9 SiAlON Ceramic

➡D27

WATCH ON YouTube

Features

- Tougher when compared to whisker ceramics
- Extreme toughness makes higher feed and heavier DOC machining possible
- Best grade for machining Inco 718 with scale

Recommended Work Materials

- Inco 718
- Inco 713
- Inco 706

Recommended Applications

- Rough turning with scale
- Milling

WA1 Whisker-Reinforced Ceramic ➡D23

SX7	SX9	SX5
◎	◎	○
○		
	◎	○
◎	◎	

Features

- Versatile grade for machining of high temperature alloys
- Better flank wear resistance compared to SiAlON ceramics
- Better notching resistance compared to competitor's whisker ceramics

Recommended Work Materials

- Inco 718
- Inco 625

Recommended Applications

- Semi-Finish
- Profiling
- Grooving

Profiling of Inco 718



Competitor's Whisker Ceramic



WA1



Turbine Case

Tool Life : 5.0min
RPGX45, 800SFM, .006IPR., .040", Wet
Inco 718 (pre-machined)



SX7 SiAlON Ceramic ➡D26

WATCH ON YouTube

Features

- Can run at same cutting condition vs whisker ceramics
- Better notching resistance compared to whisker ceramics
- No need to program ramping when compared to whisker ceramics
- Better flank wear resistance compared to competitor's SiAlON ceramics
- Best grade for pre-machined Waspaloy
- Best grade for high-speed milling

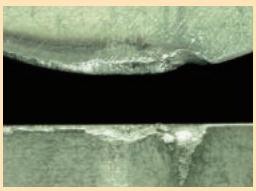
Recommended Work Materials

- Inco 718
- Inco 625
- Waspaloy
- Udimet 720

Recommended Applications

- Semi-Finish
- Profiling
- Milling
- Grooving

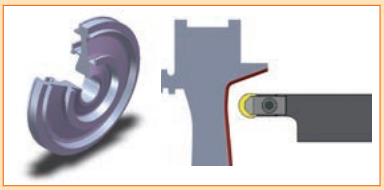
Profiling of Inco 718



Competitor's Whisker Ceramic



SX7



Turbine Disk

Tool Life : 4.5min
RCGX45, 800SFM, .006IPR., .040", Wet
Inco 718 (pre-machined)

Machining Gray / Ductile Cast Iron with Ceramics

High Speed Machining of Cast Irons

SX6 Silicon Nitride Ceramic ➡D24

■ Features

- 1st choice for roughing gray cast iron
- Applicable for wet cutting
- Excellent thermal shock resistance makes high speed milling possible

	SX6
Notching	◎
Flank Wear	
Toughness	○
Heat Shock	◎

■ Recommended Applications

- Gray cast iron – Rough – Turning and milling

■ Recommended Cutting Conditions

Work material	Purpose	Grade	Cutting speed (SFM)	Feed (IPR / IPT)	Depth of cut (inch)	DRY	WET
Gray cast iron	Turning	SX6	1800–3500	.012–.024	.020–.140	●	●
	Milling	SX6	1500–4200	.003–.010	.020–.140	●	○



HC1, HW2 Alumina Oxide Ceramic ➡D18•D19

■ Features

- 1st choice for finishing gray cast iron with no coolant
- Excellent wear resistance makes high speed finishing possible

■ Recommended Applications

- Gray cast iron – Finish – Turning
- Chilled liners – Rough / Finish – Turning (HW2)

■ Recommended Cutting Conditions

Work material	Purpose	Grade	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Gray cast iron	Turning	HC1	1200–2100	.004–.016	.020–.080	●	
		HW2	1200–2100	.004–.016	.020–.080	●	
Chilled liners	Turning	HW2	800–1200	.004–.012	.020–.080	●	

SP9 CVD Coated Silicon Nitride Ceramic

➡D25

WATCH ON YouTube

SP9
◎
◎

Features

- Extremely tough – Tough enough to rough cast iron with T0420 (.004" X20) edge preparation
- Small edge preparation – Low tool pressure for stable precision machining
- SP9' s toughness makes higher feed rates possible
- Dramatically reduced flank wear due to CVD coating

Recommended Applications

- Gray cast iron – Rough – Turning and milling
- Ductile cast iron – Rough – Turning and milling

Recommended Cutting Conditions

Work material	Purpose	Grade	Cutting speed (SFM)	Feed (IPR / IPT)	Depth of cut (inch)	DRY	WET
Gray cast iron	Turning	SP9	1200–2700	.012–.024	–.140	●	○
	Milling		1200–2500	.003–.010	–.240	●	○
Ductile cast iron	Turning	SP9	800–2000	.012–.024	–.140	○	●
	Milling		2100–3000	.002–.010	–.240	●	○



HC2, HC6 TiC Ceramic WA1 Whisker Reinforced Ceramic

➡D20・D21

➡D23

Features

- All grades make high speed finishing of cast iron possible
- Applicable for wet cutting conditions
- HC6 – Optimized for finishing ductile cast iron

Recommended Applications

- Gray cast iron – Finish – Turning (HC2・HC6・WA1)
- Ductile cast iron – Finish – Turning (HC6)

Recommended Cutting Conditions

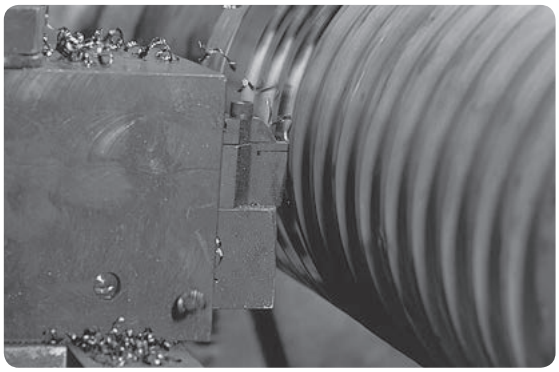
Work material	Purpose	Grade	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Gray cast iron	Turning	HC2/HC6	1200–2100	.004–.016	–.060	●	●
		WA1	1200–2100	.004–.016	–.120	●	●
Ductile cast iron	Turning	HC6	600–1500	.004–.012	–.040	○	●

Machining Mill Rolls with Ceramics

Improve Productivity

Features

- *Several ceramic and CBN grades for all mill-roll turning applications*
- *In addition to standard grade "HC2", NTK offers "HC5" and "HC7" for higher productivity*



Recommended Cutting Conditions

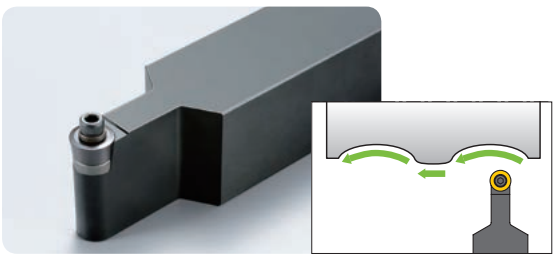
Material	Choice	Grade	Cutting speed (SFM)	Shore Hardness Scale 55-65	Shore Hardness Scale 65-72	Shore Hardness Scale 72-	Feed (IPR)	Depth of cut (inch)	DRY	WET
Steel *ex. D2*	1st	HC7	450-600	100%	80%	60%	.004-.012	.025-.075	●	
	2nd	HC5	450-600	100%	80%	60%	.004-.012	.025-.075	●	
	3rd	HC2	350-450	100%	80%	60%	.004-.012	.025-.075	●	
Chilled Cast Iron	1st	HC5	450-600	100%	80%	60%	.004-.012	.025-.075	●	
	2nd	HC7	450-600	100%	80%	60%	.004-.012	.025-.075	●	
	3rd	HC2	350-450	100%	80%	60%	.004-.012	.025-.075	●	
Ductile Cast iron	1st	HC5	300-600	100%	80%	60%	.004-.012	.025-.075	●	
	2nd	HC6	300-600	100%	80%	60%	.004-.012	.025-.075	●	
Carbide	1st	B99	100-200				.004-.012	.010	●	
	2nd	WA1	100-200				.004-.012	.010	●	
CPM Rolls *ex. Powdered Metal*	1st	ZC4	400-500				.004-.012	.025-.075	●	
	2nd	HC7	400-500				.004-.012	.025-.075	●	

Key Points

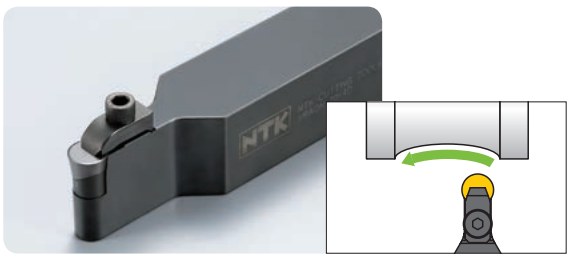
- Hardness of the roll is an important factor. As the roll gets harder, reduce SFM.
- RCGX style inserts are the preferred insert style for rigidity and cost savings.
- DOC will depend upon the amount of material to remove. When making multiple passes with one edge, vary your DOC to move the wear on the insert edge and reduce notching wear.
- If you encounter chatter, increase your feed rate. Variable RPM controllers are helpful to reduce harmonics.

Holders

■ HRCD ➡F20



■ VRAON ➡F19



Machining Hardened Materials with Ceramics

Dramatically Reduce Costs

Features

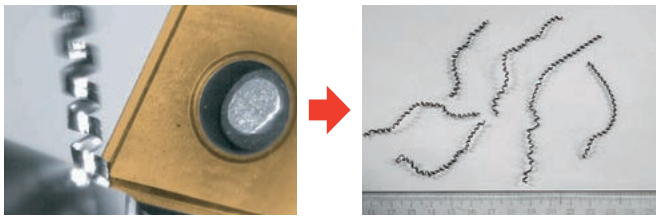
- ZC7 and ZC4 have excellent wear resistance needed to machine hardened materials
- ZC7 covers a wide range of applications such as carburized or induction hardened steels
- ZC4 performs the best in hardened material applications from HRc 55-70
- Wiper inserts and AG-chipbreaker improve machining efficiency



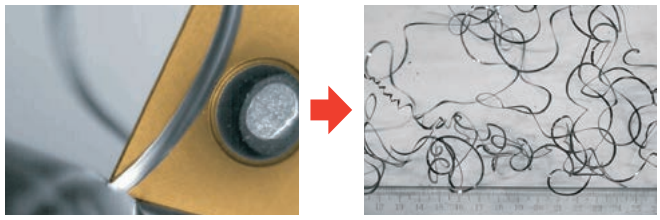
AG-Chipbreaker

● Good chip control ● Improve surface finish ● Reduce machine downtime

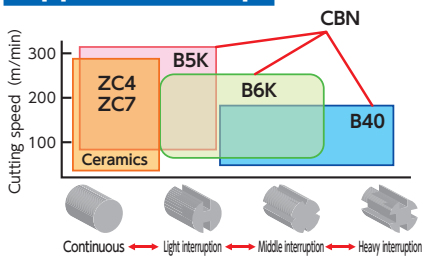
■ With AG-chipbreaker



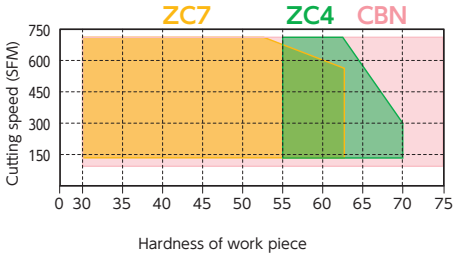
■ Without AG-chipbreaker



Application Map

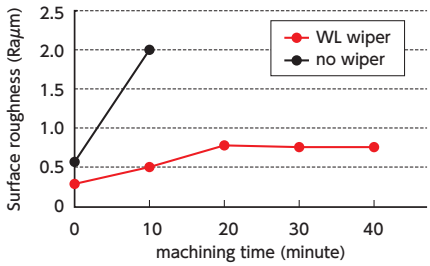


Recommended Speed Range



Effect of Wiper Flat on Cutting Edge

CNGA433WL 320SFM 004IPR 020doc



Recommended Cutting Conditions

Work material	Hardness (HRc)	Grade	Purpose	Cutting speed (SFM)	Feed (IPR)	DRY	WET
Hardened material	30–62	ZC7	Finish (Continuous)	130–700	.003–.008	●	●
	55–70	ZC4				●	●

➡D22

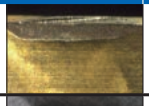
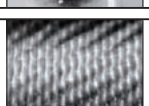
Recommended Depth of Cut and Feed Rate

Recommended depth of cut and feed rate by corner R dimension

corner R	feed rate (IPR)	depth of cut (inch)
R .016	.001–.003	~ .007
R .032	.003–.004	~ .015
R .047	.004–.005	~ .020
R .063	.005–.006	~ .030
R 1/4 (Round Insert)	.006–.010	~ .080

※for 30RMS finish

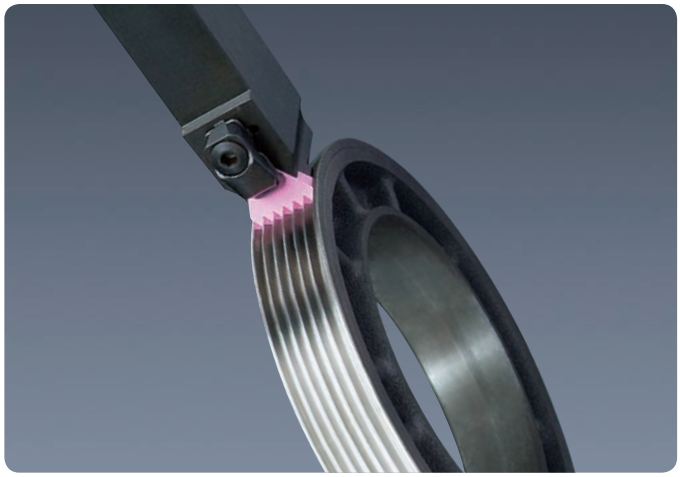
Troubleshooting for Hard Turning with Ceramic Inserts

	Case		Possible cause	Action required
Insert	VB wear		●Cutting speed is too high ●Feed rate is too low ●Improper nose radius	●Decrease cutting speed ●Increase feed rate ●Enlarge nose radius
	Wear on face		●Improper cutting condition ●Improper honed edge	●Decrease cutting speed ●Reduce angle of honed edge
	Flaking		●Improper cutting condition ●Improper honed edge	●Reduce honed edge ●Use insert without round honing ●Decrease feed rate ●Increase cutting speed
	Fructure		●Improper cutting condition ●Improper honed edge ●Use of coolant	●Decrease feed rate ●Enlarge honed edge ●Put round honing on edge ●Stop coolant
Workpiece	Chattering		●Too high tool pressure ●Shortage of workpiece and/or tool rigidity ●Cutting speed is too low	●Decrease feed rate ●Reduce honed edge ●Enlarge relief angle ●Shorten the length of tool overhang ●Increase cutting speed
	Surfacefinish		●Feed rate is too high ●Nose radius is too small ●Wear of insert	●Decrease feed rate ●Enlarge nose radius ●Use insert with wiper flat ●Decrease cutting speed

Machining Poly-V Pulley Profiles

Grooving With Ceramics





Features

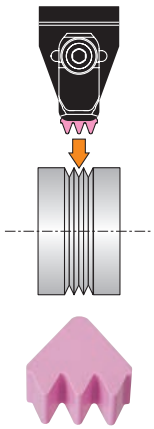
- *High speed machining for Poly-V pulleys*
- *Up to 6-V grooving with single pass*
- *Precision inserts for plunging profiles*



Recommended Cutting Conditions

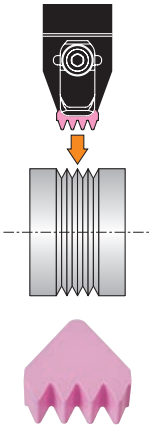
Material	Grade	Cutting speed (SFM)	Feed (IPR)	DRY	WET
Gray cast iron	**HW2**	1000–2000	.002–.006	●	

3V



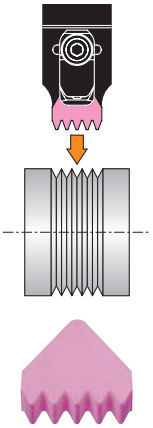
21 HP needed

4V



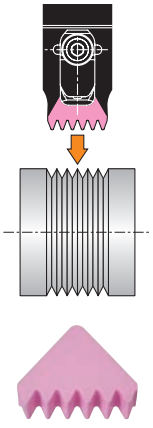
28 HP needed

5V



35 HP needed

6V



42 HP needed

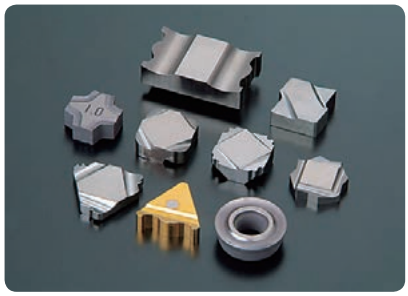
➡H19

Tools for Bearing Industry

Features

- ***NTK offers both Cermet and Carbide form tools for the Bearing industry***

⇒Contact NTK for details





Tube Scarfing Tools

Features

- ***NTK offers standard Ceramic inserts for tube scarfing applications***

⇒Contact NTK for details



Tooth Chamfering Tools

Features

- ***NTK offers indexable end-mills for chamfering teeth in gears***

⇒Contact NTK for details



Tooling for Swiss Type Lathes



NEW

Coolant through toolholders

SPLASH Series

➡N2 • O3 WATCH ON YouTube



NEW

Coolant through boring sleeves

STICK DUO SPLASH

➡N4 • O3 WATCH ON YouTube

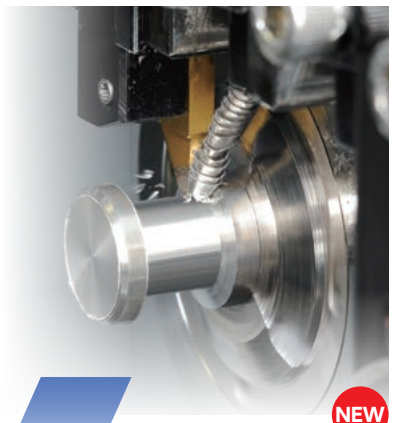


NEW

For HEX / Square socket

SHAPER DUO

➡N9 • W1 WATCH ON YouTube

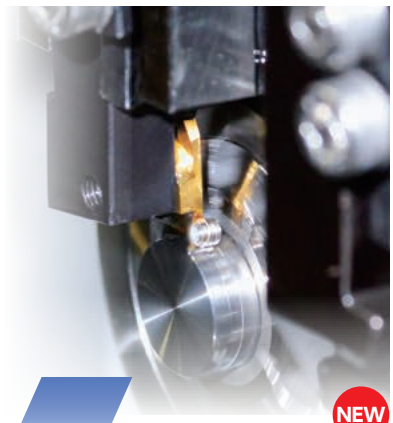


NEW

New molded chipbreaker for TBP/TBPA

TBP / TBPA-BM

➡N6 WATCH ON YouTube



NEW

New molded chipbreaker for GTM32 grooving

GTMH-GX

➡N7 WATCH ON YouTube



NEW

Developed for Swiss machines

VBGT Tools

➡N10



NEW

Perfect combination of sharpness and chip control

YL Chipbreaker

➡N8 WATCH ON YouTube



Very sharp edge with good chip control

CL Chipbreaker

➡N8 WATCH ON YouTube



For light depth of cut

AMX Chipbreaker

➡N8 WATCH ON YouTube





A great solution for chip control problems

Y-axis Toolholders

➡O11 WATCH ON YouTube



High performance thread forming

THREAD WHIRLING

➡O2 • O16 WATCH ON YouTube



Best for up to ϕ.200 diameter material

CSV Series

➡O27



Adjustable centerline height

DS-ACH

➡O17 WATCH ON YouTube



High rigidity boring bar

Mogul Bar

➡O16 WATCH ON YouTube



6 corner insert for swiss

UL Chipbreaker

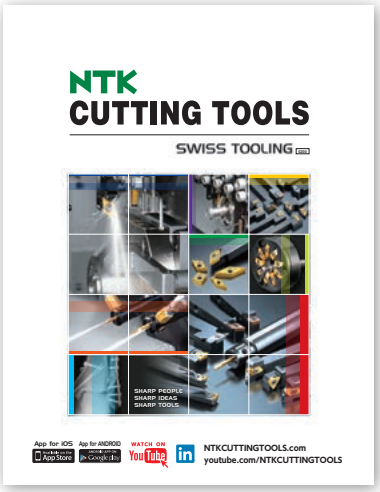
➡O34 WATCH ON YouTube



A must for extended guide bushing users

Shifted Toolholders

➡O35 WATCH ON YouTube



Swiss tooling starts in section N

High Speed Milling of Aluminum

HPC
igh erformance utter

Features

- ***Wide cutter diameter range***
  Ranging from ϕ.79" to ϕ3.94"
- ***No presetting required***
  The fixed-type HPC can be indexed simply by replacing inserts
  ※The adjustable HPC allows adjustment of cutter variance to 5㎛ or less
- ***High rigidity***
  High-reliability due to steel cutter body
- ***Max. speed 18000 RPM***

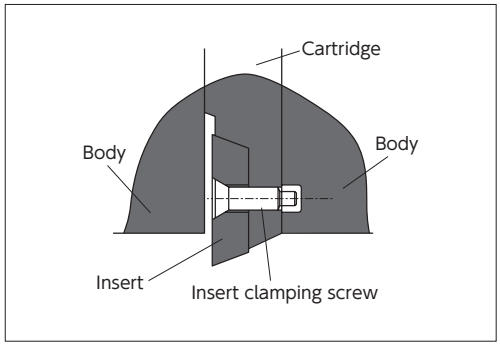


Safety design

Prevents insert movement due to centrifugal force

- ***HPC clamping system***

  The HPC insert is protected from centrifugal movement by combining the body and cartridge with an insert clamp screw



Recommended Cutting Conditions

Work material	Grade	Cutting speed (SFM)	Feed (IPT)	Depth of cut (inch)	DRY	WET
Aluminum	PD1	1000-20000	.002-.008	~200		●
	TM1	500-8000	.003-.008	~200	○	●

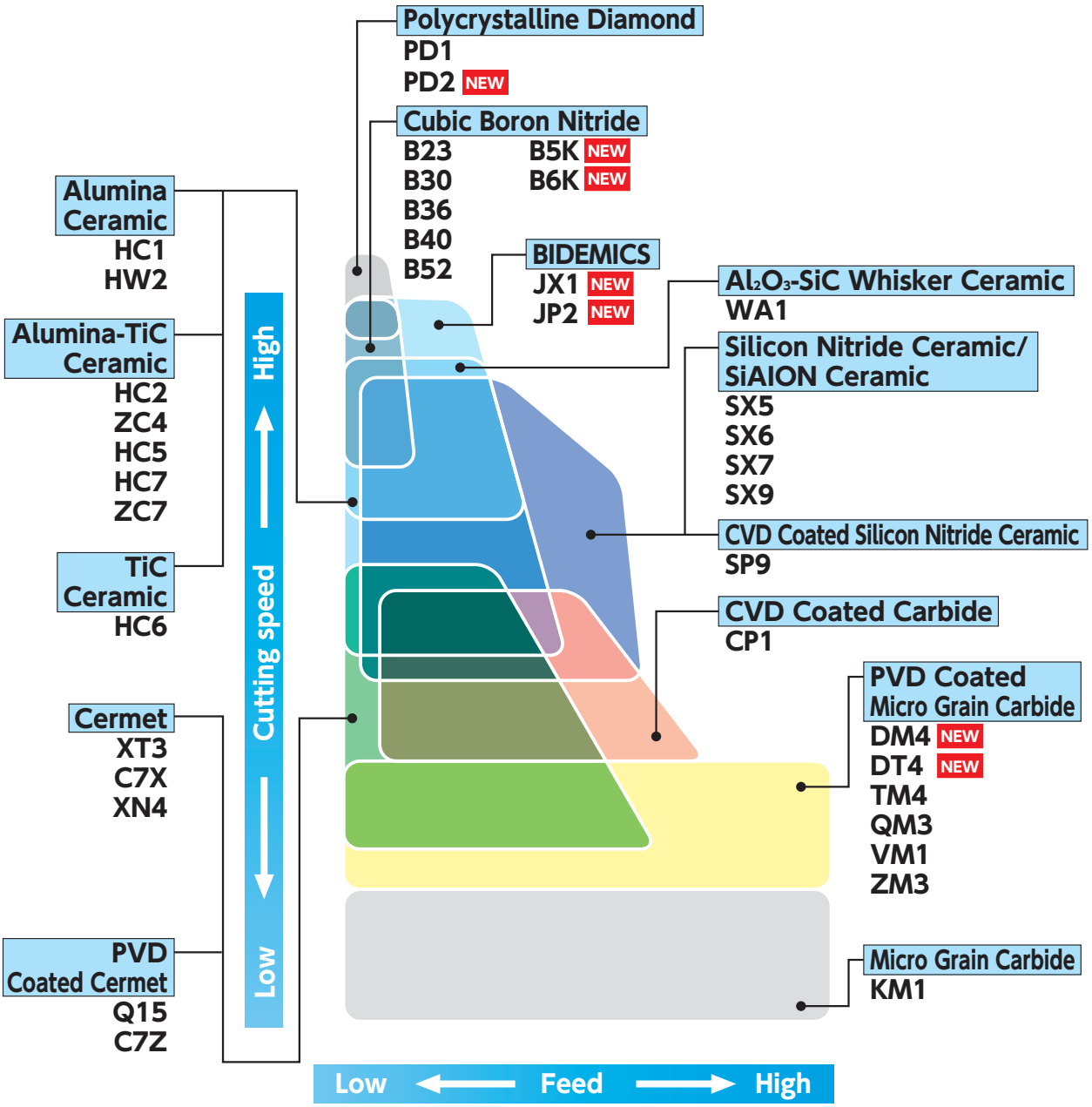
➡ I 22

C

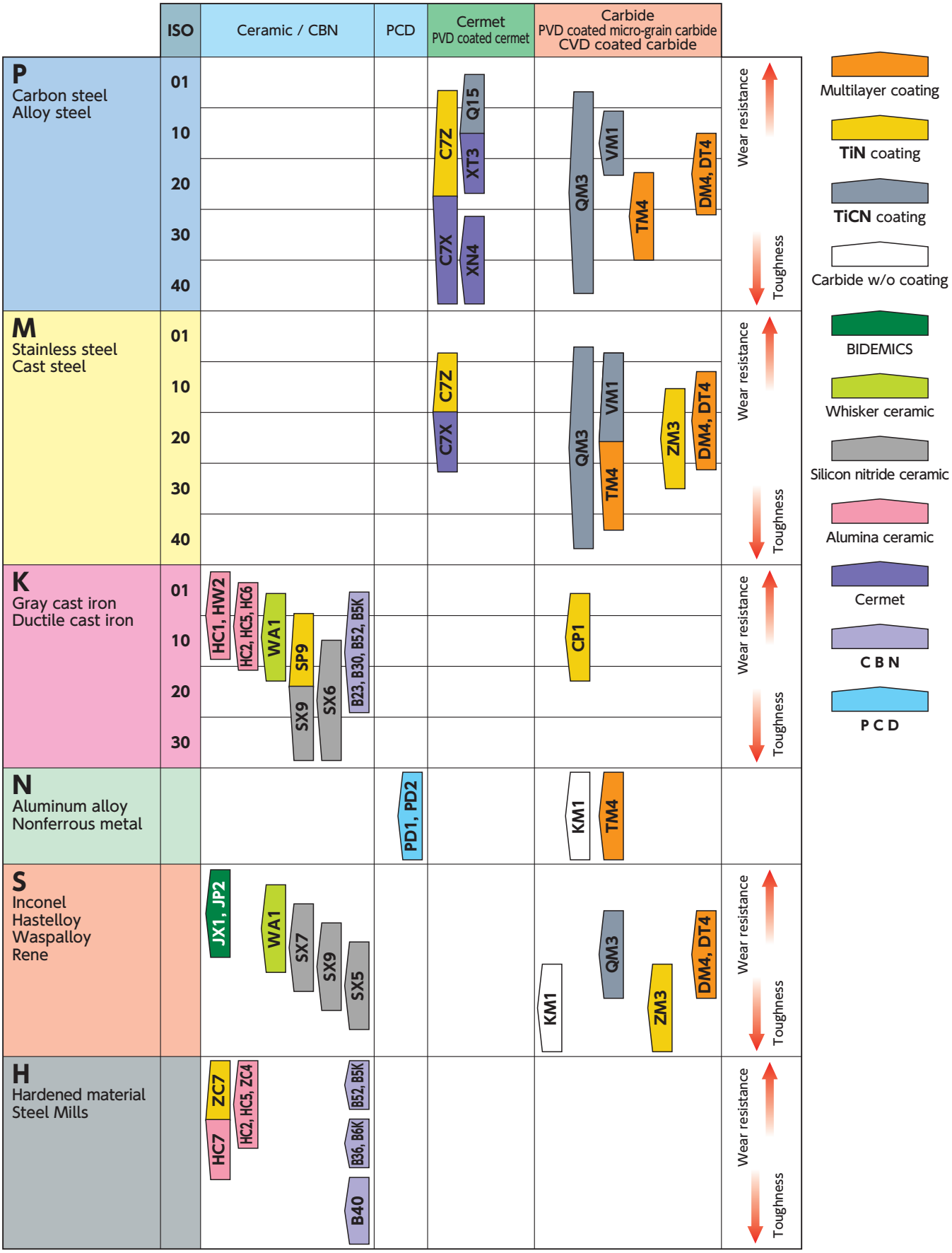
Tool Materials / Selection Guide

- Application Range of NTK Insert Grades ····· C2
- Recommended Types of Materials and Applications : BIDEMICS, Ceramics and CBN····· C4
- Recommended Types of Materials and Applications : Cermet and Carbide ····· C6
- ANSI / ISO Insert Nomenclature ··· C8
- Chipbreakers for Positive Inserts ··· C10
- Chipbreakers for Negative Inserts ····· C14

Application Range of NTK Insert Grades



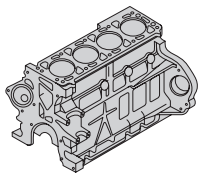
Insert grade recommendation by work material type



Tool Materials / Selection Guide

Recommended Types of Materials and Applications : BIDEMICS, Ceramics and CBN

●1st Choice ○2nd Choice

Work material		Tool Grade		Application: Roughing	Application: Semi-finishing	Application: Finishing	Application: Continuous	Application: Light interruption	Application: Interruption	Coolant: Dry	Coolant: Wet
Heat-resistant alloy  * Based on Using ½" IC Insert except JP2		BIDEMICS	JX1								●
			JP2								●
		Ceramic	SX5								● (Turning)
			SX7 / SX9							● (Milling)	● (Turning)
			WA1							○	●
Gray cast iron  		Ceramic	SX6							●	●
			SP9							●	○
			HC1 / HW2							●	
			HC2 / HC6							●	●
			WA1							●	●
		CBN	B99							●	●
			B23 / B30							○	●
Chilled Liners 		Ceramic	HW2							●	
			HC2							●	○
Ductile cast iron 		Ceramic	SP9							○	●
			HC6							○	●
		CBN	B52							○	●
Hardened material 		Ceramic	ZC4 / ZC7							●	●
		CBN	B5K / B52							○	●
			B6K / B36							●	●
			B40							●	○
Rolls  * Based on Using ½" IC Insert	Steel Carbide	Ceramic	WA1							●	
			HC7							●	
		CBN	B23/B6K/B36							●	
	Cast iron	Ceramic	HC5/HC2/HC7							●	
		CBN	B30							●	
	Ductile iron	Ceramic	HC5 / HC6							●	
		CBN	B5K / B52							●	



• Starting speed based on using CNGA432 insert

Tool Materials / Selection Guide

Recommended Types of Materials and Applications : Cermet and Carbide

●1st Choice ○2nd Choice

Work material		Tool Grade		Application		Continuous / Light interruption / Interruption	Coolant	
				Roughing	Semi-finishing		Dry	Wet
400 series Stainless	Hardness (HB) 160-350	Cermet	C7X/C7Z	●				●
		Cermet	C7X/C7Z/XT3		●			●
		Carbide	QM3/DM4/DT4	●	●			●
	Milling	Cermet	C7X/C7Z	●	●		●	
300 series Stainless	Hardness (HB) 200-350	Cermet	C7X/C7Z	●				●
		Cermet	C7X/C7Z/XT3		●			●
		Carbide	QM3/DM4/DT4	●	●			●
	Milling	Cermet	C7X/C7Z	●	●		●	
Precipitation Hardness (17-4PH etc)	Hardness (HB) 175-350	Cermet	C7X/C7Z		●			●
		Carbide	QM3/DM4/DT4	●	●			●
	Milling	Cermet	C7X/C7Z	●	●		●	
Carbon Steels Alloy Steels	Hardness (HB) 130-300	Cermet	C7X/C7Z	●				●
		Cermet	C7X/C7Z/XT3		●			●
		Carbide	QM3/DM4/DT4	●	●			●
	300-400	Cermet	C7X/C7Z	●				●
		Cermet	C7X/C7Z/XT3		●			●
		Carbide	QM3/DM4/DT4	●	●			●
	Milling	Cermet	C7X/C7Z	●	●		●	
Tool Steels	Hardness (HRC) -45 Turning	Cermet	C7X/C7Z/XT3		●			●
		Carbide	QM3/DM4/DT4	●	●			●
	Milling	Cermet	C7X/C7Z		●		●	

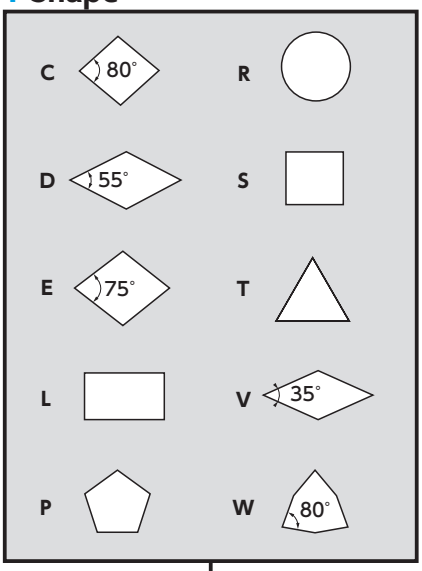


• Starting speed based on using CN..432 insert

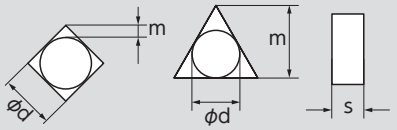
Tool Materials / Selection Guide

ANSI / ISO Insert Nomenclature

1 Shape



3 Tolerance Class



Symbol	d (inch)	m (inch)	s (inch)
A	±.0010	±.0002	±.0010
F	±.0050	±.0002	±.0010
C	±.0010	±.0005	±.0010
H	±.0050	±.0005	±.0010
E	±.0010	±.0010	±.0010
G	±.0010	±.0010	±.0050
J	±.0020	±.0020	±.0050
K	±.002~±.005	±.0005	±.0010
L	±.002~±.005	±.0010	±.0010
M	±.002~±.005	±.003~±.007	±.0050
N	±.002~±.005	±.003~±.007	±.0010
U	±.003~±.010	±.005~±.015	±.0050

C S T

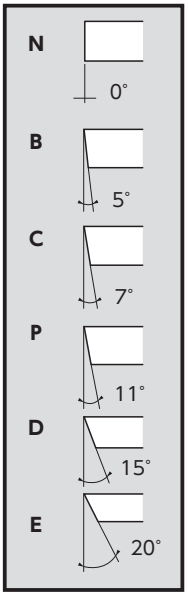
Inscribed Circle	M tolerance d (inch)	M tolerance m (inch)
1/4"	±.002	±.003
3/8"	±.002	±.003
1/2"	±.003	±.005
5/8"	±.004	±.006
3/4"	±.004	±.006
1"	±.005	±.007

D K

Inscribed Circle	M tolerance d (inch)	M tolerance m (inch)
1/4"	±.002	±.004
3/8"	±.002	±.004
1/2"	±.003	±.006
5/8"	±.004	±.006
3/4"	±.004	±.007

	1	2	3	4
Inch	S	N	G	A
Metric	S	N	G	A

2 Clearances



4 Type

Type	Symbol	Type	Symbol
	N (E)	70°–90°	H
	F		
	R	70°–90°	B
	A		
	G	40°–60°	T
	M	40°–60°	W
Special design	X		

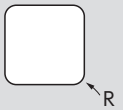
6 Thickness

Thickness S(inch)	Inch	Metric
3/32"	1.5	02
1/8"	2	03
5/32"	2.5	T3
3/16"	3	04
1/4"	4	06
5/16"	5	07
3/8"	6	09
1/2"	8	12

5 Symbol for Insert Size

Inch		Metric						
Inscribed Circle		C	D	R	S	T	V	W
1/4"	2	06	07	06	11	11	04	
3/8"	3	09	11	09	16	16	06	
1/2"	4	12	15	12	22	22	08	
5/8"	5	16	19	15	27	27	10	
3/4"	6	19	23	19	33	33	13	
1"	8	25	31	25	44	44	17	

7 Corner Radius



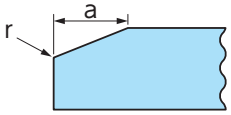
Corner Radius	Inch	Metric
1/64"	1	04
1/32"	2	08
3/64"	3	12
1/16"	4	16
5/64"	5	20
3/32"	6	24
1/8"	8	32

4	3	3	T	04	20
5	6	7	8	9	10
12	04	12	T	010	20

8 Edge Condition

Sharp	FNX08
Honed	E
Chamfered	T
Chamfered and Honed	Z
	S
	U
Double Chamfered	K
Double Chamfered and Honed	J
	P
	Q

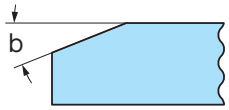
9 Negative Land Width



	Description		a (inch)	r (inch)
	inch	metric		
E	01	002	–	.001
	02	004	–	.002
T	02	005	.002	–
	03	008	.003	–
	04	010	.004	–
	05	012	.005	–
	06	015	.006	–
	08	020	.008	–
Z	04	010	.004	.001
	08	020	.008	.001
S	04	010	.004	.002
	08	020	.008	.002
U	16	040	.016	.003
K	28	070	.028	–
J	60	150	.060	.001
P	71	180	.071	.002
Q	95	240	.095	.003

Note: K, J, P & Q show its primary land width

10 Negative Land Angle

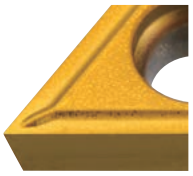
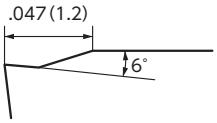
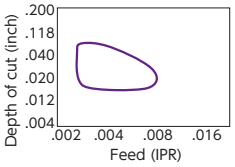
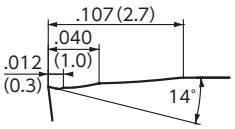
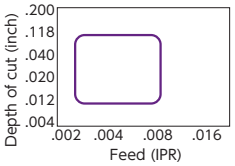
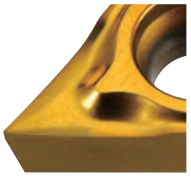
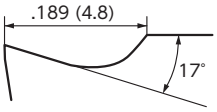
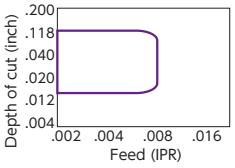
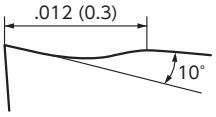
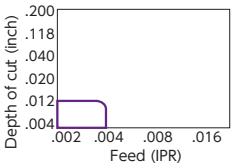
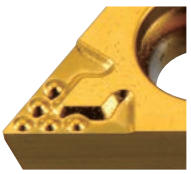
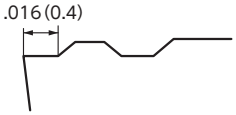
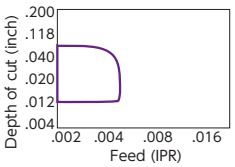
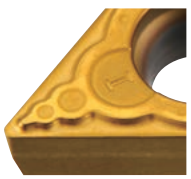
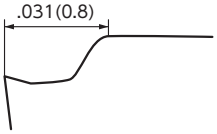
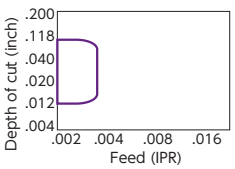


Description	b
10	10°
15	15°
20	20°
25	25°
30	30°

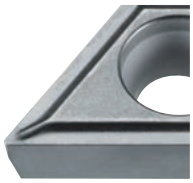
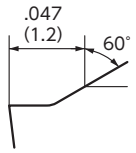
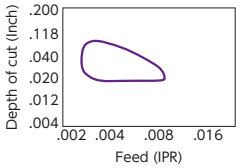
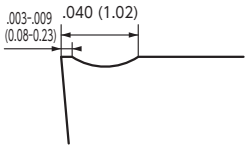
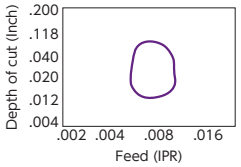
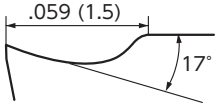
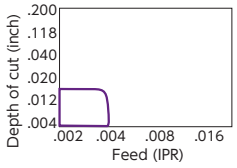
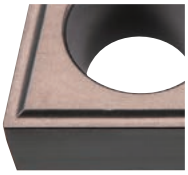
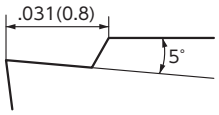
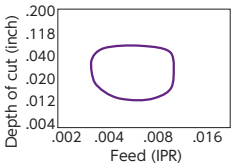
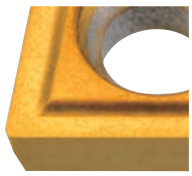
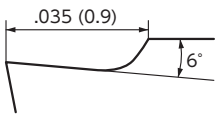
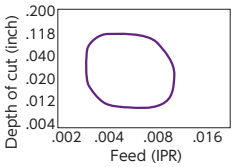
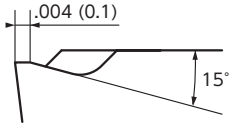
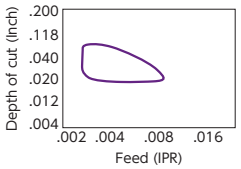
Note: K, J, P & Q show its primary land angle

Chipbreakers for Positive inserts

Molded Chipbreakers for Positive Inserts

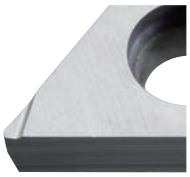
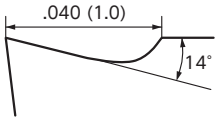
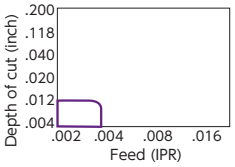
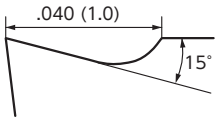
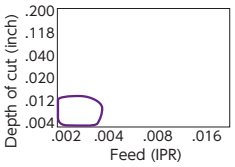
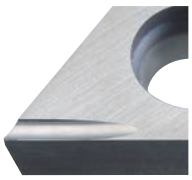
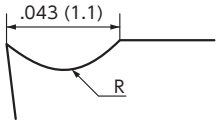
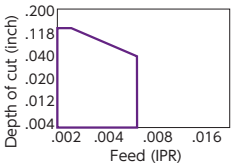
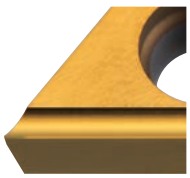
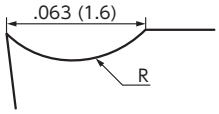
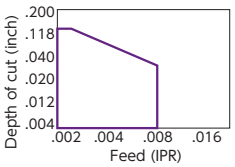
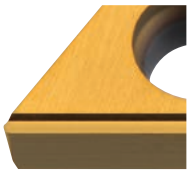
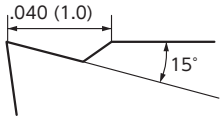
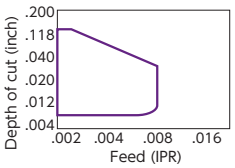
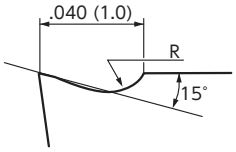
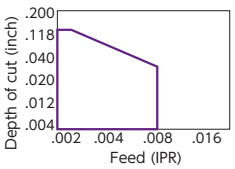
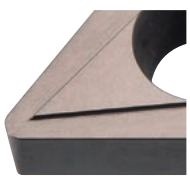
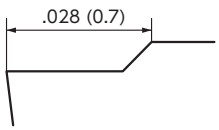
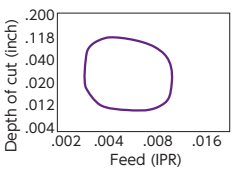
Name	Chipbreaker Geometry		Features	Chip Control Range
AM3	 ➡N8	 DCGT32.508 shown	●All purpose chipbreaker ●Sharp edge with toughness	
YL	NEW  WATCH ON YouTube ➡N8	 DCGT11T302MYL	●Great combination of sharpness and toughness ●Covers extremely wide range ●Excellent chip control	
CL	 WATCH ON YouTube ➡N8	 DCGT32.508M shown	●Sharpest molded Chipbreaker ●Excellent chip control ●Less tool pressure	
AMX	 WATCH ON YouTube ➡N8	 DCGT32.508M shown	●Designed for very light depth of cut ●Good sharpness	
AZ7	 WATCH ON YouTube	 DCGT32.508M shown	●Excellent chip control at light feed and light depth of cut	
ZR		 DCMT32.508 shown	●Covers a wide depth of cut range under high-speed and low-feed conditions	

Molded Chipbreakers for Positive Inserts (continued)

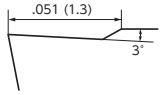
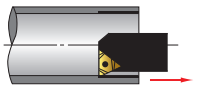
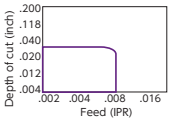
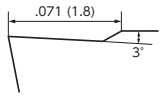
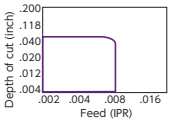
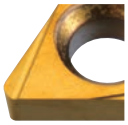
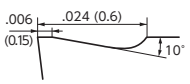
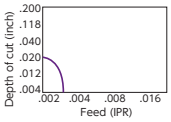
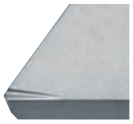
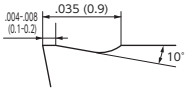
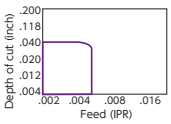
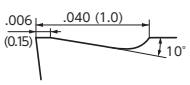
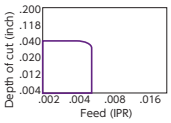
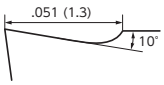
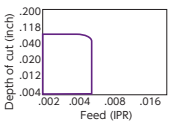
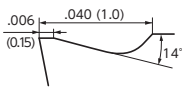
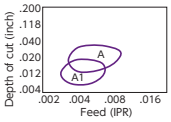
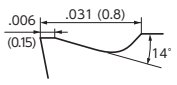
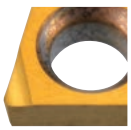
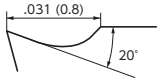
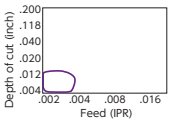
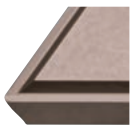
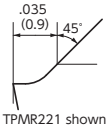
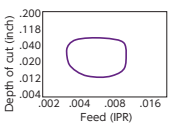
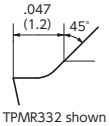
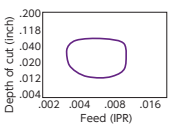
Name	Chipbreaker Geometry		Features	Chip Control Range
AF3		 DCGT32.508 shown	●Good chip control	
GA		 VBGT332 shown	●Sharp and tough cutting edge	
FG ➡O16		 TPGH221 shown	●Exclusively designed for ID boring ●Evacuates chips BACKWARD at light depth of cut ●Sharp cutting edge with high rake angle	
AF1		 CCGT32.508 shown	●Produces remarkable surfaces in semi-finishing of steels	
AM5		 CPGH21.508 shown	●Chipbreaker for boring ●Provides both good cutting performance and chip control	
QB		 WCGT5208 shown	●Sharp and tough cutting edge	

Chipbreakers for Positive inserts

Ground Chipbreakers for Positive Inserts

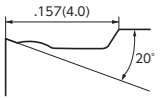
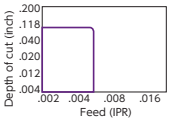
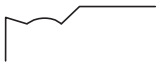
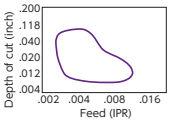
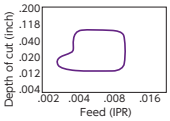
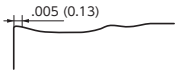
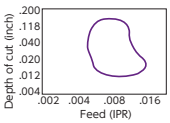
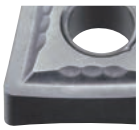
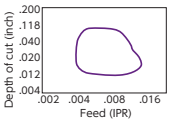
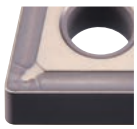
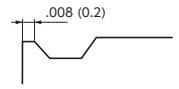
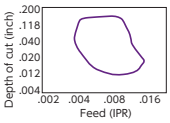
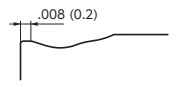
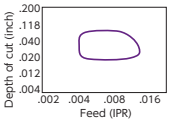
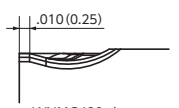
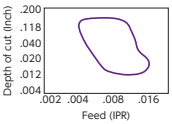
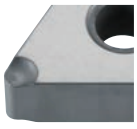
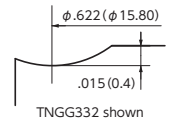
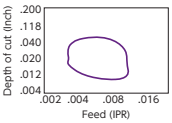
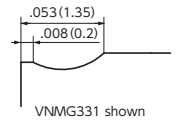
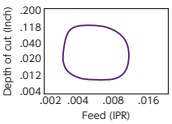
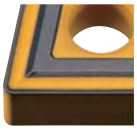
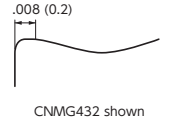
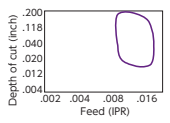
Name	Chipbreaker Geometry		Features	Chip Control Range
KHG		 DCET32.508 shown	●Excellent chip control on finishing cuts ●For super high-precision machining ＊Precision tolerance in corner radius: ±.0004"	
K		 TPGHP7308 shown	●Superb chip control on finishing applications ●Sharp cutting edge with the high rake angle	
UHG		 DCET32.504M shown	●Sharp cutting edge ●Covers wide cutting condition range ＊Precision tolerance in corner radius: ±.0004"	
U/U1		 DCGT32.508 shown	●Sharp cutting edge prevents materials from work hardening	
S		 DCGT320.508 shown	●Standard ground chipbreaker with wide cutting condition coverage ●Sharp cutting edge with excellent chip control	
AT		 DCGT32.508 shown	●Excellent adhesion resistance with dimensional stability ●Best for small diameter parts and for machining low carbon steels	
FM		 DCGT32.508 shown	●Full-peripheral ground chipbreaker	

Ground Chipbreakers for Positive Inserts (continued)

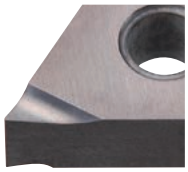
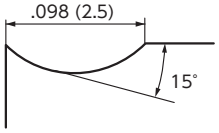
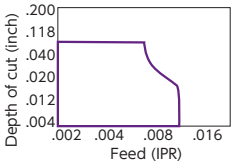
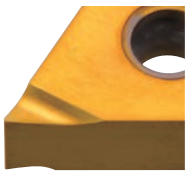
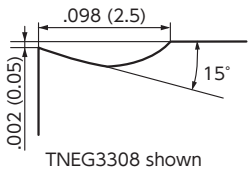
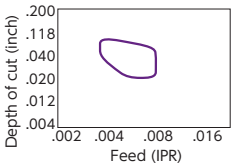
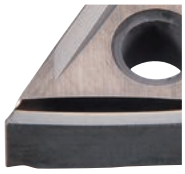
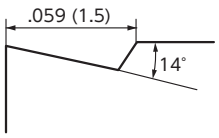
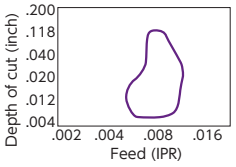
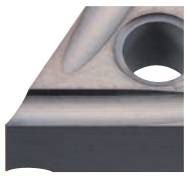
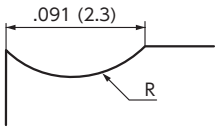
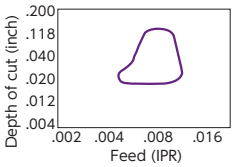
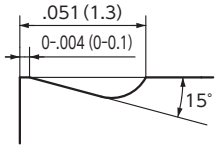
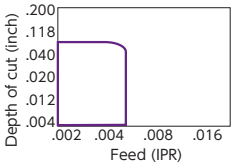
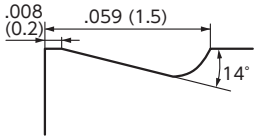
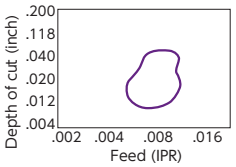
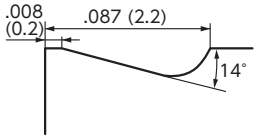
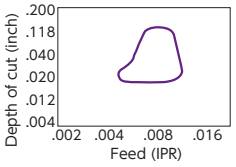
Name	Chipbreaker Geometry		Features	Chip Control Range
F05	 ➡O16	 TPGP5208 shown	●Exclusively designed for ID boring ●Evacuates chips BACKWARD ●Excellent choice for blind hole machining  Chip backward	
F1	 ➡O16	 TPGP2208 shown		
B1		 TCGP5208 shown	●Stable cutting when boring thanks to sharp and tough cutting edge	
P1		 TPGR321R shown		
B2		 TPGP7308 shown		
B3		 TPGP6308 shown		
A		 CPGP0308 shown	●Tough cutting edge and good chip control ●General-purpose ID chipbreaker	
A1		 CPGP8308 shown		
A2		 ERGP52Y shown	●Control chips at light feed and light depth of cut ●Sharp cutting edge due to large rake angle	
A283		 TPMR221 shown	●Breaks chip into small pieces	
A305		 TPMR332 shown		

Chipbreakers for Negative inserts

Molded Chipbreakers for Negative Inserts

Name	Chipbreaker Geometry		Features	Chip Control Range
UL	 WATCH ON YouTube ➡O34	 TNGG3304M shown	●Negative insert with a positive insert's chipbreaker ●Reduced burr ●Improved microfinish ●Superb advantage in cost per corner over positive inserts	
ZF1		 CNMG432 shown	●Produce small curled chips on finishing cuts	
WM		 CNMG431 shown	●Remarkable chip control in the low feed range	
ZW1		 CNMG432 shown	●Versatile chipbreaker with remarkable chip control performance in a wide range of conditions	
ZP		 CNMG432 shown	●Double-positive rake and sharp cutting edge ●Low tool pressure even at heavy depth of cut	
Z5		 CNMG432 shown	●Very tough insert ●Designed for machining with heavy interruption	
WV		 CNMG432 shown	●Offers the advantages of both a tough cutting edge and chip control	
WR		 WNMG432 shown	●Designed for cermet ●Covers wide range of conditions	
R1		 TNGG332 shown	●Sharp cutting edge ●Good chip control	
GE		 VNMG331 shown	●Sharp and tough cutting edge	
G		 CNMG432 shown	●Tough chipbreaker for roughing with exceptional stability	

Ground Chipbreakers for Negative Inserts

Name	Chipbreaker Geometry	Features	Chip Control Range
DA	  TNGG3304 shown	●Excellent chip control and sharp cutting edge	
D1	  TNEG3308 shown		
N1	  TNGG3308 shown	●Double-positive design with the large rake angle ●Excellent chip control	
U2	  TNGG3308 shown	●Reduced burr and work hardening due to high rake design	
L2	  TNGG332R shown	●General-purpose chipbreaker with excellent toughness and chip control	
B	  TNGG331 shown		
C	  TNGG3308 shown		

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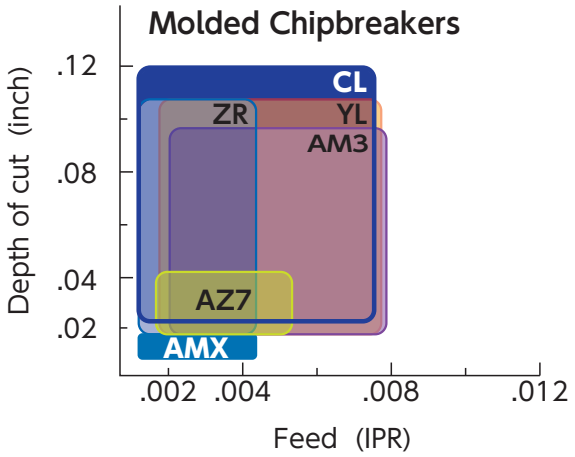

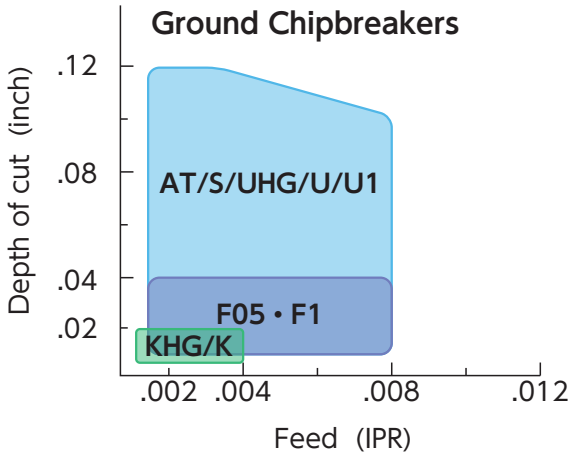

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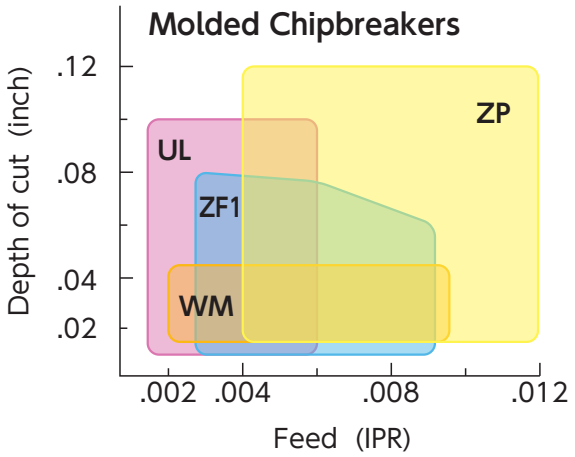
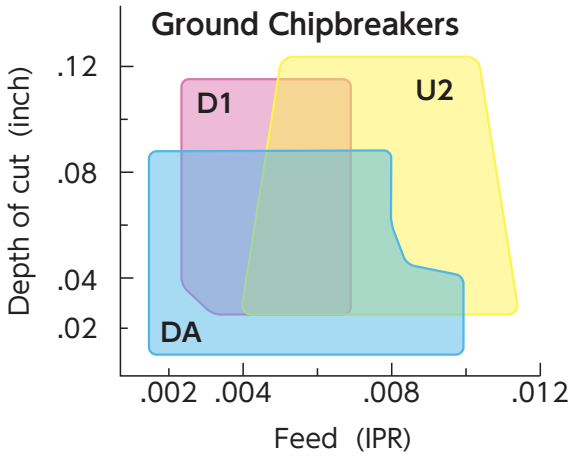
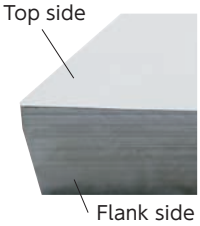
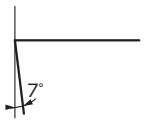
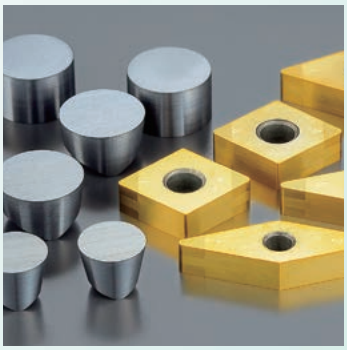




Flat Top with Mirror Finish - Good for non-ferrous materials like PEEK, Brass, Aluminum and Copper -

Name	Chipbreaker Geometry		Features	Chip Control Range
V P H			●Very up-sharp edge with mirror finish V: Mirror finish on Top and Flank side with R0 nose radius P: Mirror finish on Top and Flank side H: Mirror finish on Top side	—

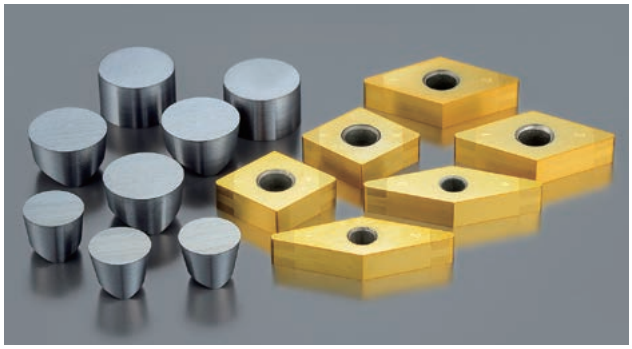
D



Grade Introduction

- BIDEMICS ····· D2
  - Guideline for Machining Heat Resistant Alloys ····· D6
- Ceramics ····· D15
- BIDEMICS (Brazed) / CBN / PCD ··· D29
- Cermet / Coated Cermet ····· D35
- Carbide / Coated Carbide ····· D37

BIDEMICS



NTK Cutting Tools introduces BIDEMICS; a proprietary group of advanced composite cutting tool materials. **[Patents Pending]**. BIDEMICS have been specifically developed to significantly improve productivity when machining Heat Resistant Alloys. Also BIDEMICS have specific advantages compared to traditional whisker reinforced ceramics.
The first BIDEMICS grades to be commercially available are **JX1 and JP2**.

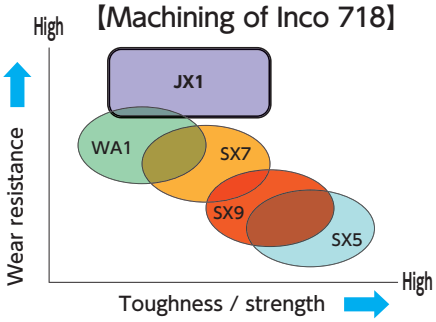
JX1 Semi-finishing & Finishing / Rough no scale

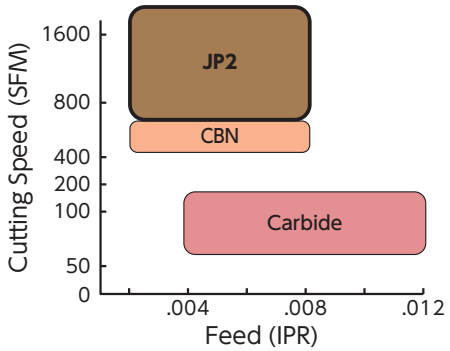
- Up to 1600 SFM speed capability
- Much longer tool life at Whisker ceramics's speed range
- Better wear resistance and notching resistance than Whisker ceramics
- Superior surface finish vs. Whisker ceramics

JP2 Finishing

- 10 to 15x speed capability vs. carbide
- Better wear resistance and notching resistance than CBNs
- Superior surface finish to Carbide or CBN
- Strong brazing technology

【Heat-resistant alloy】





Physical properties

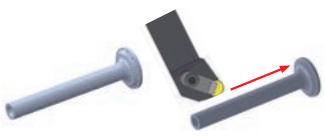
Grade	Hardness HRA	Bending Strength MPa	Thermal Conductivity W/m・K
JX1	**95.5**	**1,800**	**40**
WA1	94.5	1.200	35

- *Harder than Whisker Ceramics for improved tool life and superior surface finishes*
- *Tougher than Whisker Ceramics in recommended applications*

1 Longer tool life

JX1's combination of High Hardness, Superior Thermal Conductivity and Improved Strength compared to whisker ceramics results in significantly longer tool life when applied at typical whisker ceramic speeds, feeds, and depth of cut.

Turbine shaft (Inco718 pre-machined)		
	Comp. whisker	JX1
Shape	RNG45	←
Cutting speed (SFM)	800	←
Feed (IPR)	.008	←
Depth of cut (inch)	.080	←
	WET	←
NTK : JX1	10 min	
Competitor's whisker ceramic	3 min	

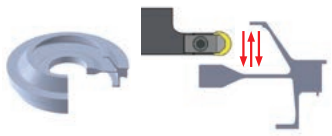


2 Higher speeds

JX1's Superior Physical Properties compared to whisker ceramic enable you to increase speeds; potentially as much as 2X whisker ceramic speeds; increasing productivity and potentially offsetting needs for additional equipment to meet increasing demands.

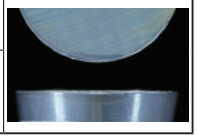
Turbine disk (Inco718 rough)

	Comp. whisker	JX1
Shape	RPGX45	←
Cutting speed (SFM)	650	1300
Feed (IPR)	.006	←
Depth of cut (inch)	.080	←
	WET	←



NTK : JX1	120 cc/min
Competitor's whisker ceramic	60 cc/min

JX1



Chips break easily at higher cutting speed vs typically continuous chips of Super Alloy materials. This makes more efficient chip removal.

JX1



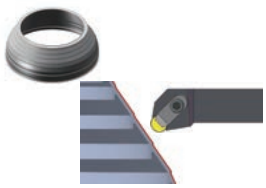
Whisker Ceramic



3 Works well on wide range of High Temperature Alloys

Turbine case (718Plus semi finish)

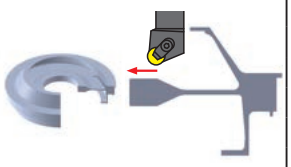
	Comp. coated whisker	JX1
Shape	RNG45	←
Cutting speed (SFM)	800	←
Feed (IPR)	.010	←
Depth of cut (inch)	.020	←
	WET	←



NTK : JX1	3 pass	
Competitor's whisker ceramic	1 pass	

Turbine disk (Rene104 rough)

	Comp. whisker	JX1
Shape	RNG45	←
Cutting speed (SFM)	700	←
Feed (IPR)	.007	←
Depth of cut (inch)	.040	←
	WET	←

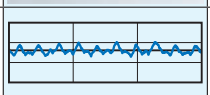
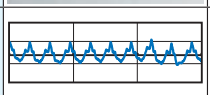
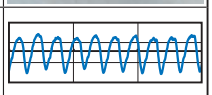


NTK : JX1	4 pass	
Competitor's whisker ceramic	1 pass	

JX1's Unique Physical Properties enables machining of newer compositions of difficult to machine High Nickel Alloys, High Nickel/Cobalt alloys, or powdered metallurgy alloys that are becoming more common in the market .

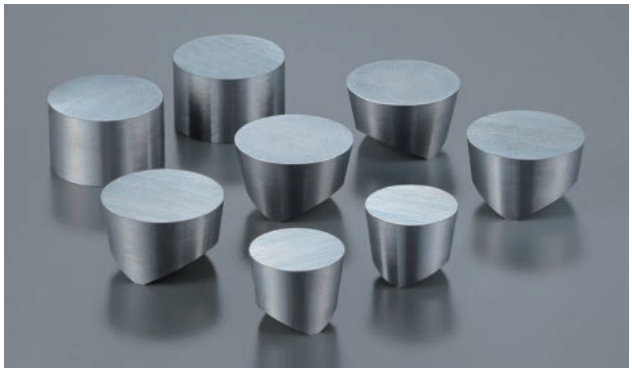
4 Superior surface finish

JP2's Outstanding Wear Resistance and Notching Resistance results in work piece surface finishes consistently superior to either CBN or Carbide

	JP2	CBN	Carbide
			
Machined surface			
Roughness			
Ra	0.64 μm	1.18 μm	2.75 μm
Rz	3.36 μm	5.56 μm	9.64 μm
Cutting speed	800 SFM	←	120 SFM
Feed rate	.006 IPR	←	←
Cycle time	3.3 min	←	14.7 min
Removed chip	48 cc	←	←

JX1

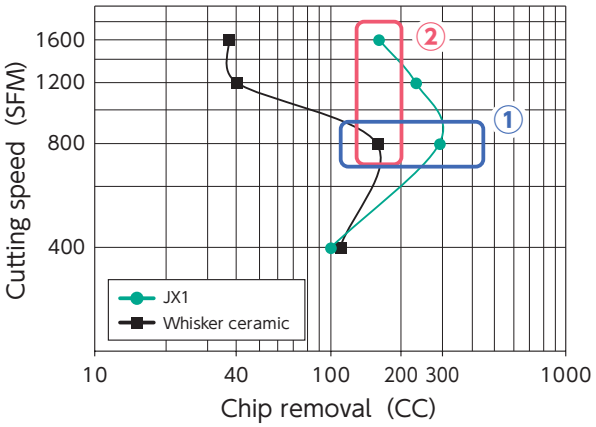
New Composite Material for Super Alloy Machining



Features

Patents Pending

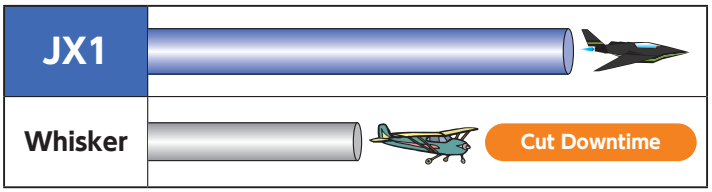
- *Significantly extended tool life compared to whisker ceramics*
- *Double cutting speed potential compared to whisker ceramics*
- *Superior surface finish compared to whisker ceramics*
- *Applicable to powder-metallurgical heat resistant alloys*



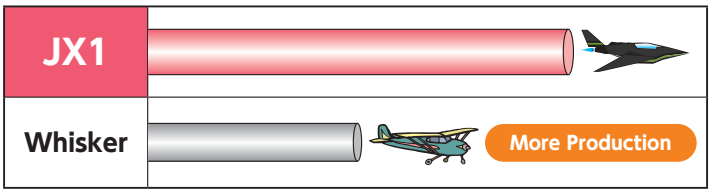


Increase Productivity vs. Whisker Ceramics

① Significantly extended tool life at same speed



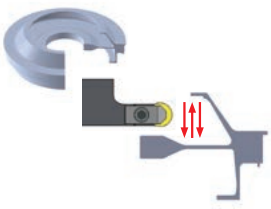
② Double speed capability



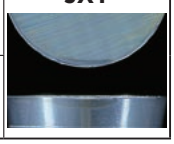
Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
JX1	Heat Resistant Alloy	Turning	Rough no scale	600-**1600**	.005-.011	.040-.100		●
			Semi finishing	600-**1600**	.004-.010	.020-.080		●

Turbine disk (Inco718 rough)

	Comp. whisker	JX1
Shape	RPGX45	←
Cutting speed (SFM)	650	1300
Feed (IPR)	.006	←
Depth of cut (inch)	.080	←
	WET	←

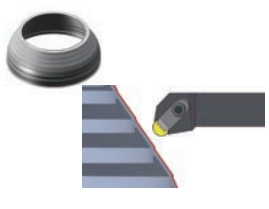


NTK : JX1	120 cc/min	JX1
Competitor's whisker ceramic	60 cc/min	



Turbine case (718Plus semi finish)

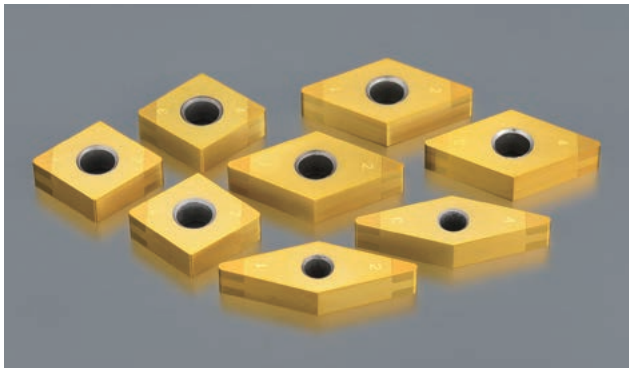
	Comp. coated whisker	JX1
Shape	RNG45	←
Cutting speed (SFM)	800	←
Feed (IPR)	.010	←
Depth of cut (inch)	.020	←
	WET	←



NTK : JX1	3 pass	
Competitor's whisker ceramic	1 pass	

JP2

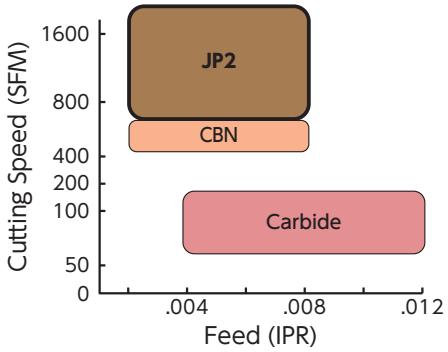
Ultra High-Speed Finishing of Super Alloys

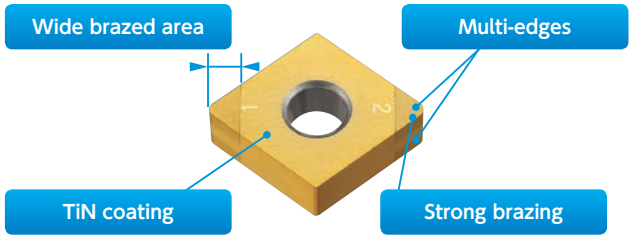


Features

Patents Pending

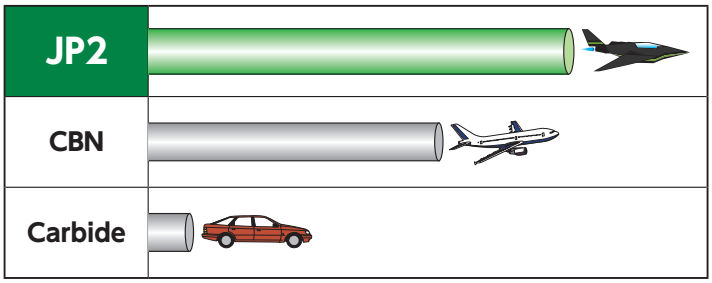
- *High speed finish turning can be performed at 800SFM or higher*
- *Superior wear resistance compared to CBN's*
- *Superior notching resistance vs CBN or carbides*
- *Superior surface finishes vs CBNs and coated carbides*





Increase Productivity vs. Carbide

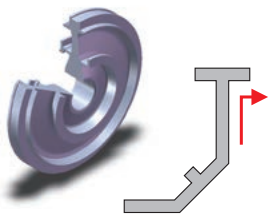
① 10 to 15 times higher speed capability



Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
JP2	Heat Resistant Alloy	Turning	Finishing	600-**1700**	.002-.007	.005-.030		●

Disk (Inco718 Finishing)

	Competitor's Coated Carbide	JP2
Shape	CNGG432	CNGA432
Cutting speed (SFM)	70	800
Feed (IPR)	.003	←
Depth of cut (inch)	.010	←
	WET	←
Tool life	1pc	←

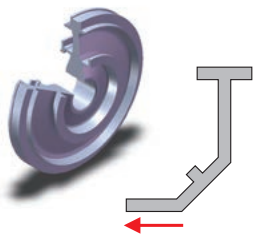


NTK : JP2 — 525 cc/min

Competitor's Coated Carbide — 45 cc/min

Disc (Inco718 Semi-finishing / Finishing)

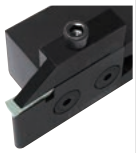
	Competitor's Coated Carbide	JP2
Shape	CNGP432	CNGA432
Cutting speed (SFM)	150	600
Feed (IPR)	.0035	←
Depth of cut (inch)	.015+.005	←
	WET	←
Tool life	1pc	4pcs



NTK : JP2 — 4 pcs with 4 times higher productivity

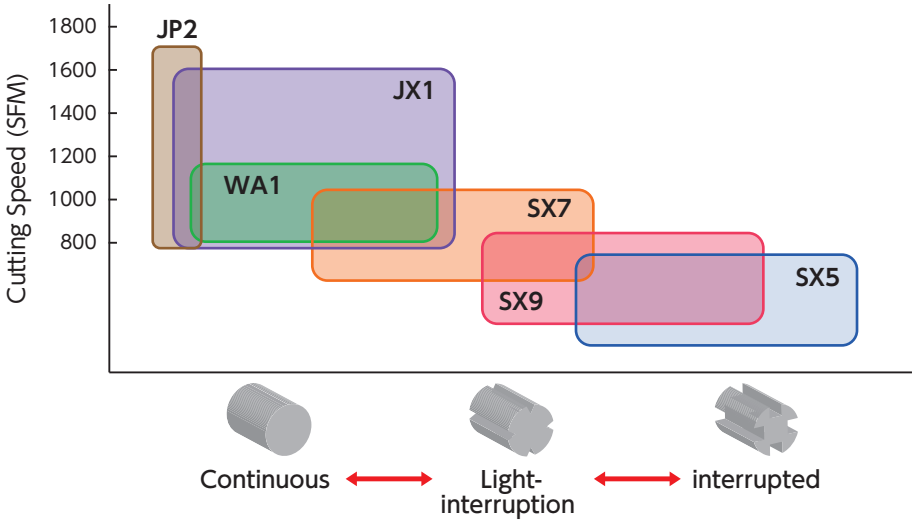
Competitor's Coated Carbide — 1 pc

Insert Grade

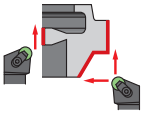
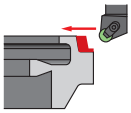
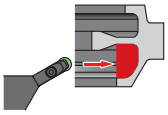
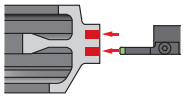
Category	Grade	Applications	Scale	No scale	Profiling	Finishing	Grooving	Milling
								
BIDEMICS	JX1	Special grade with higher speed and longer tool life potential		●	●			
	JP2	Special grade for finish turning				●		
Whisker	WA1	General versatile grade for turning		○	○		○	
SiAlON	SX5	Best grade for scale of Waspaloy	●				○	
	SX7	General versatile grade for turning Best grade for milling	○	○	○		●	●
	SX9	Best grade for scale of Inco718	●					○

● 1st Choice ○ 2nd Choice

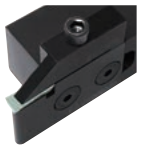
Grade Map



Applications

	Rough with scale	Rough & semi-finish	Profiling	Grooving	Milling
					

Applications

Application	Grade	Work material	Cutting speed (600 800 1000 1200 1400 1600)	Feed (.004 .008 .012 .016 .020)	Depth of cut (.020 .040 .060 .080 .100)	Coolant
Rough with Scale 	SX5	Waspalloy	650 (600-800) SFM	.012 (.008-.014) IPR	.080 (.040-.200)"	WET
	SX9	Inco718	650 (600-800) SFM	.012 (.008-.014) IPR	.080 (.040-.200)"	
	SX7	Overall	800 (600-900) SFM	.008 (.004-.009) IPR	.080 (.040-.200)"	
Rough no Scale 	JX1	Overall	700-1300 (600-1600) SFM	.008 (.005-.011) IPR	.070 (.040-.100)"	WET
	SX7	Waspalloy	700 (600-900) SFM	.009 (.006-.012) IPR	.080 (.040-.100)"	
	WA1	Inco718	800 (600-1000) SFM	.008 (.005-.010) IPR	.070 (.040-.100)"	
Profiling & Semi-Finish 	JX1	Overall	700-1500 (600-1600) SFM	.008 (.004-.010) IPR	.060 (.040-.080)"	WET
	SX7	Waspalloy	800 (600-900) SFM	.008 (.005-.010) IPR	.060 (.040-.080)"	
	WA1	Inco718	800 (600-1100) SFM	.008 (.004-.010) IPR	.060 (.040-.080)"	
Finishing 	JP2	Overall	700-1600 (600-1700) SFM	.004 (.002-.007) IPR	.010 (.005-.030)"	WET
Grooving 	SX5	Waspalloy	700 (600-800) SFM	.006 (.003-.007) IPR	When using SX7 / SX5, increase feed rates 100% vs. Whisker Ceramics	WET
	SX7	Inco718	750 (600-900) SFM	.0045 (.003-.006) IPR		
	WA1	Overall	800 (600-1100) SFM	.003 (.002-.004) IPR		

Application	Grade	Work material	Cutting speed (1500 2000 2500 3000 3500 4000)	Feed (.002 .003 .004 .005 .006)	Depth of cut (.020 .040 .060 .080 .100)	Coolant
Milling 	SX7	Overall	2700 (2000-4000) SFM	.004 (.003-.005) IPT	.070 (.040-.100)"	DRY
	SX9	Overall	2500 (1500-3500) SFM	.005 (.004-.006) IPT	.080 (.040-.100)"	

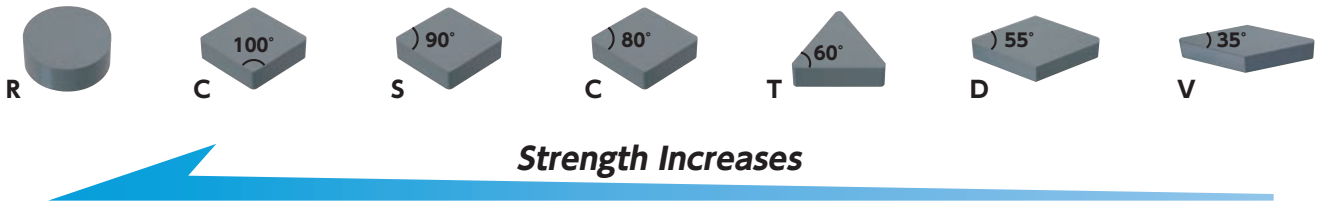
Guidelines For Success

Keys to successful machining of Heat Resistant Alloys

- NTK's BIDEMICS and ceramics deliver extremely high productivity to heat resistant alloy machining
- BIDEMICS offer excellent flank wear resistance and SiAlON ceramics provide exceptional notch wear resistance
- BIDEMICS enable ultra high-speed finishing with outstanding shiny surface finishes
- Stable machining can be performed by optimizing cutting conditions and tooling

Use strong insert shapes

Maximize geometry for strength productivity

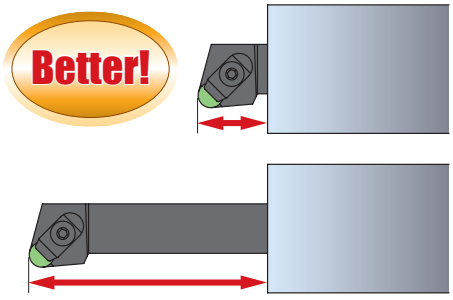


Use largest nose radius

Maximize insert nose radius for strength and longer tool life
Take into account that the larger the nose radius the greater the tool pressure
Typical application machining heat resistant alloys use a RNG45 insert for roughing and CNGA43 style for finishing

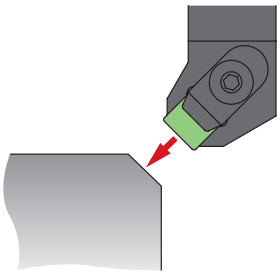
Minimize overhang

Too much overhang may cause chatter or insert breakage



Pre-chamfering

Pre-chamferring the part reduces the potential for insert chipping or breaking upon the entry or exit point of work material



No dwelling

Inserts wear out when rubbing the part instead of cutting

Coolant

When turning with JX1, SX7, SX9 ,SX5 ,WA1 a flood coolant condition should be used
In some cases where a high interruption is encountered it may be best to cut-off the coolant
No coolant should be used while milling with SX7 & SX9

Edge preparations

Typical cutting tool applications machining Heat resistant alloys require the insert cutting edge to be sharp. Using a slight T-land or honed edge is also effective to reduce notching, flaking and built up edge

Troubleshooting

Insert Breakage



- Cutting Condition → 1 ➡D10
- Programming at Scale → 2 ➡D11
- Insert Grade → Choose tougher grade
- Insert Shape → 6 ➡D13
- Edge Preparation → 7 ➡D13

Notching



- Cutting Condition → 1 ➡D10
- Depth of Cut → 3 ➡D11
- Lead Angle → 4 ➡D11
- Programming → 5 ➡D12
- Insert Grade → Choose SiAlON ceramic

Flank Wear



- Cutting Condition → 1 ➡D10
- Insert Grade → Choose harder grade

Flaking



- Cutting Condition → 1 ➡D10
- Programming → 5 ➡D12
- Edge Preparation → 7 ➡D13

Heat

- Cutting Condition → 1 ➡D10
- Insert Shape → 6 ➡D13
- Edge Preparation → 7 ➡D13

Chatter

- Cutting Condition → 1 ➡D10
- Others → 1 ➡D13

- Grooving information → ➡ H3

Troubleshooting (continued)

1 Cutting Condition

	Cutting speed (SFM)					Feed rate (IPR)					Grade attribute				
	SX5	SX7	SX9	JX1	WA1	SX5	SX7	SX9	JX1	WA1	JX1	SX5	SX7	SX9	WA1
 Notching				↗ [a]		↗ [b]					●		●		
 Flank wear		↘ [c]				↗ [d]					●		● SX7		●
 Breakage						↘			↘		●		●		
Heat	↘			↘		↘			↘		—		—		—
Chatter	↗			↗		↘			↘		—		—		—

● 1st Choice ● 2nd Choice

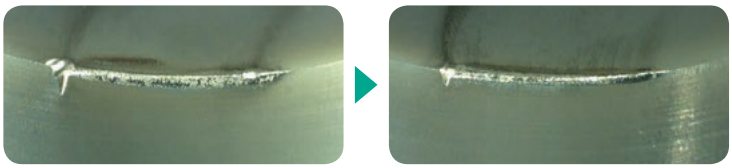
Test Results

[a] WA1 : Increase cutting speed



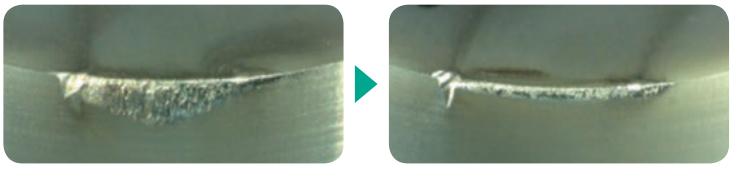
500 SFM **1800 SFM**

[b] SX7 • SX9 • SX5 : Increase feed rate



.008 IPR **.016 IPR**

[c] SX7 • SX9 • SX5 : Decrease cutting speed

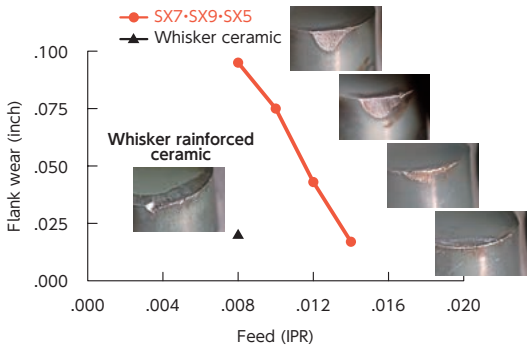


1300 SFM **500 SFM**

Note : Speed and feed rates shown are recorded test data and should not be thought of as recommended cutting conditions.

[d] SX7 • SX9 • SX5 : Increase feed rate

Feed rate increased decreases wear amount of SiAlON



Cutting condition
Work material : Inco718
Insert shape : RNG45
Cutting Speed : 800 SFM
Depth of Cut : .080"
WET

In some cases, in order to increase the wear resistance of SX7 & SX9 & SX5, the feed must be increased. By increasing the feed and utilizing the toughness of SX7 & SX9 & SX5, the inserts are off the part sooner causing less wear. Increasing the feed also decreases cycle time and improves productivity and profitability.

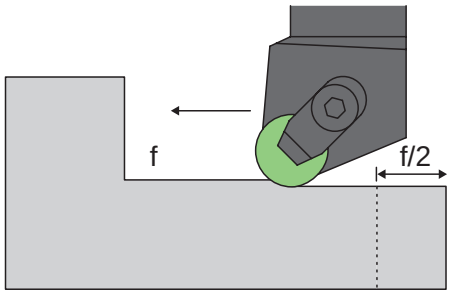
Note : Be careful to reduce the feed rate by 25%, when going into a corner.

Troubleshooting (continued)

2 Scale machining

When the insert breakage happens at the beginning of cutting scale, it might be caused by too high cutting speeds & feeds

Knowing the hardness of the work material before the cutting begins may make all the difference between success or failure. Many times on the shop floor the operator does not know the part hardness. If this information is not known then more time is needed in the testing procedure trying to find the optimum speed and feed range. As the material hardness increases, speed should decrease. Also, parts that have a forged scale work surface require a 25% speed and feed reduction until the scale is gone. This type of programming change will reduce the potential of notching as a failure mode.



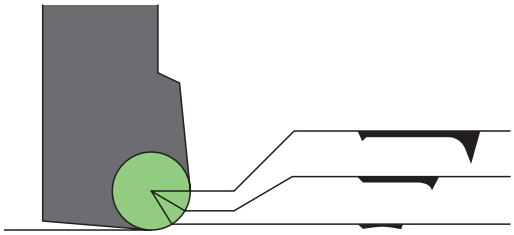
3 Depth of Cut

Depth of Cut Notching

This mode of insert failure is typical when machining heat resistant alloys. It must be controlled to prevent a catastrophic failure of the insert's cutting edge. The following information should help to minimize this probrem.

Depth of Cut

Prime consideration should be given to the effect of depth of cut upon insert tool life. There is a direct relationship between the insert radius size and the maximum depth of cut which should be taken. See the chart below for recommendations.



Recommended Depth of Cut Range (Inch)

Round insert	Maximum DOC	*Insert radius	Maximum DOC
1/4	.060...Less	1/32	.008...Less
3/8	.090...Less	3/64	.012...Less
1/2	.125...Less	1/16	.016...Less
1	.250...Less	3/32	.024...Less
*OPTIMUM DOC. IS 5-15% OF THE INSERT DIAMETER *BASED ON 0° LEAD ANGLE			

4 Lead Angle

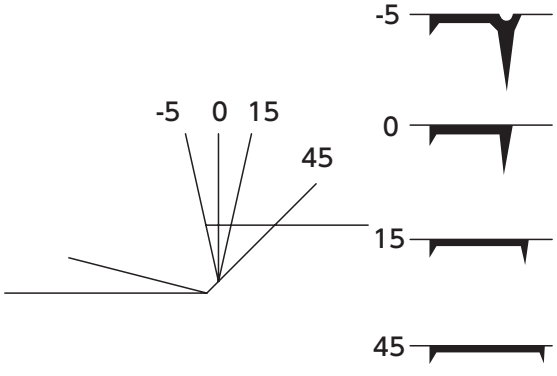
Lead Angles

When cutting heat resistant alloys consideration should be given to using the largest lead angle possible. When using large lead angles, the cutting forces are spread over a larger surface area of the insert. This will also improve tool life and surface finish while reducing notching. As the lead angle increases the chip will flow more easily.

Feeds

Utilize the superior strength characteristic of SX7, SX9, SX5 SiAlON ceramics. If excessive wear is encountered while machining heat resistant alloys, increase the feed rate thus minimizing the cutting time.

● **Typical insert wear pattern showing the effect of various lead angle changes and the resulting increase of depth of cut notching**

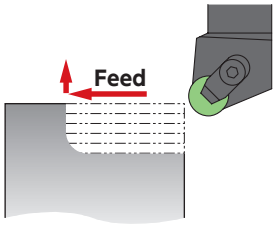


Troubleshooting (continued)

5 Programming

● Rough

Same Depth of Cut

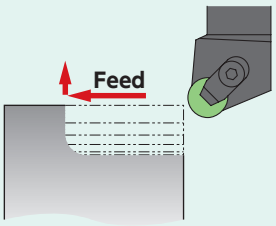


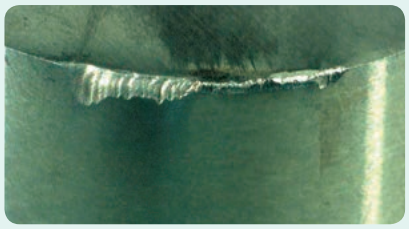


Note)
Notch wear on the insert cutting edge as shown in is the result of multiple passes being taken at the same depth of cut. This type of wear will minimize tool life. The following programming examples will help to minimize this mode of failure.

change to

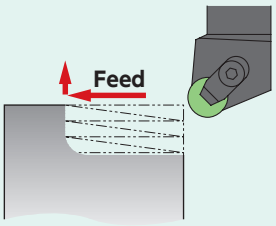
Varying Depth of Cut





Note) Another programming change that may help to reduce notching is by varying the depth of cut. Again, the same principle applies, notching takes place at various points on the cutting edge rather than concentrated at one point.

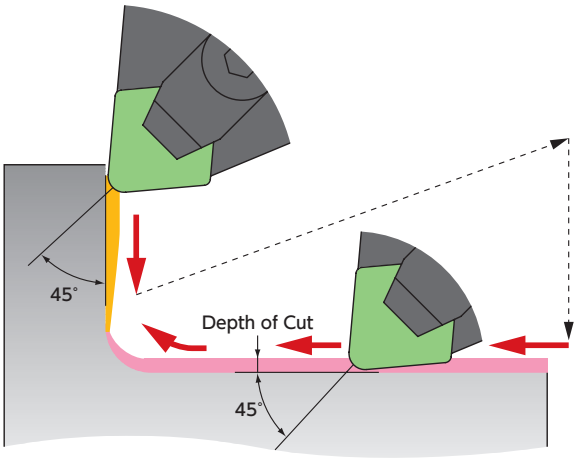
Ramping





Note) Programming " Ramping " cuts in the same cutting direction is one of the best procedures to use to minimize notching. By varying the DOC, wear is distributed over the entire cutting edge not on one point.

● Finish



・$\alpha = 45°$

Insert radius	DOC
1/64"	.005"
1/32"	.009"
3/64"	.014"
1/16"	.018"
3/32"	.028"
1/8"	.037"

Note) The correct procedure is to take more material off during the previous roughing application.
Then remove the amount of stock suitable for the nose radius of the insert by staying
below the 45° mark of the corner radius.
This will minimize notching and allow a cut frow both directions.

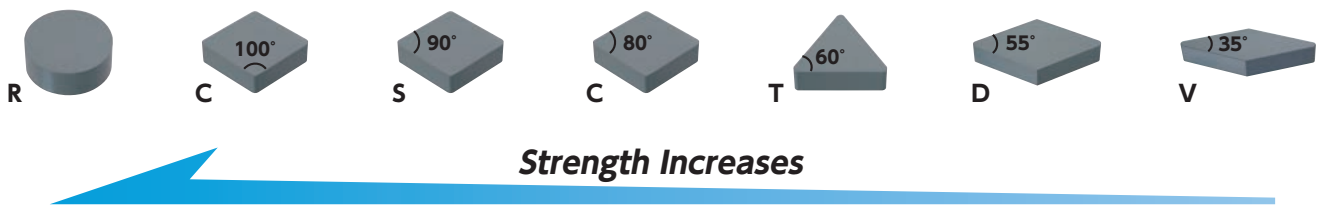
Depth of Cut



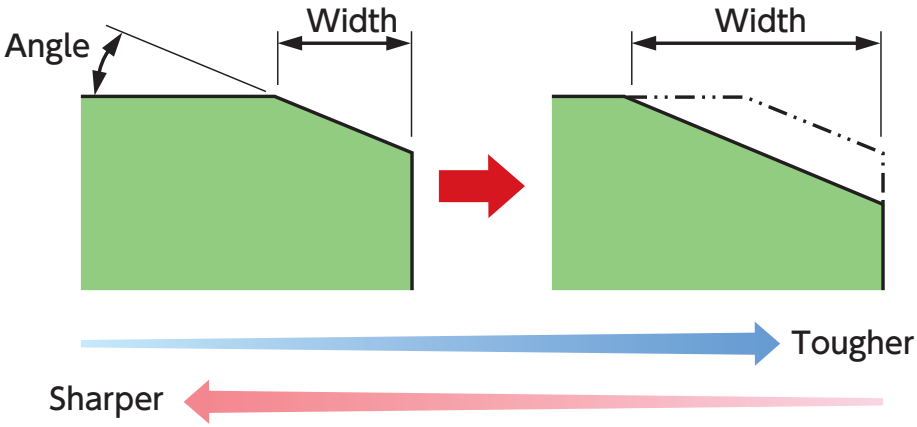
Better

Troubleshooting (continued)

6 Insert shape



7 Edge preparation



- Slightly larger T-land on the edge preparation may eliminate flaking.

8 Eliminate chatter

Chatter problem is often caused by too much cutting pressure when machining heat resistant alloys especially in profiling or grooving. A non-rigid machine may cause excessive insert wear or insert breakage.

- Increase speeds and decrease feeds
- Use harder grade with higher speed
- Use smaller I.C round insert, or smaller nose radius
- Reduce insert nose radius
- Use positive insert
- Reduce lead angle
- Reduce edge preparation or use sharp edge
- Minimize overhang
- Try a heavy metal boring bar

MEMO

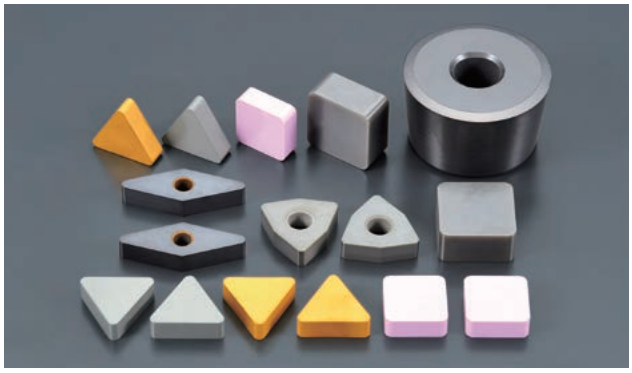
D



Ceramics

- Alumina-based Ceramics ····· D16
- Alumina TiC-based Ceramics ··· D18
- Whisker-reinforced Ceramics ··· D21
- Silicon Nitride-based Ceramics ··· D22
- SiAlON Ceramics ····· D24

Ceramics



NTK' s premium ceramic grades ensure the user higher productivity. All of the grades show superior high temperature hardness, heat resistance and chemical stability. NTK offers many types of ceramic cutting tool materials (silicon nitride-based, alumina-based and whisker-based) in a variety of geometries to meet customer demands.



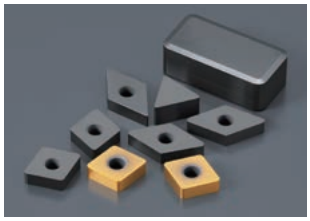
● ***Alumina-based ceramics (White ceramics)***

For **Gray Cast Iron**



● ***Silicon nitride-based ceramics***

For **Gray Cast Iron**
Ductile Cast Iron
Heat Resistant Alloys



● ***Alumina TiC-based ceramics (Black ceramics)***

For **Gray Cast Iron**
Ductile Cast Iron
Hardened Materials
Mill Rolls



● ***Whisker-based ceramics***

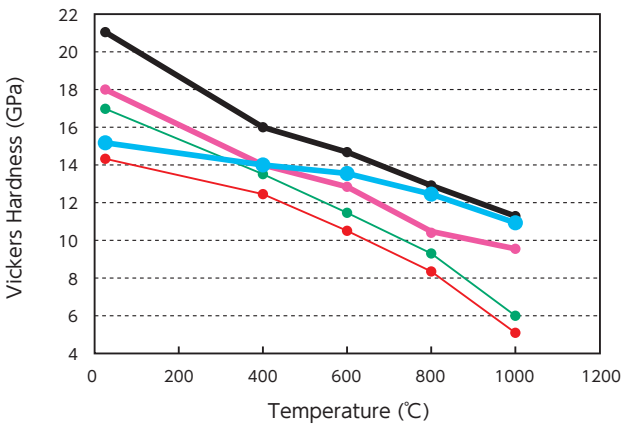
For **Heat Resistant Alloys**
Gray Cast Iron
Hardened Materials
Mill Rolls

Advantages of ceramic cutting tool (1)

The material retains high hardness even at increased temperatures !!

Excellent wear resistance at high cutting speed

【 Hardness at high temperature by tool material 】

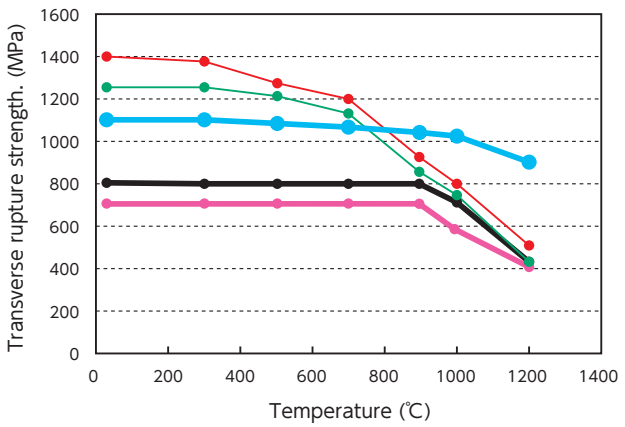


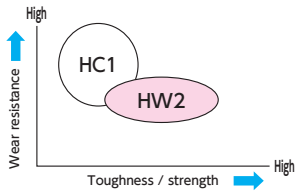
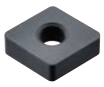
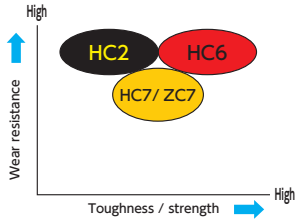
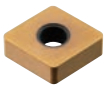
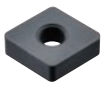
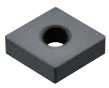
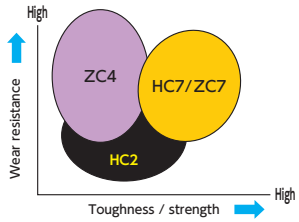
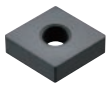
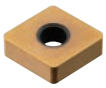
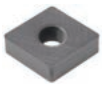
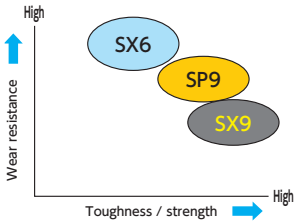
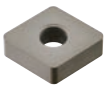
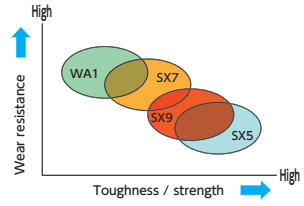
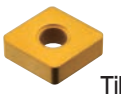
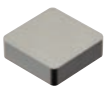
Advantages of ceramic cutting tools (2)

Low impact on bending strength even under high temperature

Stable machining is possible in the high speed range

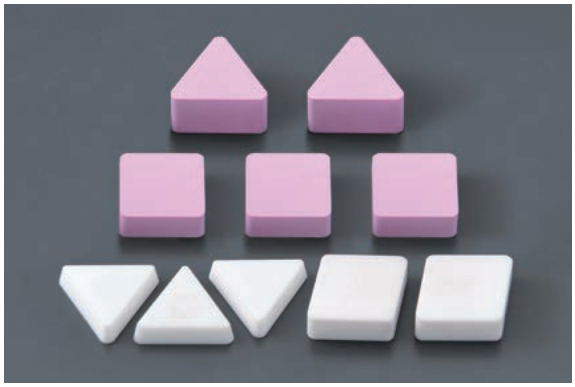
【 Breaking strength at high temperature by tool material 】



	Grade / Coating	Applications / Features	Physical properties*						Application map
			Density g/cm³	Hardness HRA	Bending strength MPa	Young's modulus GPa	Thermal expansion coefficient X10⁻⁶/K	Thermal conductivity W/m・K	
White ceramics Alumina - based ceramics	**HC1**  Al_2O_3	K Semi-finish / Finish Best wear resistance	4.0	94.0	700	400	7.8	17	[Gray cast iron, Finish, DRY, White ceramics] 
	HW2  Al_2O_3	K Rough / Semi-finish / Finish Outstanding fracture toughness	4.1	94.0	750	390	7.8	19	
Black ceramics Alumina + TiC-based ceramics	**HC2**  Al_2O_3+TiC	K H Semi-finish / Finish General black ceramic	4.3	94.5	800	420	7.9	21	[Gray cast iron, Finish, WET, Black ceramics] 
	ZC4  Al_2O_3+TiC	K H Semi-finish / Finish Competitive vs CBN	4.6	95.5	1,000	420	7.8	25	
	HC5  Al_2O_3+TiC	K Semi-finish / Finish Stable performance for Mill Rolls	4.3	95.0	900	420	7.8	25	
	HC6  $TiC+Al_2O_3$	K Semi-finish / Finish Excellent performance for Ductile	4.7	94.0	800	450	7.6	29	[Machining of hardened materials] 
	HC7  Al_2O_3+TiC	K H Semi-finish / Finish Stable performance for Mill Rolls	4.6	95.0	1,100	420	7.9	23	
	ZC7  Al_2O_3+TiC TiN coat	K H Semi-finish / Finish Excellent wear resistance in wide hardness range	4.6	95.0	1,100	420	7.9	23	
	SX5  SiAlON	K S Rough / Semi-finish Excellent toughness	3.6	92.5	1,100	350	4.0	18	[Machining of Gray cast iron / Rough] 
	SX6  Si_3N_4	K Rough 1st choice for Cast Iron machining	3.2	93.5	1,200	320	3.0	50	
	SX7  SiAlON	K S Rough / Semi-finish Can replace whisker ceramic	3.3	93.5	900	290	3.4	11	
	SX9  SiAlON	K S Rough / Semi-finish Excellent combination of toughness and heat resistance	3.3	93.5	1,200	330	3.0	15	[Machining of Inco 718] 
	SP9  Si_3N_4 TiN+Al_2O_3 coat	K Rough / Semi-finish / Finish Low tool pressure increased toughness Decreased tool pressure	3.3	93.5	1,200	330	3.0	15	
Whisker - reinforced ceramics	**WA1**  Al_2O_3+SiC	K H S Semi-finish / Finish Superior flank wear resistance with toughness	3.7	94.5	1,200	400	7.6	35	

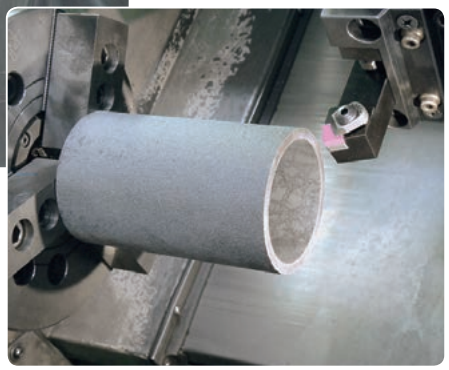
*For coated grades, the values of the substrate material are indicated.

Alumina-based ceramics (White ceramics)

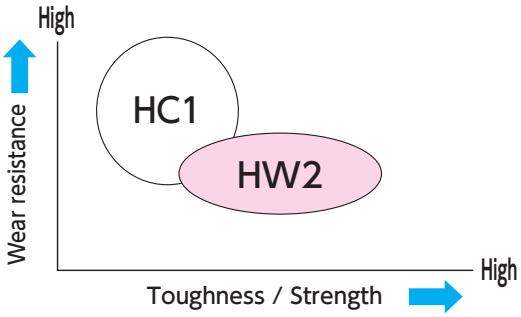


Characterized by high oxidation resistance and adhesion resistance. This ceramic utilizes alumina that is thermally and chemically stable. This ceramic is best suited for high-speed cutting applications where cutting temperature tends to be high with no coolant.





【Gray cast iron, Finishing, Dry cutting, White ceramic】



HC1

Ideal grade for high-speed finishing of cast iron !



Brake rotor	
Gray cast iron	
2100 SFM	
.012 IPR	
.020" DOC	
DRY	
NTK : **HC1**	130 pcs
Competitor's black ceramic	65 pcs

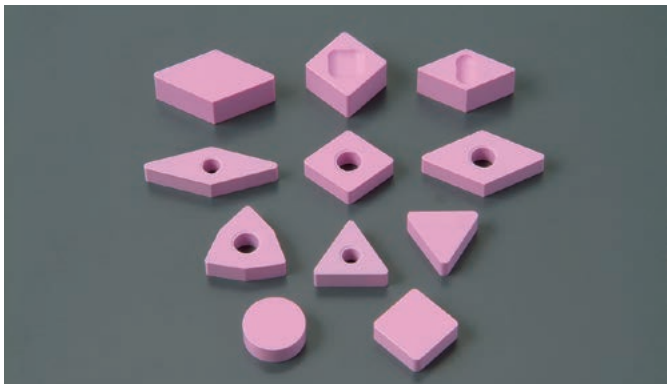
Features

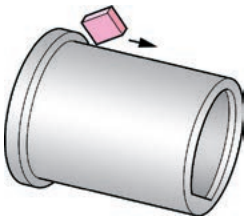
- *Best wear resistance*
- *Stable machining performance in many high-speed machining applications*

Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
HC1	Gray cast iron	Turning	Finish	1200–2100	.004–.016	.020–.080	●	

HW2

Alumina-based ceramic grade with high toughness !



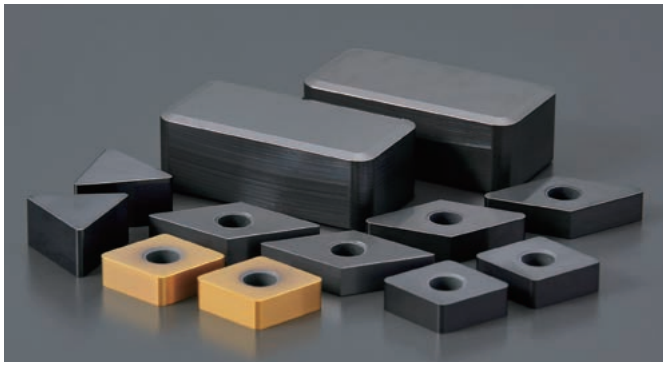
Cylinder liner	
Chilled liner	
1200 SFM	
.012 IPR	
.080" DOC	
DRY	
NTK : **HW2**	70 pcs
Competitor's white ceramic	30 pcs

Features

- *Outstanding fracture toughness*
- *Stable machining performance in many high-speed machining applications*

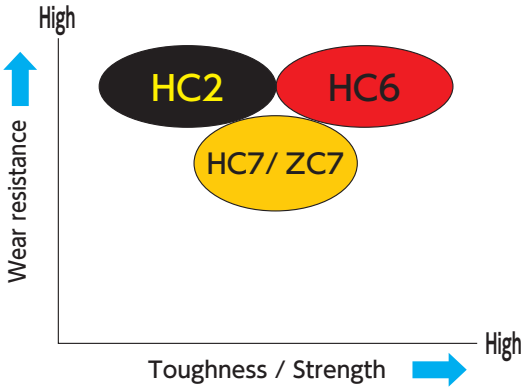
Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
HW2	Gray cast iron	Turning	Rough-Finish	1200–2100	.004–.016	.020–.080	●	
	Cylinder Liners	Turning	Rough-Finish	600–1800	.008–.016	.020–.100	●	

Alumina TiC-based ceramics (Black ceramics)

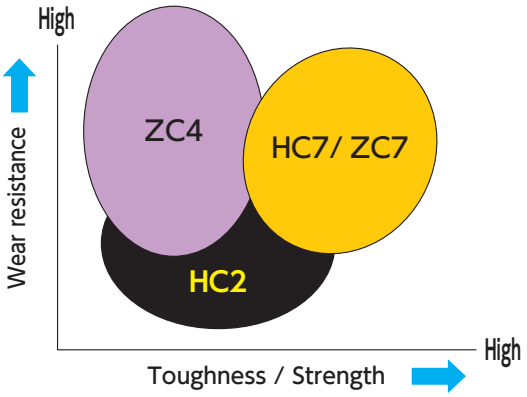


Alumina TiC-based ceramics are strengthened by adding hard carbide to highly pure alumina. This process results in ceramic materials that shows excellent performance in either wet or dry cutting conditions. As an added benefit, hardness and toughness has been improved which enables the machining of partially interrupted cuts. This ceramic material has both high-hot hardness and low plasticity needed to cut hardened materials.

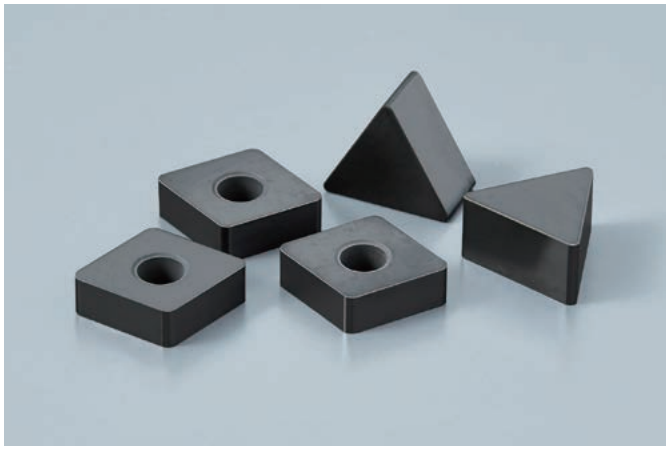
【Gray cast iron, Finishing, WET, Black ceramic】



【Machining of hardened materials】



HC2 The standard grade for machining cast iron and hardened materials !



Mill roll	
240 SFM	 
.008 IPR	
.020" - .120" DOC	
DRY	
NTK : HC2	20 pcs
Competitor's black ceramic	10 pcs

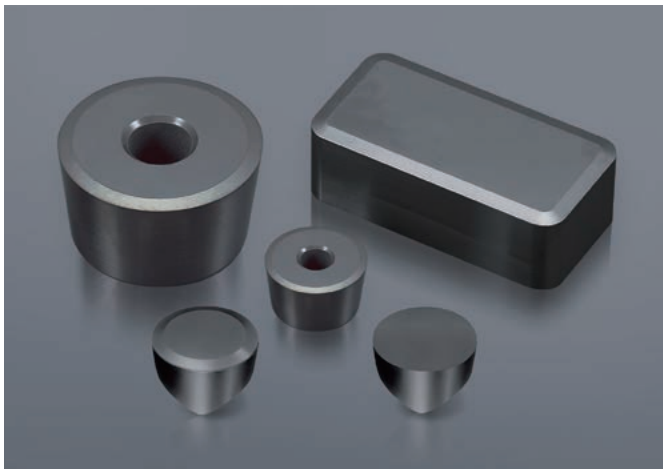
Features

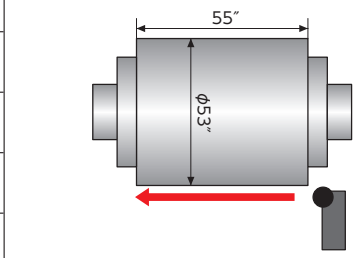
- *Well-balanced content of aluminum oxide and titanium carbide (Al_2O_3+TiC) sintered under pressure*
- *Stable performance under a wide range of machining conditions*
- *General purpose ceramic which works well in a wide range of cutting applications*

Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
HC2	Gray cast iron	Turning	Semi finish-Finish	1200-2100	.004-.016	.020-.060	●	●
	Mill rolls (Cast iron)	Turning	Semi finish-Finish	150-500	.003-.008	.020-.140	●	

HC5

Developed for Mill Rolls !



Mill roll	
Chilled cast iron	
230 SFM	
.016 IPR	
.394" DOC	
DRY	
NTK : **HC5**	4 pass
Competitor's black ceramic	2 pass

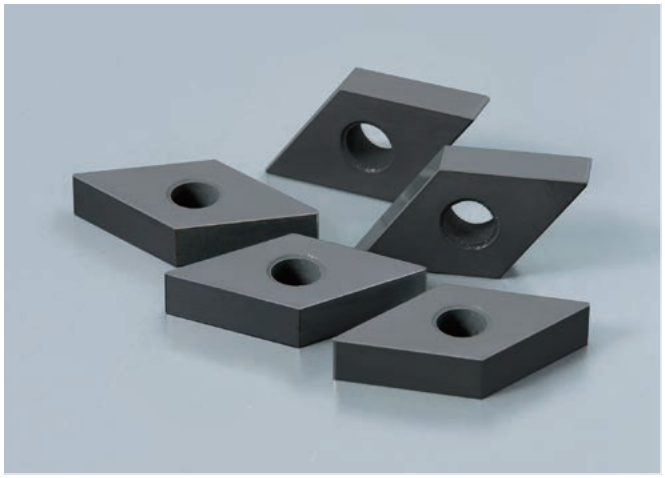
Features

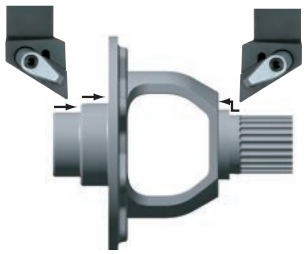
- *Developed for use in hard turning applications for mill rolls*
- *Excellent toughness combined with wear resistance*

Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
HC5	Mill roll (Cast iron)	Turning	Rough-Finish	450-600	.004-.012	.025-.075	●	
	Mill roll (Steel)	Turning	Rough-Finish	450-600	.004-.012	.025-.075	●	

HC6

For machining ductile cast iron !



Differential case	
Ductile cast iron	
900 SFM	
.008 IPR	
.020" DOC	
WET	
NTK : **HC6**	60 pcs
Competitor's coated carbide	30 pcs

Features

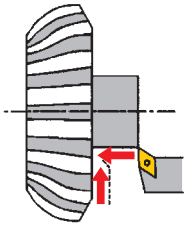
- *Designed specifically for finish turning of ductile / nodular cast irons*
- *TiC-based ceramic with improved wear resistance at high cutting speed*

Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
HC6	Ductile cast iron	Turning	Finish	600-1500	.004-.012	-.040	○	●

ZC4

For machining hardened materials !



Side gear	
Case carburizing steel	
Hardness : HRC63	
400 SFM	
.004 IPR	
.006" DOC	
DRY	
NTK : **ZC4**	60 pcs
Competitor's black ceramic	30 pcs

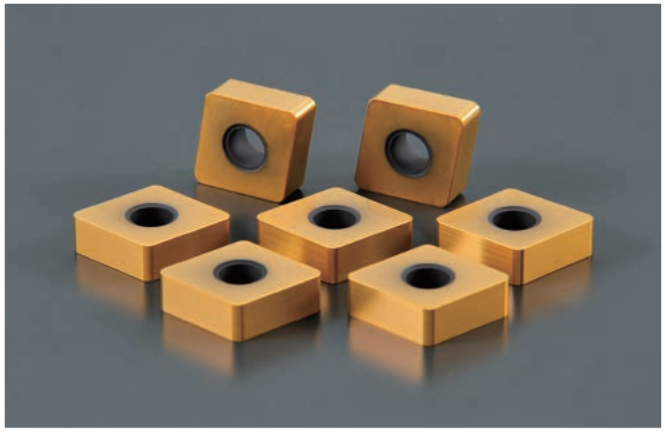
Features

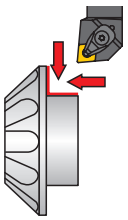
- *TiN-coated premium ceramic grade with the finest grain size of all the NTK ceramic grades*
- *Best for hard turning applications from (HRC 55 - 70)*
- *The gold coating makes edge wear easily detectable*

Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
ZC4	Hardened material (HRC55-70)	Turning	Finish	130–700	.003–.008	.005–.030	●	●

ZC7 / HC7

For machining hardened parts with a wide range of hardness !



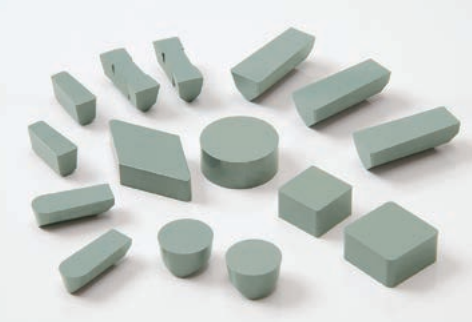
Gear	
Carburized and hardened steel	  HRC58-62
300 SFM	
.005 IPR	
.006" DOC	
WET	
NTK : **ZC7**	80 pcs
Competitor's CBN	80 pcs

Features

- *Excellent wear resistance in a wide range of applications such as machining carburized or induction hardened steels (HRC 30 - 62)*
- *High quality surface finishes with wiper facet inserts*
- *TiN coated ZC7 is available in various geometries as standard*

Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
ZC7 HC7	Hardened material (HRC30–62)	Turning	Finish	130–700	.003–.008	.005–.030	●	●
	Mill roll (Steel / Cast iron)	Turning	Rough – Finish	450–600	.004–.012	.025–.075	●	

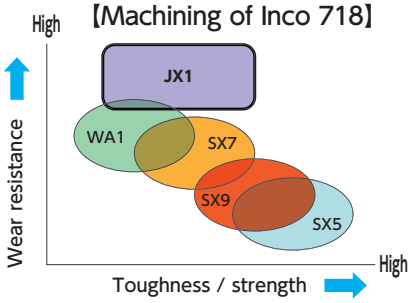
Whisker-reinforced ceramics



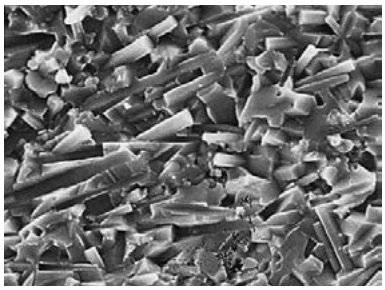
WA1 ceramic grade has a unique combination of superior wear resistance, toughness and flaking resistance as a result of adding SiC whiskers to Alumina. WA1 is primarily used in machining continuous cuts of aerospace alloys because of its productivity and reliability characteristics. WA1 can also be used to machine gray cast iron and hardened steels because of its excellent thermal shock resistance.

【Heat-resistant alloy】

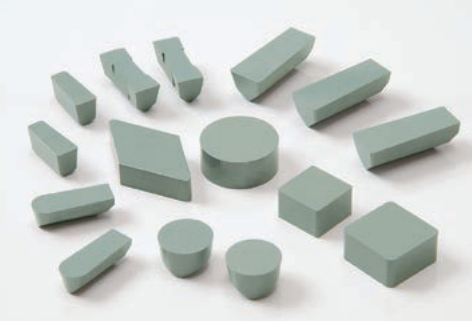
【Machining of Inco 718】



【WA1 structure】



WA1 High-speed machining of heat resistant alloys and cast iron !



Housing	
Inco 625	Competitor's Whisker Ceramic / WA1
900 SFM	
.006 IPR	
.020"-.030" DOC	
WET	
NTK : **WA1**	1 pass
Competitor's whisker ceramic	1 pass

Features

- *Good flank wear resistance at high speed*
- *Best notch wear resistance compared to competitor's whisker-reinforced ceramics*
- *Increased toughness compared to competitor's whisker-reinforced ceramics*

Recommended applications

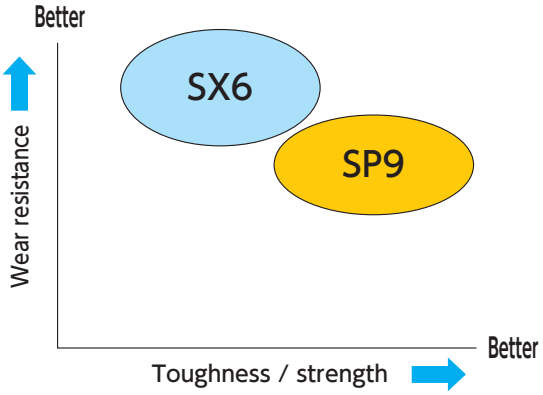
Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
WA1	Heat resistant alloy	Turning	Rough no scale	600-1000	.005-.010	.040-.100		●
			Semi finish Profiling	600-1100	.004-.010	.020-.080		●
			Grooving	600-1100	.002-.004	-		●
	Gray cast iron	Turning	Semi finish Finish	1200-2100	.004-.016	.020-.120	●	●
	Mill roll (Carbide)	Turning	Rough-Semi finish	150-500	.003-.008	.020-.140	●	
	Hardened Material (HRC 45-62)	Milling		550-850	.0025-.005	.030-.075	●	

Silicon Nitride-based ceramics



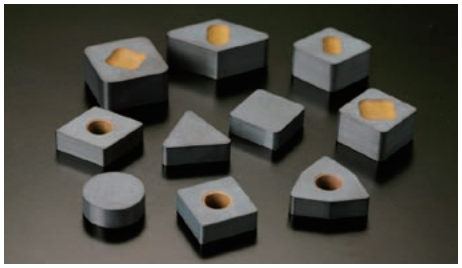
Silicon nitride-based ceramics have approximately twice the fracture toughness of alumina-based ceramics. Their fracture toughness is nearly the same as some carbide grades. Silicon nitride ceramic enables the user to perform productive high speed machining where traditional ceramic grades could not perform, including milling cast iron and interrupted cutting with scale.

【Gray cast iron, Roughing】





SX6 Premium Silicon Nitride

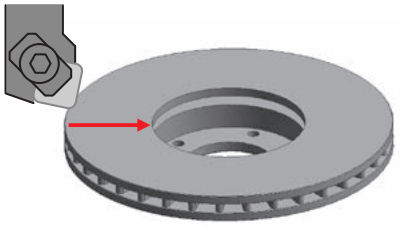


Features

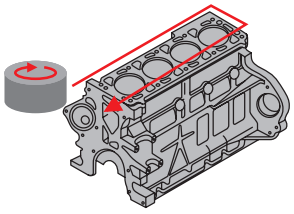
- *Excellent wear resistance in applications where notch wear appears*
- *Stable tool life in the applications where thermal shock resistance is required : such as WET machining or milling*
- *Long tool life and high productivity at high cutting speed*

Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR / IPT)	Depth of cut (inch)	DRY	WET
SX6	Cast iron	Turning	Rough	1800–3500	.012–.024	.020–.140	●	●
		Milling	Rough	1500–4200	.003–.010	.020–.140	●	●

Brake rotor

Gray cast iron	
2400 SFM	
.025 IPR	
.080" DOC	
DRY	
NTK : SX6	150 pcs
Competitor's silicon nitride ceramic	100 pcs

Cylinder block

Gray Cast Iron	
3300 SFM	
.0043 IPT	
.080″ +.040″ DOC	
Residual coolant	
NTK : SX6	150 pcs
Competitor's solid CBN	150 pcs

SP9

High Speed machining with low cutting forces !

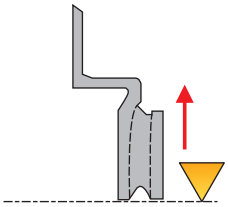


Features

- *Excellent wear-resistance and chipping resistance with CVD coated high-strength silicon nitride-based ceramic*
- *Achieves lower tool pressure with minimal edge preparation*
- *Also usable for finishing*

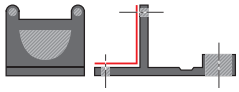
Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR / IPT)	Depth of cut (inch)	DRY	WET
SP9	Gray cast iron	Turning	Rough–Finish	1200–2700	.012–.024	–.140	●	○
		Milling	Rough–Semi finish	1200–2500	.003–.010	–.240	●	○
	Ductile cast iron	Turning	Rough–Finish	800–1800	.006–.016	–.120	●	●
		Milling	Rough–Semi finish	2100–3000	.003–.010	–.240	●	○

Brake rotor

Gray cast iron	
1800 SFM	
.016 IPR	
DRY	
NTK : **SP9**	120 pcs
Competitor's silicon nitride	80 pcs

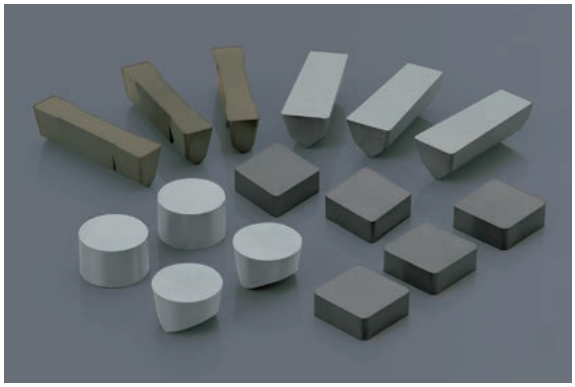
Mount bracket

	Comp. carbide	SP9
Cutter	7 tooth	10 tooth
Cutting speed (SFM)	490	1820
Feed (IPT)	.008	.005
Depth of cut (inch)	.080+.080	←
	DRY	←



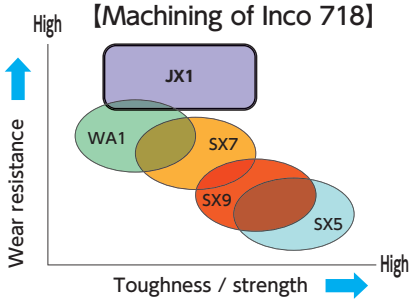
NTK : **SP9**	390 pcs with 3.6times higher productivity
Competitor's carbide	180 pcs

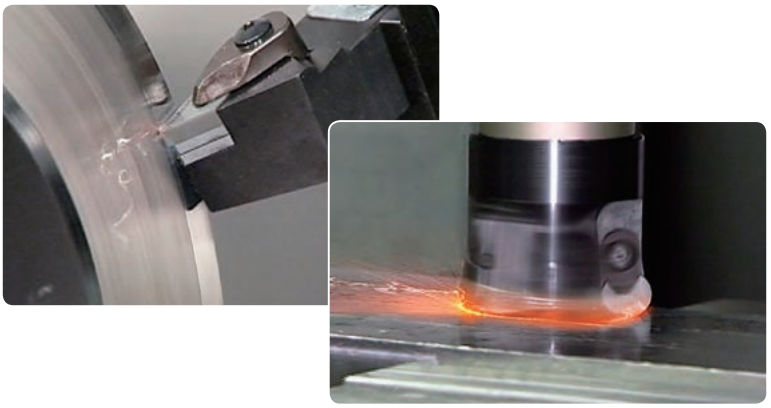
SiAlON Ceramics



- SiAlON ceramic is a silicon nitride based ceramic combined with “Al” and “O”. SiAlON ceramic offers excellent heat resistance, mechanical strength under high temperature, thermal shock resistance and wear resistance in addition to the toughness of silicon nitride. SiAlON shows superb performance in high speed machining of high temperature alloys.

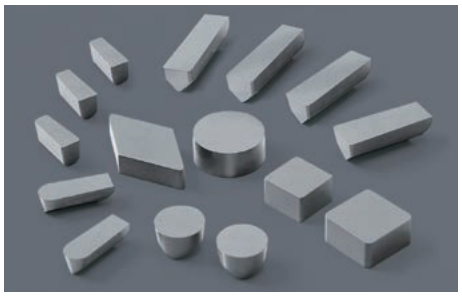
【Machining of Inco 718】





SX7

Can replace whisker ceramic !



Features

- *Better notching resistance compared to whisker ceramics*
  No need to program ramping
- *Better flank wear resistance compared to other SiAlON ceramics*
  Superior performance vs. whisker ceramics under same conditions-even higher productivity at higher feed rates
- *Excellent thermal shock resistance*
  High speed milling can be performed at 3000SFM or higher

Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR / IPT)	Depth of cut (inch)	DRY	WET
SX7	Heat resistant alloy	Turning	Rough scale	600-900	.004-.009	.040-.200		●
			Rough no scale	600-900	.006-.012	.040-.100		●
			Semi finish / profiling	600-900	.005-.010	.040-.080		●
			Grooving	500-900	.003-.006	-		●
		Milling	-	2000-4000	.003-.005	.040-.100	●	

Seal (Inco 718 Finish)

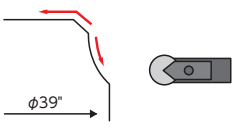
	Comp. carbide	Comp. whisker	SX7
Shape	VNGA333	←	←
Cutting speed (SFM)	160	650	800
Feed (IPR)	.0078	←	←
Depth of cut (inch)	.020	←	←
	WET	←	←
Tool life	1 pass	←	←



NTK : SX7	7 min /pc
Competitor's whisker ceramic	15 min /pc
Competitor's carbide	24 min /pc

Turbine case (Waspaloy semi finish)

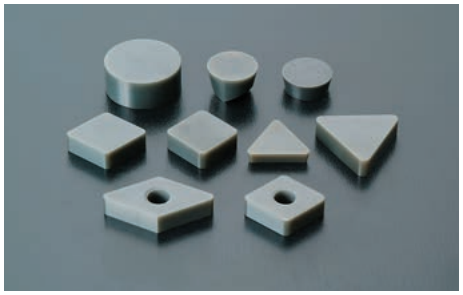
RPGX45
800 SFM
.012 IPR
Various DOC
WET



NTK : SX7	7.2 min
Competitor's whisker ceramic	5.3 min * Broken

SX9

Best grade for roughing Inco 718 with scale !



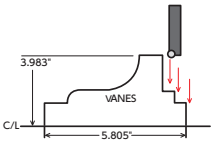
Features

- *Excellent notch wear resistance*
- *Better flank wear resistance compared to competitor's silicon nitride ceramics*
- *Superior toughness compared to whisker-reinforced ceramics*
- *Best thermal shock resistance*
- *Best grade for roughing Inco 718 with scale*

Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR / IPT)	Depth of cut (inch)	DRY	WET
SX9	Heat resistant alloy	Turning	Rough scale	600–800	.008–.014	.040–.200		●
			Rough no scale	600–800	.008–.016	.040–.100		●
			Semi finish / profiling	600–800	.004–.012	.040–.080		●
		Milling	–	1500–3500	.004–.006	.040–.100	●	

Housing (Inco 718 with scale)

	Comp. whisker	SX9
Shape	RCGX45	←
Cutting speed (SFM)	600	←
Feed (IPR)	.005	.008
Depth of cut (inch)	.100	←
	WET	←

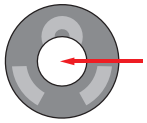


NTK : SX9 — * High productivity

Competitor's whisker ceramic

Ring (Inco 718 milling with scale)

	Comp. whisker	SX9
Shape	RNG45	←
Cutting speed (SFM)	1200	700
Feed (IPT)	.0027	.004
Depth of cut (inch)	.010	←
	DRY	←

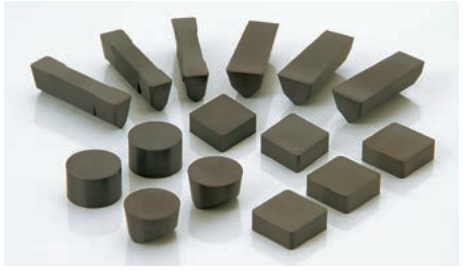


NTK : SX9 — 10 pass with high productivity

Competitor's whisker ceramic — 5 pass

SX5

Best grade for roughing Waspaloy with scale !



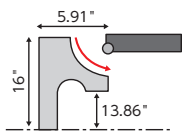
Features

- *Excellent notch wear resistance*
- *Toughest SiAlON grade on the market*
- *Better thermal shock resistance compared to whisker-reinforced ceramics*
- *Use SX5 where heavy scale or interruptions exist*

Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR / IPT)	Depth of cut (inch)	DRY	WET
SX5	Heat resistant alloy	Turning	Rough scale	600–800	.008–.014	.040–.200		●
			Rough no scale	600–800	.008–.016	.040–.100		●
			Grooving	600–800	.003–.007	–		●

Ring (Inco 718 with scale)

	Comp. whisker	SX5
Shape	RCGX45	←
Cutting speed (SFM)	850	800
Feed (IPR)	.004	.010
Depth of cut (inch)	.750–.100	←
	WET	←

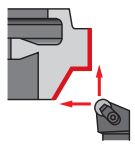


NTK : SX5 — 1 pass with 2.5times higher productivity

Competitor's whisker ceramic — 1 pass

Ring (Waspaloy with scale)

RCGX35
650 SFM
.008 IPR
.750–.100 DOC
WET



NTK : SX5 — 1 pass * Small Chipping

Competitor's SiAlON ceramic — 1 pass * Was chipping a lot

MEMO

D



BIDEMICS (Brazed) / CBN / PCD

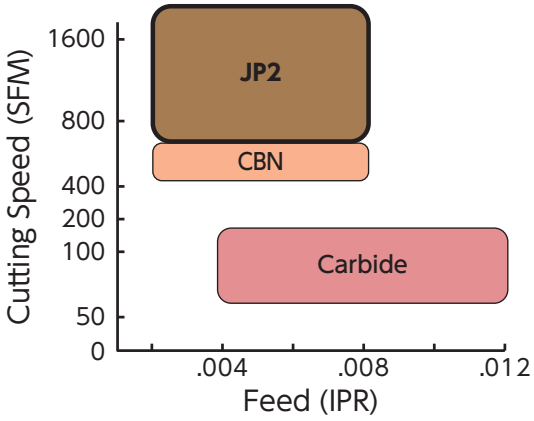
- BIDEMICS D31
- CBN (EZ CUBE) D32
- PCD D34

BIDEMICS (Brazed) / CBN / PCD

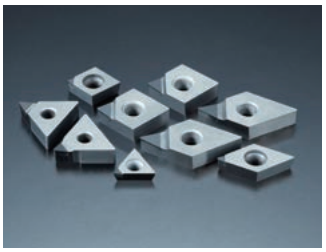
BIDEMICS



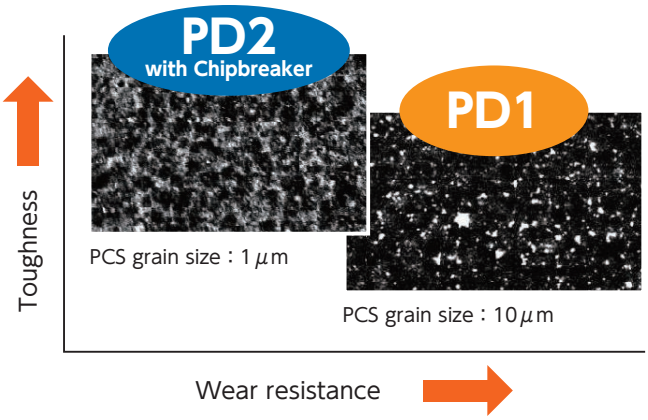
●*High Temperature Alloy*



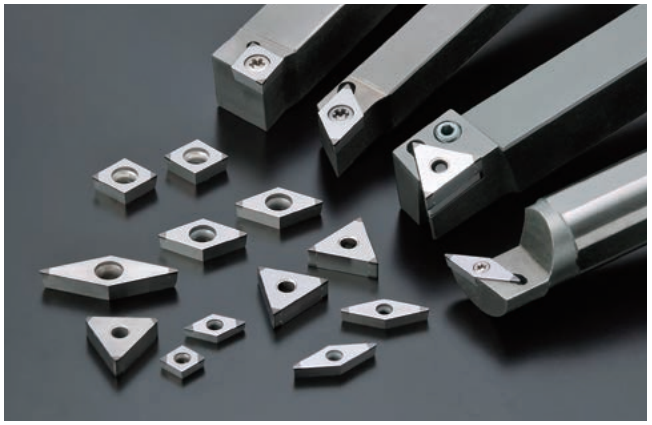
PCD



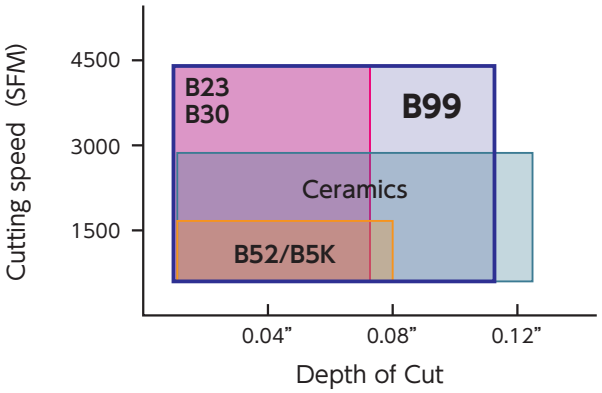
●*Non-ferrous material*



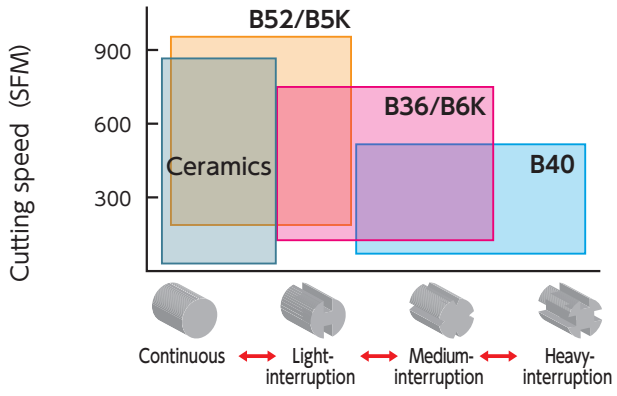
CBN Series



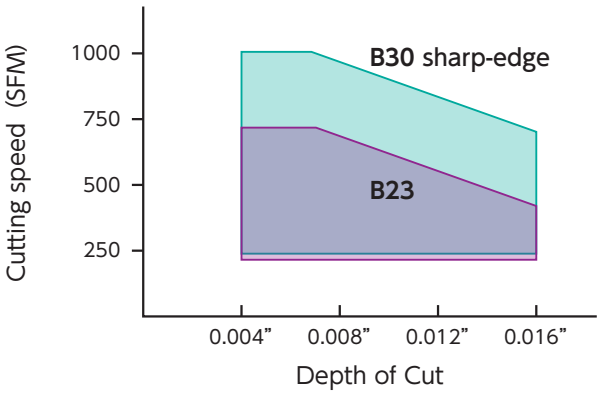
Gray / Ductile Cast Iron Applications



Hardened Material Applications



Sintered Alloy Applications

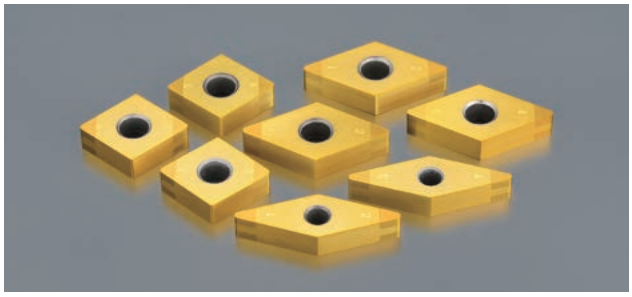


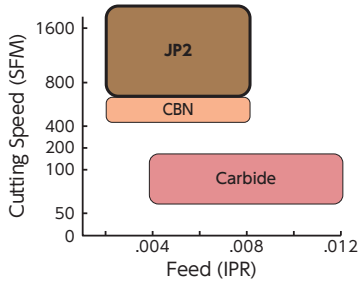
BIDEMICS



JP2 combines the unique cutting tool properties of NTK BIDEMICS with the ability to be brazed. This maximizes geometry flexibility and economy.

JP2 Ultra High-Speed Finishing of Super Alloys

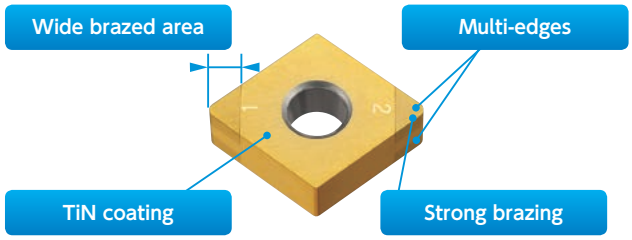




Features

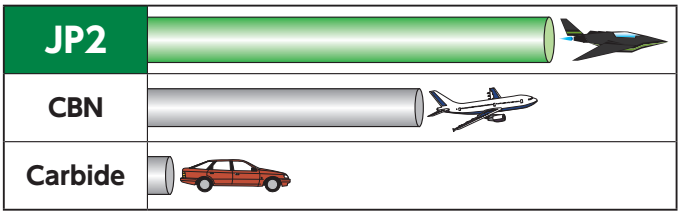
Patents Pending

- *High speed finish turning can be performed at 800SFM or higher*
- *Superior wear resistance compared to CBN's*
- *Superior notching resistance vs CBN or carbides*
- *Superior surface finishes vs CBNs and coated carbides*



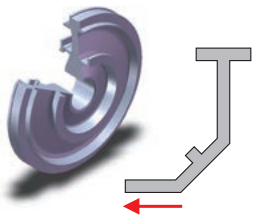
Increase Productivity vs. Carbide

- **10 to 15 times higher speed capability**



Disc (Inco718 Semi-finishing / Finishing)

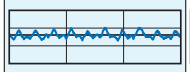
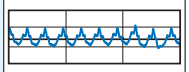
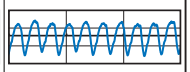
	Competitor's Coated Carbide	JP2
Shape	CNGP432	CNGA432
Cutting speed (SFM)	150	600
Feed (IPR)	.0035	←
Depth of cut (inch)	.015+.005	←
	WET	←
Tool life	1pc	4pcs



NTK : JP2 — 4 pcs with 4 times higher productivity

Competitor's Coated Carbide — 1 pc

Superior Surface Finish

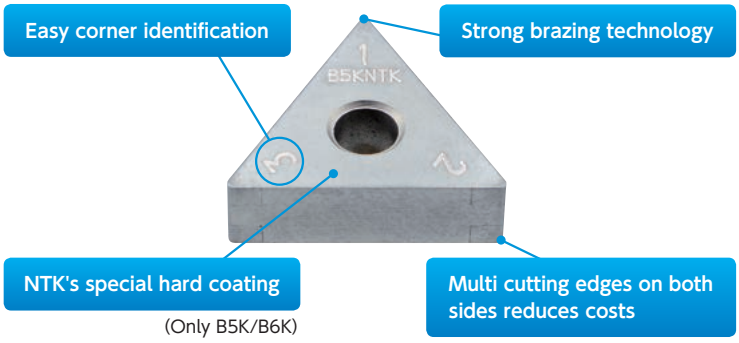
		JP2	CBN	Carbide
				
Machined surface				
Roughness				
	Ra	0.64 μm	1.18 μm	2.75 μm
	Rz	3.36 μm	5.56 μm	9.64 μm
Cutting speed		800 SFM	←	120 SFM
Feed rate		.006 IPR	←	←
Cycle time		3.3 min	←	14.7 min
Removed chip		48 cc	←	←

Grade	Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
JP2	Heat Resistant Alloy	Turning	Finishing	600-**1700**	.002-.007	.005-.030		●

BIDEMICS (Brazed) / CBN / PCD

CBN series





Grade	Style	Coating	Main Binder	CBN Volume	Applications				
					Cast Iron	Ductile Cast Iron	Hardened Material	Mill Rolls	Sintered Alloy
NEW **B99**	Solid	—	AlN	93%	●	○		●	
B23	Brazed	—	Ti	90%	●				●
B30	Brazed	—	Ti	95%	●				●
B36	Brazed	—	TiCN	65%			●		
NEW **B6K**	Brazed	TiCN	TiCN	65%			●		
B40	Brazed	—	TiN	65%			●		
B52	Brazed	—	TiC	50%		●	●		
NEW **B5K**	Brazed	TiCN	TiC	50%		●	●		

NEW B99

Features

- ***Excellent wear resistance for high-speed cast iron machining***
- ***Ideal for Mill-roll machining***

【Recommended cutting conditions】

Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Cast iron	Turning	Rough Semi finish	2000–4500	.006–.020	.020–.140	●	●
Mill Rolls	Turning	Rough Semi finish	100–200	.004–.012	.010	●	

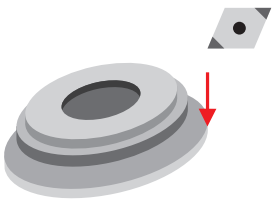
B23

Features

- ***Excellent wear resistance thanks to high CBN content***
- ***Ideal for roughing cast iron and machining sintered materials***

【Recommended cutting conditions】

Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Cast iron	Turning	Rough Semi finish	1300–4500	.004–.020	.008–.080	○	●
Sintered alloy	Turning	Rough– Finish	150–750	.001–.008	.002–.020	●	●

Brake rotor	
Gray cast iron	
820 SFM	
.0079 IPR	
.079" DOC	
WET	
NTK : **B23**	210 pcs
Competitor's CBN	70 pcs

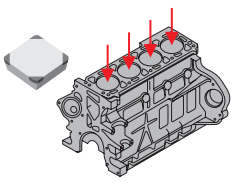
B30

Features

- ***Excellent wear resistance thanks to high CBN content***
- ***Designed for finishing cast iron***

【Recommended cutting conditions】

Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Cast iron	Turning	Semi finish Finish	1300–4500	.004–.020	.008–.080	○	●

Cylinder block	
Cast iron	
2600 SFM	
.012 IPR	
.004" DOC	
WET	
NTK : **B30**	800 pcs
Competitor's CBN	500 pcs

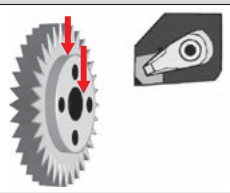
B6K / B36

Features

- ***Excellent combination of wear resistance and toughness due to special TiCN binders***
- ***Best for semi-interrupted cutting of hardened materials***

【Recommended cutting conditions】

Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Hardened material	Turning (Light interruption ~ Medium interruption)	Rough–Finish	130–800	.002–.008	.004–.040	●	●

Gear (HRC61-65)	
5120H	
430 SFM	
.006 IPR	
.004" DOC	
DRY	
NTK : **B36**	50 pcs
Competitor's CBN	20 pcs

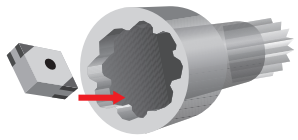
B40

Features

- ***Exceptional toughness thanks to special TiN binders***
- ***Designed for severely interrupted cutting of hardened materials***

【Recommended cutting conditions】

Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Hardened material	Turning (Heavy interruption)	Rough–Finish	100–500	.002–.008	.004–.040	●	○

Universal joint (HRC62)	
1055	
360 SFM	
.0055 IPR	
.0059" DOC	
DRY	
NTK : **B40**	2300 pcs
Competitor's CBN	1500 pcs

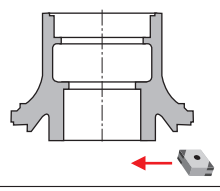
B5K / B52

Features

- ***Excellent wear resistance due to optimum CBN content with special TiC binders***
- ***Ideal for finishing ductile cast iron and continuous cuts for finishing hardened materials***

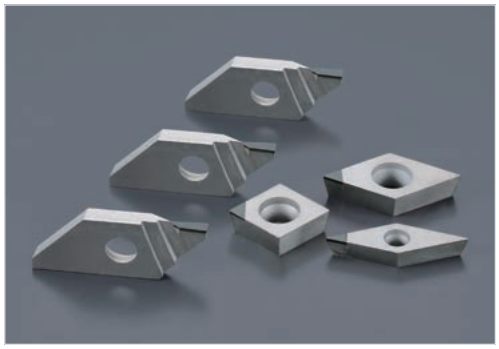
【Recommended cutting conditions】

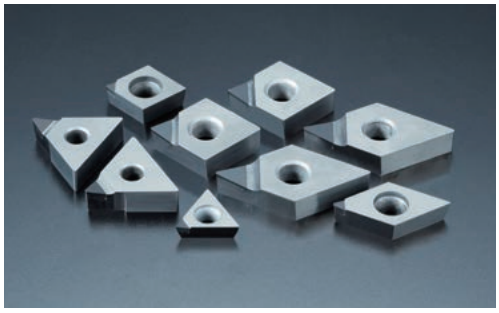
Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Ductile cast iron	Turning	Finish	300–1600	.004–.016	.012–.080	○	●
Hardened material	Turning (Continuous ~ Light interruption)	Rough–Finish	300–1000	.004–.020	.004–.040	○	●

Hub	
Ductile cast iron	
1150-1130 SFM	
.003 IPR	
.0079" DOC	
WET	
NTK : **B52**	60 pcs
Competitor's CBN	30 pcs

BIDEMICS (Brazed) / CBN / PCD

PCD (Polycrystalline Diamond)





Features

- *Faster cutting speeds than carbide*
- *Recommended for cutting aluminum and copper alloys thanks to its excellent adhesion resistance*
- *Incorporates a very sharp cutting edge*
- *Available for general turning and cut-off in addition to the inserts for milling cutters*

【Recommended cutting conditions】

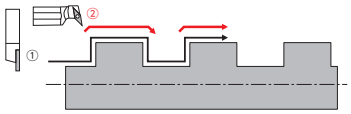
Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR/IPT)	Depth of cut (inch)	DRY	WET
Aluminum alloy Non-ferrous material	Turning	Rough–Finish	–6500	–.006	–.200		●
	Milling	Rough–Finish	–25000	–.008	–.200		●

PD1

Features

- *Sharp cutting edges*
- *Enables high precision and stable machining by controlling the potential for built-up edge*

Spool	
①Rough	②Finish
A6061	A6061
660 SFM	660 SFM
.004 IPR	.002 IPR
.200 DOC	.008 DOC

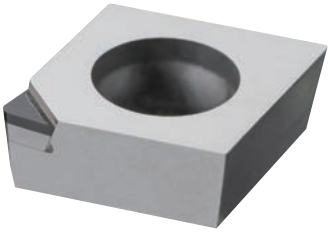


①NTK : **PD1**	30,000 pcs
②NTK : **PD1**	30,000 pcs

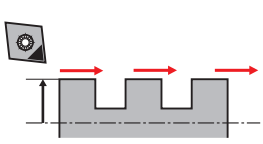
NEW PD2

Features

- *Super micro grain PCD maintains sharp cutting edges with increased chipping resistance*
- *Good chip control due to the high rake angle on the insert*

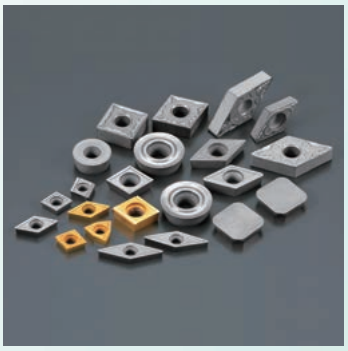


Spool	
A6061	
560 SFM	
.002 IPR	
.006 DOC	



NTK : **PD2**	15,000 pcs
Competitor's PCD	10,000 pcs

D

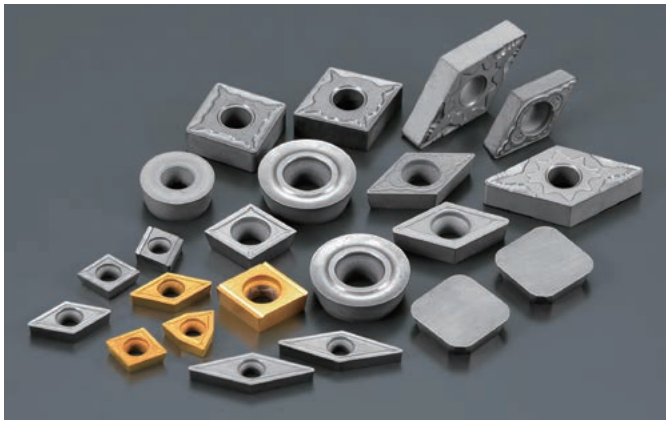


Cermet / PVD-coated Cermet

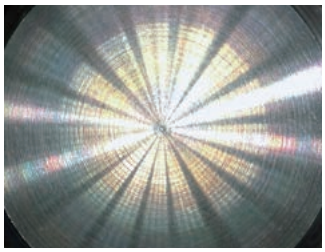
- Overview ····· D36
- Cermet / PVD-coated Cermet D38

Cermet / PVD-coated Cermet

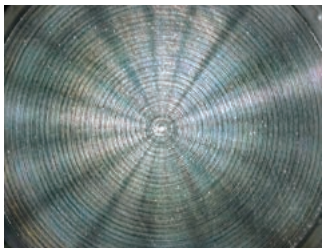
Cermet series



Cermet is a cutting tool material composed mainly of TiC (Titanium Carbide) and TiN (Titanium Nitride). The name, cermet, is derived from the words CERAMIC and METAL (representing carbide). As the name suggests, cutting performance is also in the mid-range of ceramic's and carbide's. The advantages of this material grade are high-quality and excellent surface finishes can be achieved with elevated cutting speeds. Cermets provide extended tool life.



Surface finished with cermet

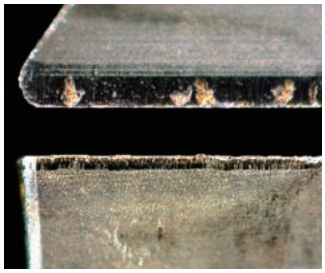


Surface finished with carbide

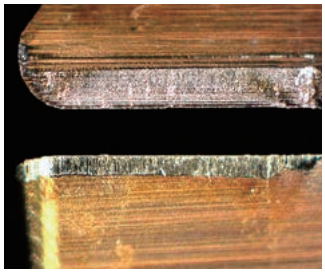
Features

High quality surface finish

The main components, TiC and TiN, have good BUE resistance as they have low affinity with work materials. Thus, machining with cermets brings high quality surface finish over extended periods of time.



Cermet



Carbide

High speed cutting

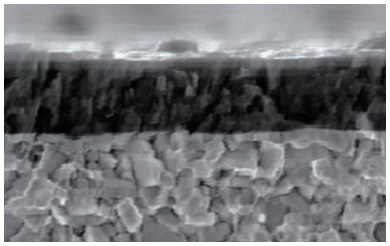
The main components, TiC and TiN, are more resistant to wear and oxidation at high temperature than WC (tungsten carbide), which is the main component of carbide tools. Because of excellent wear and oxidation resistance, cermet grades are less reactive with work materials and make stable high speed machining possible.

PVD-coated cermet series



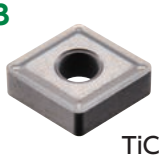
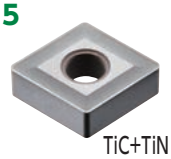
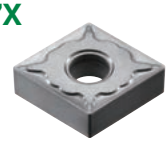


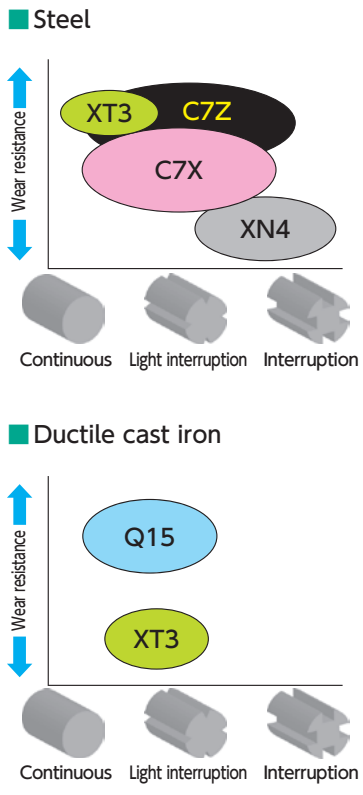
PVD TiN or TiCN coated cermet grades bring improved wear resistance. Since the coating layer does not contain any binder components, the coating maximizes the wear resistance of the titanium which delivers excellent performance and the tool life.



Features

PVD coating with superb hardness and surface smoothness provide excellent wear resistance and adhesion resistance.

Grade / Coating	Applications / Features	Physical properties* Density g/cm³	Hardness HRA	Bending strength MPa	Young's modulus GPa	Thermal expansion coefficient X10⁻⁶/K	Thermal conductivity W/m・K	Applications and ceramic property map
XT3  TiC+TiN base	P M K N ●Well balanced between wear resistance and toughness	6.3	92.5	1,700	450	8.4	21	
Q15  TiC+TiN base+TiCN coat	P M K ●Superior wear resistance and toughness	6.3	92.5	1,700	450	8.4	21	
C7X  TiCN base	P M K N ●Good combination of heat resistance and toughness	7.0	91.5	1,800	440	8.2	31	
C7Z  TiCN base + TiN coat	P M K N ●Perfect combination of heat resistance and toughness	7.0	91.5	1,800	440	8.2	31	
XN4  TiN base	P M ●Excellent toughness	5.9	91.5	1,900	450	8.9	42	



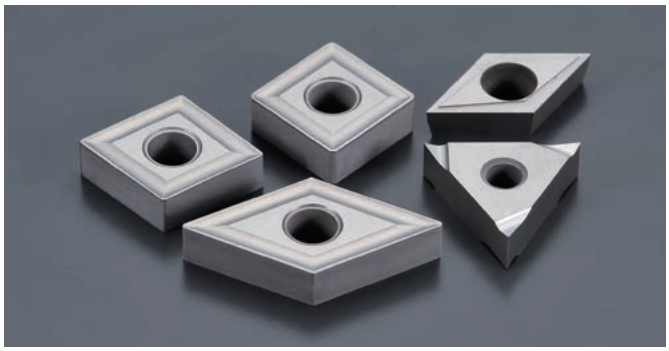
*For coated grades, the values of the base material are indicated.

Applications

Material	General steel Carbon steel , Alloy steel					Stainless steel Stainless steel , Cast steel					Cast iron Gray cast iron , Ductile cast iron			
Cutting	Finish ←				→ Rough	Finish ←				→ Rough	Finish ←			→ Rough
Range	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30
Cermets	XT3					XT3					XT3			
		C7X						C7X						
				XN4										
PVD Coated cermets	Q15					Q15					Q15			
		C7Z						C7Z						

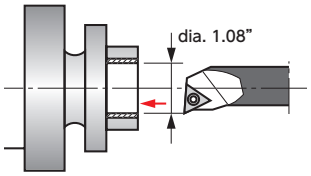
XT3

Well balanced combination of wear resistance and toughness !



Features

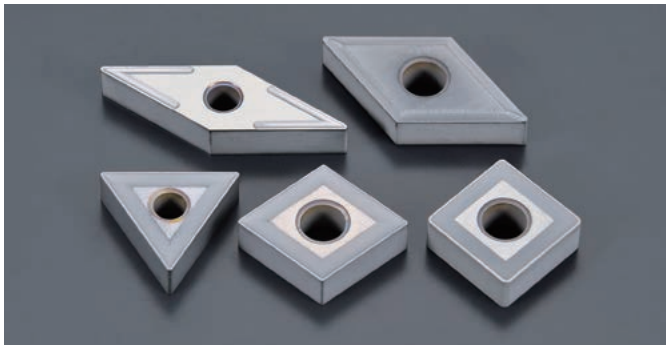
- *Well-balanced combination of wear resistance and toughness*
- *Covers a wide range of steel cutting, from medium cutting to finishing of steel*

Crank shaft	
1049	
250 SFM	
.002 IPR	
.001" DOC	
WET	
NTK : **XT3**	100 pcs
Competitor's cermet	60 pcs

Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels ● Cast iron	Conventional lathes	Wear resistance

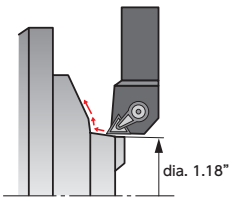
Q15

Coated cermet for high-speed finishing of ductile cast iron !



Features

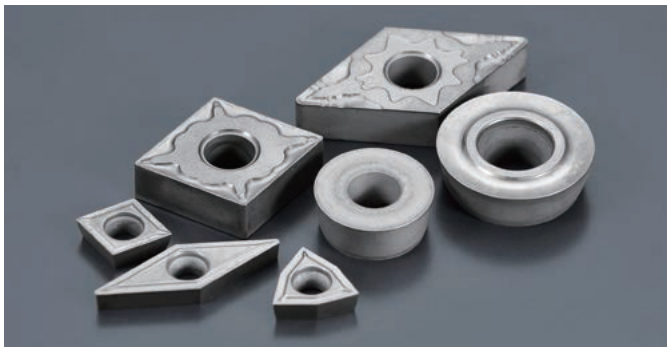
- *Further improved wear resistance and toughness from the TiCN-based coating*
- *The recommended grade for high-speed finishing of ductile cast iron*

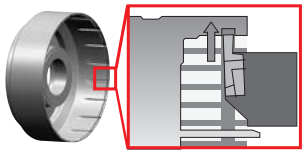
Differential case	
Ductile cast iron	
525 SFM	
.004 IPR	
.008" DOC	
WET	
NTK : **Q15**	35 pcs
Competitor's cermet	20 pcs

Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels ● Cast iron ● Ductile cast iron	Conventional lathes	Wear resistance

C7X

High-strength cermet grade that offers remarkable machining stability !



AT clutch	
SS	
800 SFM	
.0008-.0016 IPR	
.060" DOC	
WET	
NTK : **C7X**	200 pcs
Competitor's cermet	100 pcs

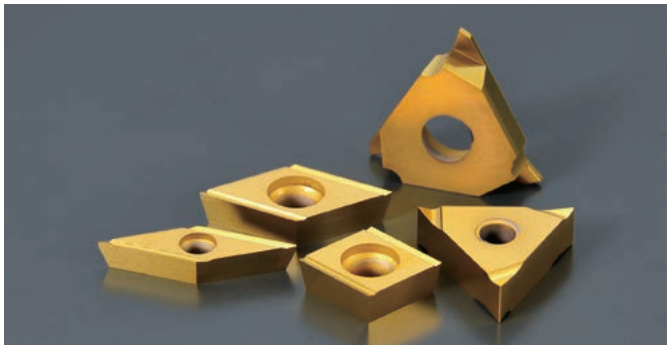
Features

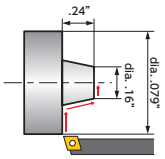
- *Overcomes the traditional weakness of conventional cermet grades with improved thermal shock resistance*
- *Excellent grade for grooving and bearing machining*

Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels ● Cast iron	Swiss-type lathes Conventional lathes	Balance

C7Z

Combining the advantages of thermal shock resistance and fracture resistance !



Spring	
SS	
430 SFM	
.002 IPR	
.012" DOC	
WET	
NTK : **C7Z**	1600 pcs
Competitor's cermet	1200 pcs

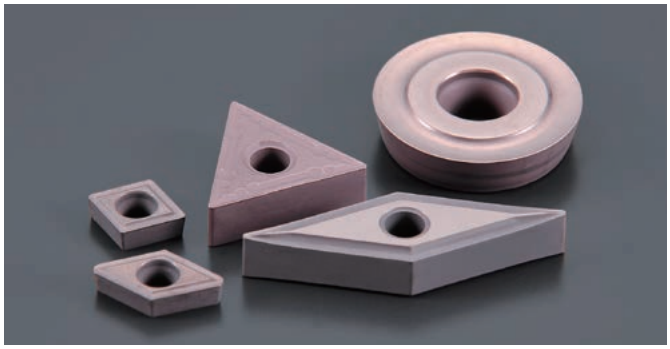
Features

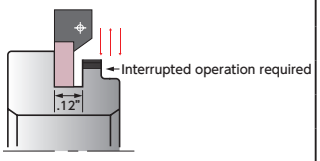
- *Further improvement in wear resistance and thermal shock resistance with a TiN-based coating*
- *Excellent performance in grooving and bearing machining*
- *The most recommended grade for high-speed machining of steel*

Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels ● Cast iron	Swiss-type lathes Conventional lathes	Balance

XN4

Toughest cermet grade with excellent fracture resistance !



Gear	
5120H	
360 SFM	
.004 IPR	
WET	
NTK : **XN4**	300 pcs
Competitor's cermet	200 pcs

Features

- *Allows for stable machining with longer tool life thanks to its excellent fracture resistance*

Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels	Conventional lathes	Toughness

MEMO

D



Micro-grain Carbide, PVD / CVD-coated Carbide

- Overview ····· D42
- PVD-coated Carbide ····· D44
- Micro-grain Carbide ····· D46
- CVD-coated Carbide ····· D46
- PVD Coatings ····· D47

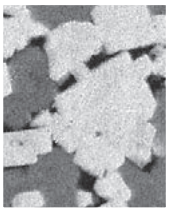
Micro-grain Carbide and PVD/CVD-coated Carbide



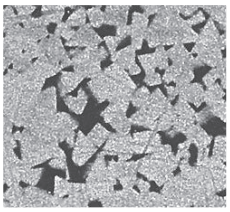
Excellence in precision machining and machining of hard-to-cut materials

These material grades use WC micro-grain carbide, the hard layer of which is granulated to a micro size 1 μm as the substrate. Furthermore, the substrate is coated by the PVD method with TiN, TiCN, and/or TiAlN. The end results are materials that are suitable for precision machining and machining of difficult-to-cut materials. Inserts in these grades are tougher and harder than carbide and come with precision sharp cutting edges. They even have superior toughness and sharper cutting edges than ultra micro-grain carbide grades, with excellent wear resistance and thermal crack resistance.

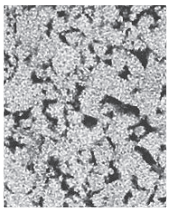
Carbide grade



General carbide structure



Micro-grain carbide structure

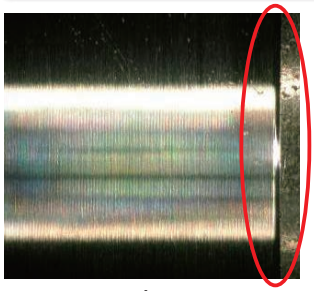


Super micro-grain carbide structure

The result of intensive reseach and development for improving carbide grades

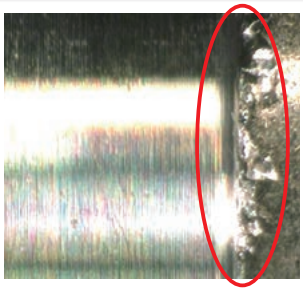
The NTK carbide grade series shows very stable performance under a wide range of conditions. NTK uses micro-grain carbide well balanced between wear resistance and toughness, as substrate.

Features Superior cutting performance



No burrs

Machined with our insert with a sharp cutting edge



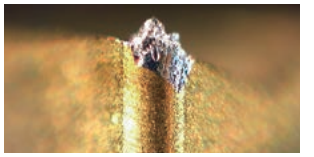
Burrs

Machined with a competitor's product with a honed cutting edge

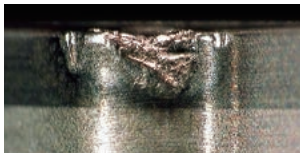
Relentless pursuit of better cutting performance

NTK takes pride in its carbide grade series for their outstanding cutting performance as a result of grinding ultra sharp cutting edges. This outstanding cutting performance benefits in better burr control, lower tool pressure, stabilized dimensions and improved work hardening control.

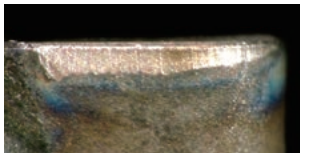
Features Precise analysis on insert wear patterns



Build-up edge



Chipping / fracture



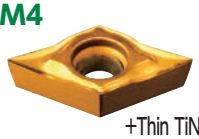
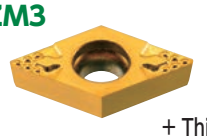
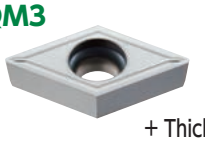
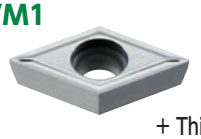
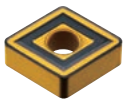
Flank wear



Wear on rake

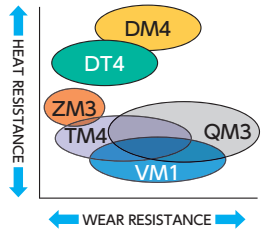
Continuous research on insert tool life

Damage to insert cutting edges varies depending on the machining process and the work material. There are various types of coatings that reduce such damage to prolong the tool life. NTK's carbide series offers a variety of coated insert grades which have been developed to improve their resistance characteristics, including wear, fracture, adhesion, oxidation and the like, by utilizing our state-of-the-art technology.

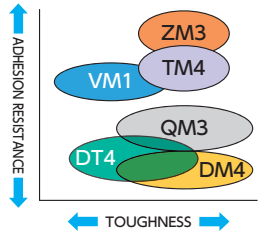
	Grade / Coating	Applications / Features	Density g/cm³	Hardness HRA	Bending strength MPa	Young's modulus GPa	Thermal expansion coefficient X10⁻⁶/K	Thermal conductivity W/m・K
			Physical properties*					
PVD coated	**DM4**  Micro-grain carbide + Thick TiN-TiCN-TiAlN coat	P M S H ●Best oxidation resistance enable high temperature machining	14.4	91.0	3000	580	5.8	63
PVD coated	**DT4**  Micro-grain carbide + Thin TiN-TiCN-TiAlN coat	P M S H ●Excellent oxidation resistance for Swiss-type lathes	14.4	91.0	3000	580	5.8	63
PVD coated	**TM4**  Micro-grain carbide +Thin TiN-TiCN-TiN coat	P M N S ●Best combination of wear resistance and toughness and adhesion resistance for Swiss-type lathes	14.4	91.0	3000	580	5.8	63
PVD coated	**ZM3**  Micro-grain carbide + Thick TiN coat	P M N ●Best Adhesion resistance enables high accuracy machining	14.4	91.0	3000	580	5.8	63
PVD coated	**QM3**  Micro-grain carbide + Thick TiCN coat	P M S H ●Best wear resistance enable stable machining	14.4	91.0	3000	580	5.8	63
PVD coated	**VM1**  Micro-grain carbide + Thin TiCN coat	P M N ●Best edge sharpness and good wear resistance	14.8	92.0	2500	640	5.7	84
Uncoated	**KM1**  Micro-grain carbide	P M N ●Best for non-ferrous material with mirror finish	14.8	92.0	2500	640	5.7	84
CVD coated	**CP1**  Carbide + Thick film Al_2O_3-TiCN coat	K ●Good balance of wear resistance and toughness for cast iron machining	14.9	92.0	2400	640	—	—

Applications map

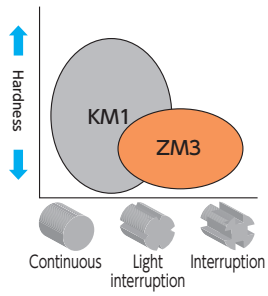
■Correlation chart 1



■Correlation chart 2



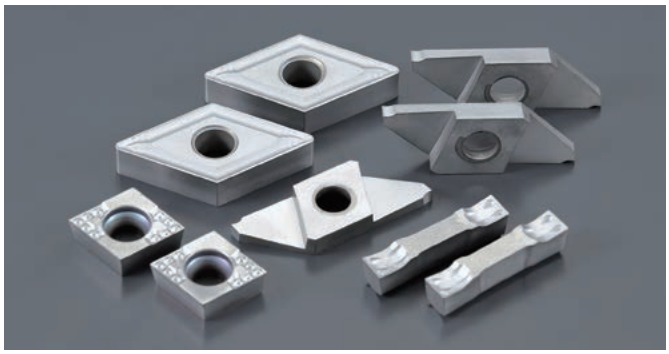
■Aluminum / Brass



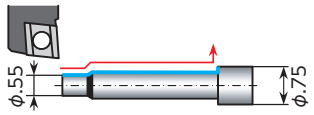
※For products with coating, the values of the base material are indicated.

QM3

Superb wear resistance and fracture resistance in interrupted cutting !



Spindle	
4135	
330 SFM	
.0012 IPR	
.008" DOC	
WET	
NTK : **QM3**	600 pcs
Competitor's PVD-coated carbide	300 pcs



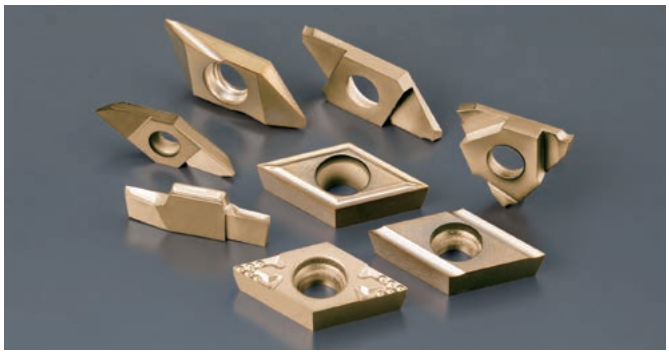
Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels ● Heat resistant alloys	Swiss-type lathes Conventional lathes	Wear resistance

Features

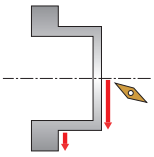
- ***Excellent toughness and wear resistance for wide speed range***
- ***Stable interrupted machining of steel***

NEW DT4

Excellent heat resistance for Swiss-type lathes !



Pin	
440 CSS	
260 SFM	
.002 IPR	
.039" DOC	
WET	
NTK : **DT4**	1100 pcs
Competitor's PVD-coated carbide	800 pcs



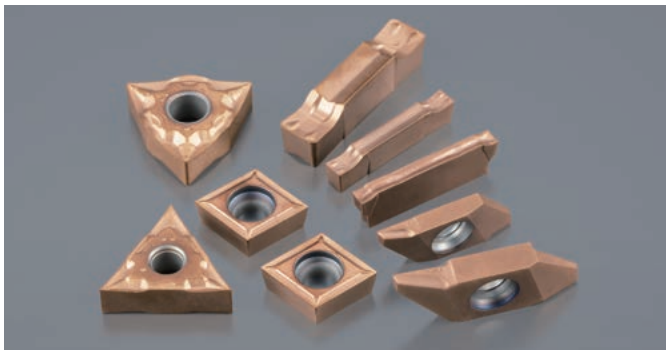
Best for	Optimized for	Excellent in
● Titanium alloys ● Stainless steels ● Alloy steels ● Carbon steels ● Heat resistant alloys	Swiss-type lathes	Oxidation Heat resistance

Features

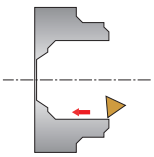
- ***Excellent oxidation resistance for Swiss-type lathes***

NEW DM4

Excellent oxidation resistance !



Case	
Inco 718	
130 SFM	
.001 IPR	
.008" DOC	
WET	
NTK : **DM4**	110 pcs
Competitor's PVD-coated carbide	90 pcs



Best for	Optimized for	Excellent in
● Titanium alloys ● Stainless steels ● Alloy steels ● Carbon steels ● Heat resistant alloys	Conventional lathes Swiss-type lathes	Oxidation Heat resistance

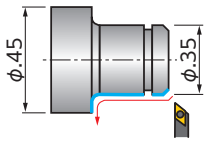
Features

- ***Best oxidation resistance for high temperature machining***
- ***Optimized for Conventional / Swiss-type lathes***

TM4

Next generation standard insert grade Swiss-type lathes !



Automobile parts	
304 SS	
260 SFM	
.0008 IPR	
.047" DOC	
WET	
NTK : **TM4**	950 pcs
Competitor's PVD-coated carbide	500 pcs

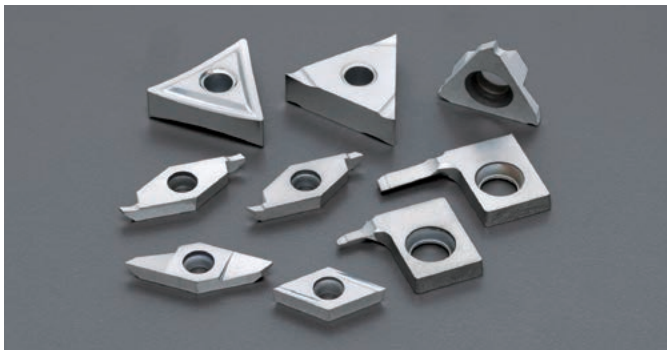
Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels	Swiss-type lathes	Balance

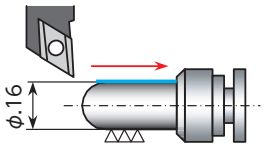
Features

- ***Excellent dimensional stability and tool life thanks to triple titanium layers with excellent adherence to insert substrate***

VM1

High precision machining of small diameter parts !



Plug	
12L14	
460 SFM	
.0006 IPR	
.004" DOC	
WET	
NTK : **VM1**	800-1000 pcs
Competitor's PVD-coated carbide	150 pcs

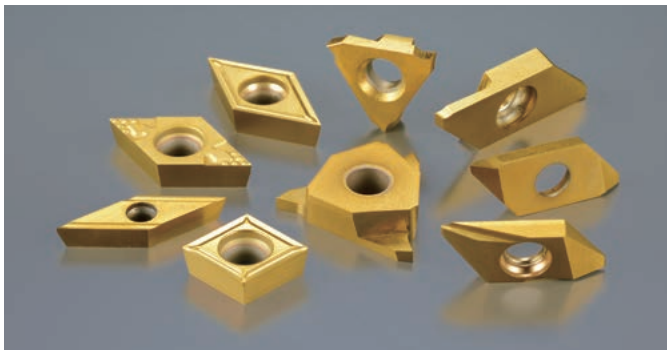
Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels	Swiss-type lathes	Edge sharpness

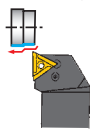
Features

- ***Especially for machining free cutting steels (SUM materials)***
- ***For high-precision machining with longer tool life even in the high-speed machining range***

ZM3

The best selling grade for automatic lathes !



Case	
1010	
330 SFM	
.0047 IPR	
.012"-.015" DOC	
WET	
NTK : **ZM3**	6000 pcs
Competitor's PVD-coated carbide	150 pcs

Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels ● Non-ferrous materials	Swiss-type lathes Conventional lathes	Adhesion resistance

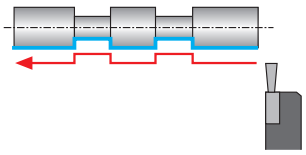
Features

- ***Stabilizes machining dimensions thanks to the coating being firmly adhered to the substrate***
- ***A wide range of cutting tools in various sizes available for automatic lathes***

Micro-grain Carbide

KM1 Good for non-ferrous materials like PEEK, Brass, Aluminum and Copper

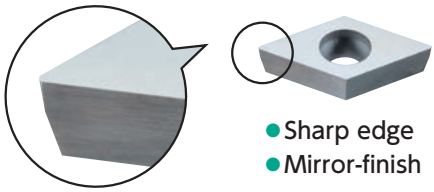


Spool machining	
5056 (Aluminium)	
300 ~ 560 SFM	
.0016 IPR	
.02"-.20" DOC	
WET	
NTK : **KM1**	300 pcs
Competitor's PVD-coated carbide	200 pcs

Features

- ***Very sharp cutting edges with uncoated Micro-grain carbide***
- ***Excellent adhesion resistance because of mirror-finish***
- ***A wide range of cutting tools in various types available for Swiss-type lathes***

Best for	Optimized for	Excellent in
● Aluminium ● Plastic ● Non-ferrous materials	Swiss-type lathes	Edge sharpness

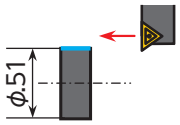


- Sharp edge
- Mirror-finish

CVD-coated Carbide

CP1 For roughing cast iron and ductile cast iron !



HUB	
Ductile Cast Iron	
660 SFM	
.0047 IPR	
.004" DOC	
WET	
NTK : **CP1**	200 pcs
Competitor's CVD coated carbide	100 pcs

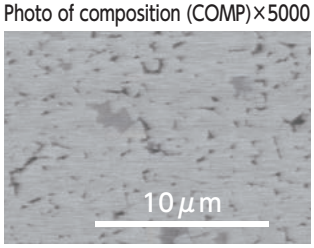
Features

- ***High wear resistance achieved by laminating thick film TiCN layer and Al_2O_3 layer as the coating; Great for cast iron cutting even in high-speed range***
- ***Excellent deposition resistance due to our original insert rake surface treatment to bring the mirror finish***
- ***Can also be used for machining ductile cast iron***

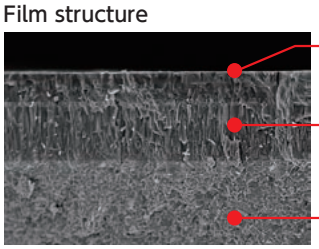
Best for	Optimized for	Excellent in
● Ductile cast iron ● Gray cast iron	Conventional lathes	Wear resistance

【Coating structure】

Photo of composition (COMP)×5000



Film structure



Coating of highly smooth micro-grain Al_2O_3

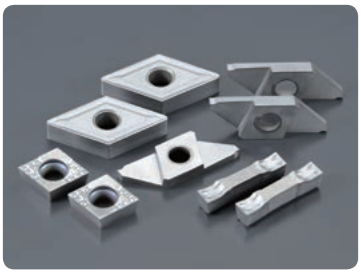
Coating of micro-grain pillar-shaped TiCN

Substrate : ultra-hard carbide

Equivalent to HRA 91.3 Young's modulus : 640 GPa

PVD Coatings

QM3/Q15 Q-Coat

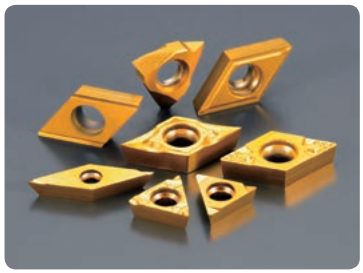


Best wear resistance

- *stainless steel*
- *Carbon steel*
- *Alloy steel*

➡D38 • D44

TM4 TM-Coat



Best balance of wear resistance and adhesion resistance

- *For small part machining in general*

➡D45

DM4 DM-Coat



Best heat resistance

- *Heat resistant alloy*
- *Stainless steel*
- *Hardened material*

➡D44

DT4 DT-Coat

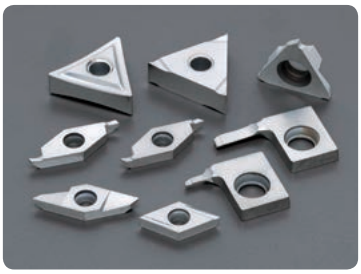


Best balance of heat resistance and sharp edges

- *Titanium alloy*
- *Heat resistant alloy*
- *Stainless steel*
- *Hardened material*

➡D44

VM1 V-Coat



Best edge sharpness

- *Titanium alloy*
- *Non-ferrous material*
- *Stainless steel*
- *Plastic*

➡D45

ZM3/C7Z Z-Coat



Best adhesion resistance

- *General purpose machining*

➡D39 • D45

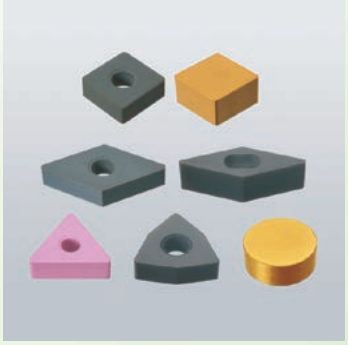
Coating Specifications

	Q-Coat	TM-Coat	DM-Coat	DT-Coat	V-Coat	Z-Coat
Thickness	Thick	Thin	Thick	Thin	Thin	Thick
Wear Resistance	◎	○	○	○	○	
Heat Resistance			◎	◎		○
Adhesion Resistance		○				◎
Edge Sharpness		○		○	◎	
Composition	TiCN	Multilayer	Multilayer	Multilayer	TiCN	TiN

◎1st choice ○2nd choice

MEMO

E

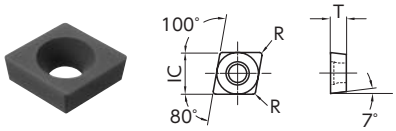


Insert Item List

- BIDEMICS / Ceramics ····· E2
- BIDEMICS (Brazed) / CBN / PCD···E22
- Carbide / Cermet ·····E28

CCGW

(inch)	IC	T
CCGW 21.5	1/4	3/32
CCGW 32.5	3/8	5/32
CCGW 43	1/2	3/16



		JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
Steel	P															
Stainless Steel	M															
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N															
Heat Resistant Alloy	S	●	●	●	●	●										
Hardened Material	H					●						●	●	●	●	●

Item Number	ISO Item Number	IC	R	JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
CCGW 21.51 T0225	CCGW 060204 T00525	1/4	.016											●				●
CCGW 21.52 T0225	CCGW 060208 T00525	1/4	.031											●				●
CCGW 32.51 T0425	CCGW 09T304 T01025	3/8	.016											●				●
CCGW 32.52 T0425	CCGW 09T308 T01025	3/8	.031											●				●
CCGW 431 T0420	CCGW 120404 T01020	1/2	.016						●									
CCGW 432 T0420	CCGW 120408 T01020	1/2	.031						●	●								

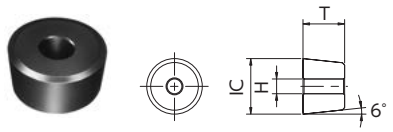
Holders ➡ Q10
Boring bars ➡ V26

CDH

(inch)	IC	T	H
CDH 22	1/2	1/4	.125
CDH 33	3/4	3/8	.250

(inch)	IC	T	H
CDH 42	1	1/2	.266
CDH 43	1	3/4	.266

(inch)	IC	T	H
CDH 515	1-1/4	3/8	.391
CDH 53	1-1/4	3/4	.391



		JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
Steel	P															
Stainless Steel	M															
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N															
Heat Resistant Alloy	S	●	●	●	●	●										
Hardened Material	H					●						●	●	●	●	●

Item Number	ISO Item Number	IC	R	JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
CDH 22 P2810	CDH 1207 P07010	1/2												●	●	●		
CDH 33 P6015	CDH 1909 P15015	3/4												○				
CDH 33 Q6010	CDH 1909 Q15010	3/4												●				
CDH 33 Q6010B	CDH 1909 Q15010B	3/4													●	●		
CDH 42 P8015	CDH 2512 P20015	1														●		
CDH 42 P12010	CDH 2512 P30010G	1												●	●			
CDH 43 P6010	CDH 2519 P15015	1												●				
CDH 515 P7110B	CDH 3209 P18010B	1-1/4												●				
CDH 515 P7110	CDH 3209 P18010	1-1/4												●				
CDH 515 P8015	CDH 3209 P20015	1-1/4														●		
CDH 515 Q7110	CDH 3209 Q18010	1-1/4												●	●	●		
CDH 53 P8015	CDH 3219 P20015	1-1/4														●		
CDH 53 Q9515	CDH 3219 Q24015	1-1/4												●	●			

Holders ➡ F20

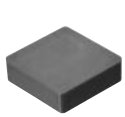
● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

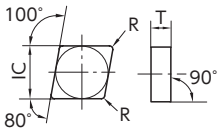
CNG

(inch)	IC	T
CNG 43	1/2	3/16
CNG 45	1/2	5/16

(inch)	IC	T
CNG 54	5/8	1/4
CNG 55	5/8	5/16

(inch)	IC	T
CNG 64	3/4	1/4
CNG 65	3/4	5/16





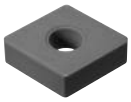
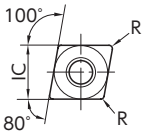
Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Hardened Material	H	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
CNG 431 T0425	CNGN 120404 T01025	1/2	.016										○	○				
CNG 431 T0525	CNGN 120404 T01225	1/2	.016											●				
CNG 432 T0220	CNGN 120408 T00520	1/2	.031			●	●	●										
CNG 432 T0420	CNGN 120408 T01020	1/2	.031					●		●								
CNG 432 T0425	CNGN 120408 T01025	1/2	.031										●	○			○	
CNG 432 T0525	CNGN 120408 T01225	1/2	.031											●				●
CNG 432 T0820	CNGN 120408 T02020	1/2	.031						○									
CNG 432 S0825	CNGN 120408 S02025	1/2	.031														○	
CNG 432 T0825	CNGN 120408 T02025	1/2	.031			○		○			○							
CNG 433 T0220	CNGN 120412 T00520	1/2	.047			●	●	●										
CNG 433 T0420	CNGN 120412 T01020	1/2	.047					●		●								
CNG 433 T0425	CNGN 120412 T01025	1/2	.047					○			○	●	●	○			○	
CNG 433 T0525	CNGN 120412 T01225	1/2	.047											●				●
CNG 433 T0820	CNGN 120412 T02020	1/2	.047						●									
CNG 433 S0825	CNGN 120412 S02025	1/2	.047														○	
CNG 433 T0825	CNGN 120412 T02025	1/2	.047			○		○			○							
CNG 434 T0220	CNGN 120416 T00520	1/2	.063				●	●										
CNG 434 T0420	CNGN 120416 T01020	1/2	.063							●								
CNG 434 T0820	CNGN 120416 T02020	1/2	.063						○									
CNG 434 T0825	CNGN 120416 T02025	1/2	.063			○												
CNG 435 T0825	CNGN 120420 T02025	1/2	.079										○					
CNG 452 T0220	CNGN 120708 T00520	1/2	.031					●										
CNG 452 T0825	CNGN 120708 T02025	1/2	.031											●				
CNG 453 T0220	CNGN 120712 T00520	1/2	.047				●	●										
CNG 453 T0825	CNGN 120712 T02025	1/2	.047											●				
CNG 454 T0220	CNGN 120716 T00520	1/2	.063					●										
CNG 454 T0825	CNGN 120716 T02025	1/2	.063											●				
CNG 543 T0825	CNGN 160612 T02025	5/8	.047											●				
CNG 552 T0825	CNGN 160708 T02025	5/8	.031											●				
CNG 554 T0220	CNGN 160716 T00520	5/8	.063					○										
CNG 643 T0825	CNGN 190612 T02025	3/4	.047											●				
CNG 644 T0825	CNGN 190616 T02025	3/4	.063											●				
CNG 646 T0220	CNGN 190624 T00520	3/4	.094					●										
CNG 648 T0825	CNGN 190632 T02025	3/4	.125											●				
CNG 656 T0220	CNGN 190724 T00520	3/4	.094				●											

Holders ➡ F6 • F7
Boring bars ➡ G5

CNGA

(inch)	IC	T
CNGA 43	1/2	3/16
CNGA 54	5/8	1/4
CNGA 64	3/4	1/4

Steel	P	
Stainless Steel	M	
Cast Iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	● ● ● ● ●
Hardened Material	H	● ● ● ● ● ●

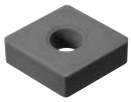
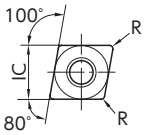
Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
CNGA 431 T0220	CNGA 120404 T00520	1/2	.016					●										
CNGA 431 T0425	CNGA 120404 T01025	1/2	.016											●			●	
CNGA 431 T0525	CNGA 120404 T01225	1/2	.016										●					●
CNGA 431 S0825	CNGA 120404 S02025	1/2	.016														●	
CNGA 431 Z0825	CNGA 120404 Z02025	1/2	.016															●
CNGA 432 T0220	CNGA 120408 T00520	1/2	.031			●	●	●										
CNGA 432 T0320	CNGA 120408 T00820	1/2	.031		●													
CNGA 432 T0420	CNGA 120408 T01020	1/2	.031					●		●								
CNGA 432 T0425	CNGA 120408 T01025	1/2	.031										○	○			●	
CNGA 432 T0525	CNGA 120408 T01225	1/2	.031								●		●	●	●			●
CNGA 432 T0820	CNGA 120408 T02020	1/2	.031						●					●				
CNGA 432 Z0820	CNGA 120408 Z02020	1/2	.031					●										
CNGA 432 S0825	CNGA 120408 S02025	1/2	.031														●	
CNGA 432 T0825	CNGA 120408 T02025	1/2	.031			○												
CNGA 432 Z0825	CNGA 120408 Z02025	1/2	.031															●
CNGA 433 T0220	CNGA 120412 T00520	1/2	.047			●	●	●										
CNGA 433 T0320	CNGA 120412 T00820	1/2	.047		●													
CNGA 433 T0420	CNGA 120412 T01020	1/2	.047			●		●		●								
CNGA 433 T0425	CNGA 120412 T01025	1/2	.047								●		○	○			●	
CNGA 433 T0525	CNGA 120412 T01225	1/2	.047										●	●	●			●
CNGA 433 T0820	CNGA 120412 T02020	1/2	.047			●			●					●				
CNGA 433 Z0820	CNGA 120412 Z02020	1/2	.047					●										
CNGA 433 S0825	CNGA 120412 S02025	1/2	.047														●	
CNGA 433 T0825	CNGA 120412 T02025	1/2	.047			○							●					
CNGA 433 Z0825	CNGA 120412 Z02025	1/2	.047															●
CNGA 434 T0220	CNGA 120416 T00520	1/2	.063			○	●	●										
CNGA 434 T0420	CNGA 120416 T01020	1/2	.063					●		●								
CNGA 434 T0525	CNGA 120416 T01225	1/2	.063											●	●			
CNGA 434 T0820	CNGA 120416 T02020	1/2	.063						●									
CNGA 434 T0825	CNGA 120416 T02025	1/2	.063			○												
CNGA 542 T0825	CNGA 160608 T02025	5/8	.031											●				
CNGA 543 T0220	CNGA 160612 T00520	5/8	.047				●	●										
CNGA 543 T0420	CNGA 160612 T01020	5/8	.047							●								
CNGA 543 T0820	CNGA 160612 T02020	5/8	.047						●									
CNGA 543 T0825	CNGA 160612 T02025	5/8	.047											●	●			
CNGA 543 Z0825	CNGA 160612 Z02025	5/8	.047					●										●
CNGA 544 T0220	CNGA 160616 T00520	5/8	.063				●	●										
CNGA 544 T0825	CNGA 160616 T02025	5/8	.063											●				
CNGA 544 Z0825	CNGA 160616 Z02025	5/8	.063															●
CNGA 643 T0220	CNGA 190612 T00520	3/4	.047				●	●										
CNGA 643 T0420	CNGA 190612 T01020	3/4	.047					●		●								
CNGA 643 T0525	CNGA 190612 T01225	3/4	.047															
CNGA 643 Z0620	CNGA 190612 Z01520	3/4	.047					●										
CNGA 643 T0820	CNGA 190612 T02020	3/4	.047						●									
CNGA 643 T0825	CNGA 190612 T02025	3/4	.047											●	●			
CNGA 644 T0220	CNGA 190616 T00520	3/4	.063				●	●										
CNGA 644 T0825	CNGA 190616 T02025	3/4	.063											●				

Holders ➡ F6 • F7 • Q37
Boring bars ➡ G5

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

CNGA-WL with wiper for higher feed

(inch)	IC	T
CNGA 43 WL	1/2	3/16

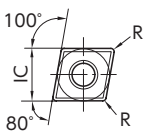
Workpiece		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
		JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
Steel	P		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M															
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N															
Heat Resistant Alloy	S	●	●	●	●	●										
Hardened Material	H					●						●	●	●	●	●

Item Number	ISO Item Number	IC	R	JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
CNGA 431 WL T0425	CNGA 120404 WL T01025	1/2	.016			●											●	
CNGA 431 WL T0525	CNGA 120404 WL T01225	1/2	.016			●												●
CNGA 432 WL T0425	CNGA 120408 WL T01025	1/2	.031			●											●	
CNGA 432 WL T0525	CNGA 120408 WL T01225	1/2	.031			●												●
CNGA 433 WL T0425	CNGA 120412 WL T01025	1/2	.047			●											●	
CNGA 433 WL T0525	CNGA 120412 WL T01225	1/2	.047			●												●

Holders ➡ F6 • F7 • Q37
Boring bars ➡ G5

CNGG with chipbreaker

(inch)	IC	T
CNGG 43	1/2	3/16

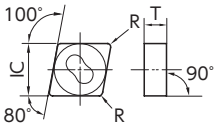
Workpiece		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
		JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
Steel	P		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M															
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N															
Heat Resistant Alloy	S	●	●	●	●	●										
Hardened Material	H					●						●	●	●	●	●

Item Number	ISO Item Number	IC	R	JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
CNGG 432 Z0430 AG	CNGG 120408 Z01030 AG	1/2	.031														●	
CNGG 433 Z0430 AG	CNGG 120412 Z01030 AG	1/2	.047														●	

Holders ➡ F6 • F7 • Q37
Boring bars ➡ G5

CNGX

(inch)	IC	T
CNGX 43	1/2	3/16
CNGX 45	1/2	5/16

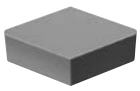
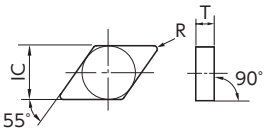



		Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
							SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
						JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
Steel	P	CNGX 432 T0320	CNGX 120408 T00820	1/2	.031		●					●								
Stainless Steel	M	CNGX 432 T0420	CNGX 120408 T01020	1/2	.031															
Cast Iron	K	CNGX 432 T0820	CNGX 120408 T02020	1/2	.031						●									
Non-Ferrous Material	N	CNGX 433 T0220	CNGX 120412 T00520	1/2	.047		●													
Heat Resistant Alloy	S	CNGX 433 T0320	CNGX 120412 T00820	1/2	.047		●													
Hardened Material	H	CNGX 433 T0420	CNGX 120412 T01020	1/2	.047							●								
		CNGX 433 T0820	CNGX 120412 T02020	1/2	.047						●									
		CNGX 434 T0420	CNGX 120416 T01020	1/2	.063							●								
		CNGX 434 T0820	CNGX 120416 T02020	1/2	.063						●									
		CNGX 452 T0220	CNGX 120708 T00520	1/2	.031			●												
		CNGX 452 T0320	CNGX 120708 T00820	1/2	.031		●													
		CNGX 452 T0420	CNGX 120708 T01020	1/2	.031							●								
		CNGX 452 T0820	CNGX 120708 T02020	1/2	.031						●									
		CNGX 452 T0825	CNGX 120708 T02025	1/2	.031															
		CNGX 453 T0220	CNGX 120712 T00520	1/2	.047			●												
		CNGX 453 T0320	CNGX 120712 T00820	1/2	.047		●													
		CNGX 453 T0420	CNGX 120712 T01020	1/2	.047		●					●								
		CNGX 453 T0820	CNGX 120712 T02020	1/2	.047			●			●									
		CNGX 453 T0825	CNGX 120712 T02025	1/2	.047							●		●						
		CNGX 453 S0830	CNGX 120712 S02030	1/2	.047														●	
		CNGX 454 T0420	CNGX 120716 T01020	1/2	.063							●								
		CNGX 454 T0425	CNGX 120716 T01025	1/2	.063															
		CNGX 454 T0820	CNGX 120716 T02020	1/2	.063			●			●									
		CNGX 454 S0825	CNGX 120716 S02025	1/2	.063															
		CNGX 454 T0825	CNGX 120716 T02025	1/2	.063							●								
		CNGX 454 S0830	CNGX 120716 S02030	1/2	.063														●	

Holders ➡ F6
Boring bars ➡ G5

DNG

(inch)	IC	T
DNG 43	1/2	3/16
DNG 45	1/2	5/16
DNG 54	5/8	1/4

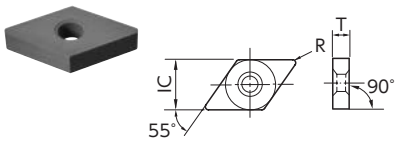
		Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
							SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
						JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
Steel	P	DNG 431 T0420	DNGN 150404 T01020	1/2	.016											○				
Stainless Steel	M	DNG 432 T0220	DNGN 150408 T00520	1/2	.031					●										
Cast Iron	K	DNG 432 T0420	DNGN 150408 T01020	1/2	.031					●										
Non-Ferrous Material	N	DNG 432 T0425	DNGN 150408 T01025	1/2	.031										○				○	
Heat Resistant Alloy	S	DNG 432 T0525	DNGN 150408 T01225	1/2	.031											●				
Hardened Material	H	DNG 432 S0825	DNGN 150408 S02025	1/2	.031														○	
		DNG 433 T0220	DNGN 150412 T00520	1/2	.047					●										
		DNG 433 T0420	DNGN 150412 T01020	1/2	.047					●										
		DNG 433 T0625	DNGN 150412 T01525	1/2	.047											●				
		DNG 433 T0825	DNGN 150412 T02025	1/2	.047					○										
		DNG 434 T0220	DNGN 150416 T00520	1/2	.063					●										
		DNG 434 T0420	DNGN 150416 T01020	1/2	.063					●										
		DNG 434 T0425	DNGN 150416 T01025	1/2	.063											●				
		DNG 453 T0825	DNGN 150712 T02025	1/2	.047					○						●				
		DNG 454 T0825	DNGN 150716 T02025	1/2	.063											●				
		DNG 543 T0825	DNGN 190612 T02025	5/8	.047											●				

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

DNGA

(inch)	IC	T
DNGA 33	3/8	3/16
DNGA 43	1/2	3/16

(inch)	IC	T
DNGA 44	1/2	1/4
DNGA 54	5/8	1/4



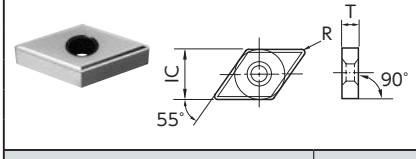
		JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M															
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N															
Heat Resistant Alloy	S	●	●	●	●	●										
Hardened Material	H					●						●	●	●	●	●

Item Number	ISO Item Number	IC	R														
DNGA 331 T0820	DNGA 110404 T02020	3/8	.016											●			
DNGA 431 T0220	DNGA 150404 T00520	1/2	.016					●						●			
DNGA 431 T0425	DNGA 150404 T01025	1/2	.016									○	●			●	
DNGA 431 T0525	DNGA 150404 T01225	1/2	.016														●
DNGA 431 S0825	DNGA 150404 S02025	1/2	.016													●	
DNGA 431 Z0825	DNGA 150404 Z02025	1/2	.016										●				●
DNGA 432 T0220	DNGA 150408 T00520	1/2	.031			●	●	●									
DNGA 432 T0320	DNGA 150408 T00820	1/2	.031		●												
DNGA 432 T0420	DNGA 150408 T01020	1/2	.031					●		●							
DNGA 432 T0425	DNGA 150408 T01025	1/2	.031									○	○			●	
DNGA 432 T0525	DNGA 150408 T01225	1/2	.031									●	●				●
DNGA 432 T0820	DNGA 150408 T02020	1/2	.031						●				●				
DNGA 432 S0825	DNGA 150408 S02025	1/2	.031										○			●	
DNGA 432 T0825	DNGA 150408 T02025	1/2	.031			○				●							
DNGA 432 Z0820	DNGA 150408 Z02020	1/2	.031					●									
DNGA 432 Z0825	DNGA 150408 Z02025	1/2	.031														●
DNGA 433 T0220	DNGA 150412 T00520	1/2	.047			●	●	●									
DNGA 433 T0320	DNGA 150412 T00820	1/2	.047		●												
DNGA 433 T0420	DNGA 150412 T01020	1/2	.047					●		●							
DNGA 433 T0425	DNGA 150412 T01025	1/2	.047								○					○	
DNGA 433 T0525	DNGA 150412 T01225	1/2	.047									●	●				
DNGA 433 T0820	DNGA 150412 T02020	1/2	.047						●				●				
DNGA 433 S0825	DNGA 150412 S02025	1/2	.047													●	
DNGA 433 T0825	DNGA 150412 T02025	1/2	.047			●				●							
DNGA 433 Z0825	DNGA 150412 Z02025	1/2	.047														●
DNGA 434 T0220	DNGA 150416 T00520	1/2	.063					●									
DNGA 434 T0420	DNGA 150416 T01020	1/2	.063					●									
DNGA 434 T0525	DNGA 150416 T01225	1/2	.063														●
DNGA 434 S0820	DNGA 150416 S02020	1/2	.063										●				
DNGA 436 T0420	DNGA 150424 T01020	1/2	.094					●									
DNGA 442 T0825	DNGA 150608 T02025	1/2	.031										●				
DNGA 542 T0820	DNGA 190608 T02020	5/8	.031										●				
DNGA 543 T0820	DNGA 190612 T02020	5/8	.047										●				
DNGA 544 T0825	DNGA 190616 T02025	5/8	.063										●				

Holders ➡ F8 • F9 • Q38
Boring bars ➡ G5

DNGG with chip-breaker

(inch)	IC	T
DNGG 43	1/2	3/16



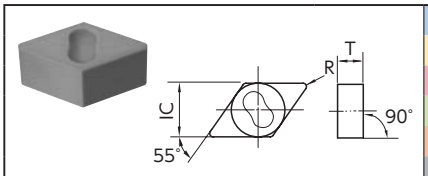
		JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M															
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N															
Heat Resistant Alloy	S	●	●	●	●	●										
Hardened Material	H					●						●	●	●	●	●

Item Number	ISO Item Number	IC	R														
DNGG 432 Z0430 AG	DNGG 150408 Z01030 AG	1/2	.031												●		
DNGG 433 Z0430 AG	DNGG 150412 Z01030 AG	1/2	.047												○		

Holders ➡ F8 • F9 • Q38
Boring bars ➡ G5

DNGX

(inch)	IC	T
DNGX 1207	.394	5/16
DNGX 45	1/2	5/16

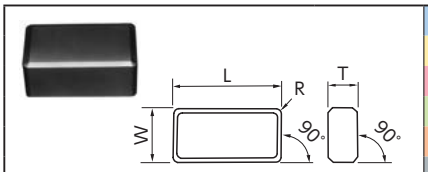


		JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
	Steel	P														
	Stainless Steel	M														
	Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Non-Ferrous Material	N														
	Heat Resistant Alloy	S	●	●	●	●	●									
	Hardened Material	H					●						●	●	●	●	●	●
Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
DNGX 120712 T0825	DNGX 120712 T02025	.394	.047			●						●						
DNGX 452 T0220	DNGX 150708 T00520	1/2	.031			●												
DNGX 454 T0825	DNGX 150716 T02025	1/2	.063							○								

Holders ➡ F8 • F9
Boring bars ➡ G5

LNJ / LNM

(inch)	W	L	T
LNJ / M 6688	3/4	1-1/2	1/2

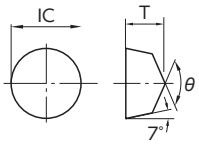


		JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
	Steel	P														
	Stainless Steel	M														
	Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Non-Ferrous Material	N														
	Heat Resistant Alloy	S	●	●	●	●	●									
	Hardened Material	H					●						●	●	●	●	●	●
Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
LNJ 6688 P6015	LNJ 6688 P15015		.125										●					
LNJ 6688 Q8015	LNJ 6688 Q20015		.125											●	●			
LNM 6688 S6015	LNM 6688 SN2		.125					○										
LNM 6688 SNX2	LNM 6688 SNX2		.125									○						
LNM 6688 SNX6	LNM 6688 SNX6		.125												○			

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

RCGX

(inch)	IC	T	θ
RCGX 23	1/4	3/16	120
RCGX 25	1/4	5/16	120
RCGX 35	3/8	5/16	120
RCGX 45	1/2	5/16	120

		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
Item Number	ISO Item Number	IC	JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
Steel P				○	○	○	●	●	●	●	●	●	●	●	○	○	○
Stainless Steel M																	
Cast Iron K				○	○	○	●	●	●	●	●	●	●	●	○	○	○
Non-Ferrous Material N																	
Heat Resistant Alloy S		●	●	●	●	●											
Hardened Material H							○						○	○	●	●	●
RCGX 23 T0220	RCGX 060400 T00520	1/4			●	●	●										
RCGX 23 T0320	RCGX 060400 T00820	1/4	●	●													
RCGX 25 T0220	RCGX 060700 T00520	1/4			●	●	●										
RCGX 25 Z0820	RCGX 060700 Z02020	1/4					●										
RCGX 35 E02	RCGX 090700 E004	3/8	●*				●										
RCGX 35 T0220	RCGX 090700 T00520	3/8			●	●	●										
RCGX 35 T0320	RCGX 090700 T00820	3/8	●	●			●										
RCGX 35 T0420	RCGX 090700 T01020	3/8			●		●										
RCGX 35 Z0420	RCGX 090700 Z01020	3/8					●										
RCGX 35 Z0820	RCGX 090700 Z02020	3/8					●										
RCGX 45 E02	RCGX 120700 E004	1/2	●*	●			●										
RCGX 45 T0220	RCGX 120700 T00520	1/2			●	●	●										
RCGX 45 T0320	RCGX 120700 T00820	1/2	●	●			●										
RCGX 45 T0420	RCGX 120700 T01020	1/2			●		●										
RCGX 45 Z0620	RCGX 120700 Z01520	1/2					●										
RCGX 45 Z0820	RCGX 120700 Z02020	1/2					●										

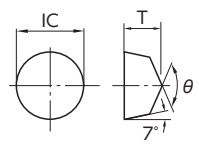
*To be released in November 2015.

Holders ➡ F17 • F18 • F19

RCGX10

(inch)	IC	T	θ
RCGX 101	3/16	.240	90
RCGX 102	1/4	.309	120
RCGX 103	3/8	.309	120
RCGX 104	1/2	.312	120

(inch)	IC	T	θ
RCGX 105	5/8	.388	120
RCGX 106	3/4	.388	120
RCGX 108	1	.461	140

		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
Item Number	ISO Item Number	IC	JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
Steel P				○	○	○	●	●	●	●	●	●	●	●	○	○	○
Stainless Steel M																	
Cast Iron K				○	○	○	●	●	●	●	●	●	●	●	○	○	○
Non-Ferrous Material N																	
Heat Resistant Alloy S		●	●	●	●	●											
Hardened Material H							○						○	○	●	●	●
RCGX 101 P2010		3/16											●				
RCGX 102 P4815		1/4											●	●	●		
RCGX 102 T0225		1/4			●	●											
RCGX 102 T0820		1/4											●				
RCGX 103 P4815		3/8											●	●			
RCGX 103 P8015		3/8													●		
RCGX 103 T0820		3/8											●				
RCGX 103 T0825		3/8															●
RCGX 103 T1625		3/8															●
RCGX 104 P6015		1/2											●	●	●		
RCGX 104 P8015		1/2													●		
RCGX 104 T0820		1/2											●				
RCGX 104 T1625		1/2															●
RCGX 105 P4815		5/8											●	●			
RCGX 105 P8015		5/8													●		
RCGX 105 S8020		5/8											●		●		
RCGX 106 P4815		3/4											●				
RCGX 106 P8015		3/4											●	●	●		
RCGX 108 P8015		1											●				

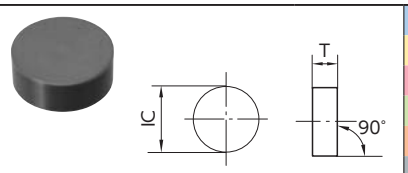
Holders ➡ F18 • F19

RNG

(inch)	IC	T
RNG 32	3/8	1/8
RNG 33	3/8	3/16
RNG 42	1/2	1/8
RNG 43	1/2	3/16

(inch)	IC	T
RNG 45	1/2	5/16
RNG 55	5/8	5/16
RNG 64	3/4	1/4
RNG 65	3/4	5/16

(inch)	IC	T
RNG 85	1	5/16
RNG 86	1	3/8



		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
Steel	P															
Stainless Steel	M															
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N															
Heat Resistant Alloy	S	●	●	●	●	●										
Hardened Material	H					●						●	●	●	●	●

Item Number	ISO Item Number	IC	R	JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
RNG 32 T0220	RNGN 090300 T00525	3/8						●										
RNG 32 T0425	RNGN 090300 T01025	3/8												●				
RNG 32 T0525	RNGN 090300 T01225	3/8																●
RNG 33 T0320	RNGN 090400 T00820	3/8			●													
RNG 42 T0425	RNGN 120300 T01025	1/2												●				
RNG 43 E01	RNGN 120400 E002	1/2				●*												
RNG 43 E02	RNGN 120400 E004	1/2			●*													
RNG 43 T0220	RNGN 120400 T00520	1/2				●	●	●										
RNG 43 T0225	RNGN 120400 T00525	1/2				○		○										
RNG 43 T0320	RNGN 120400 T00820	1/2			●													
RNG 43 T0420	RNGN 120400 T01020	1/2				●		●		●						●		
RNG 43 T0425	RNGN 120400 T01025	1/2											●	○			○	
RNG 43 T0525	RNGN 120400 T01225	1/2												●	●			●*
RNG 43 T0820	RNGN 120400 T02020	1/2							●									
RNG 43 S0825	RNGN 120400 S02025	1/2															●	
RNG 43 T0825	RNGN 120400 T02025	1/2				○												
RNG 43 Z0825	RNGN 120400 Z02025	1/2														●		●
RNG 43 T2820	RNGN 120400 T07020	1/2												●				
RNG 45 E01	RNGN 120700 E002	1/2				●		●										
RNG 45 E02	RNGN 120700 E004	1/2		●	●													
RNG 45 E03	RNGN 120700 E007	1/2												○				
RNG 45 T0220	RNGN 120700 T00520	1/2				●	●	●										
RNG 45 T0225	RNGN 120700 T00525	1/2				○		○										
RNG 45 T0320	RNGN 120700 T00820	1/2		●	●													
RNG 45 T0420	RNGN 120700 T01020	1/2				●	●	●								●		
RNG 45 T0525	RNGN 120700 T01225	1/2																●*
RNG 45 Z0620	RNGN 120700 Z01520	1/2						●										
RNG 45 S0825	RNGN 120700 S02025	1/2															●	
RNG 45 T0825	RNGN 120700 T02025	1/2															○	
RNG 45 Z0825	RNGN 120700 Z02025	1/2												●				
RNG 45 P2810	RNGN 120700 P07010	1/2												●		●		●
RNG 55 T0220	RNGN 150700 T00520	5/8				●	●	●										
RNG 55 T0225	RNGN 150700 T00525	5/8				○		○										
RNG 55 T0320	RNGN 150700 T00820	5/8			●													
RNG 64 T0825	RNGN 190600 T02025	3/4												●				
RNG 64 P6010	RNGN 190600 P15010	3/4												●				
RNG 65 T0220	RNGN 190700 T00520	3/4				●	●	●										
RNG 65 T0225	RNGN 190700 T00525	3/4				○												
RNG 65 T0320	RNGN 190700 T00820	3/4			●													
RNG 65 T0420	RNGN 190700 T01020	3/4				●		●										
RNG 85 T0220	RNGN 250700 T00520	1				○	●	○										
RNG 85 S6015	RNGN 250700 S15015	1					●											
RNG 86 T0220	RNGN 250900 T00520	1					●											

＊To be released in October 2015.

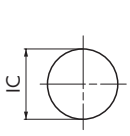
Holders ➡ F16
Boring bars ➡ G4
Cutters ➡ I 7

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

RPG

(inch)	IC	T
RPG 21.5	1/4	3/32
RPG 32	3/8	1/8
RPG 42	1/2	1/8

(inch)	IC	T
RPG 43	1/2	3/16
RPG 65	3/4	5/16

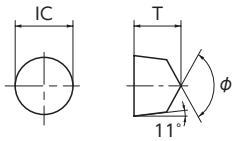
Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	
Cast Iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	● ● ● ● ●
Hardened Material	H	● ● ● ● ● ●

Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
RPG 21.5 E02	RPGN 060200 E004	1/4			●			●										
RPG 21.5 T0220	RPGN 060200 T00520	1/4				●	●	●										
RPG 21.5 T0320	RPGN 060200 T00820	1/4			●													
RPG 21.5 T0420	RPGN 060200 T01020	1/4						●										
RPG 32 E02	RPGN 090300 E004	3/8			●													
RPG 32 T0220	RPGN 090300 T00520	3/8				●		●										
RPG 32 T0320	RPGN 090300 T00820	3/8			●													
RPG 32 T0420	RPGN 090300 T01020	3/8						●										
RPG 32 T0425	RPGN 090300 T01025	3/8												●				
RPG 42 T0525	RPGN 120300 T01225	1/2																●
RPG 43 E01	RPGN 120400 E002	1/2				●												
RPG 43 E02	RPGN 120400 E004	1/2			●													
RPG 43 T0220	RPGN 120400 T00520	1/2				●	●	●										
RPG 43 T0225	RPGN 120400 T00525	1/2				○												
RPG 43 T0320	RPGN 120400 T00820	1/2			●													
RPG 43 T0420	RPGN 120400 T01020	1/2				●	●	●								●		
RPG 43 Z0620	RPGN 120400 Z01520	1/2						●										
RPG 43 Z0825	RPGN 120400 Z02025	1/2														●		
RPG 65 T0220	RPGN 190700 T00520	3/4					●											

Cutters ➡ I 6
Boring bars ➡ G4

RPGX

(inch)	IC	T	θ
RPGX 23	1/4	3/16	120
RPGX 35	3/8	5/16	120
RPGX 45	1/2	5/16	120

Steel	P	
Stainless Steel	M	
Cast Iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	● ● ● ● ●
Hardened Material	H	● ● ● ● ● ●

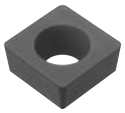
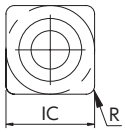
Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
RPGX 23 T0220	RPGX 060400 T00520	1/4					●	●										
RPGX 35 E02	RPGX 090700 E004	3/8		●*				●										
RPGX 35 T0220	RPGX 090700 T00520	3/8				●	●	●										
RPGX 35 T0320	RPGX 090700 T00820	3/8		●	●													
RPGX 35 T0420	RPGX 090700 T01020	3/8						●										
RPGX 45 E02	RPGX 120700 E004	1/2		●*				●										
RPGX 45 T0220	RPGX 120700 T00520	1/2				●	●	●										
RPGX 45 T0320	RPGX 120700 T00820	1/2		●	●													
RPGX 45 T0420	RPGX 120700 T01020	1/2				●		●										

＊To be released in November 2015.

Holders ➡ F17 • F18 • F19

SCGW

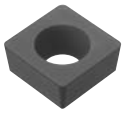
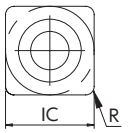
(inch)	IC	T
SCGW 32	3/8	5/32
SCGW 43	1/2	3/16

		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
Item Number	ISO Item Number	IC	R	JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
Steel P					●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel M																		
Cast Iron K					●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material N																		
Heat Resistant Alloy S				●	●	●	●	●										
Hardened Material H								●						●	●	●	●	●
SCGW 32.52 T0420	SCGW 09T308 T01020	3/8	.031						●									
SCGW 431 T0420	SCGW 120404 T01020	1/2	.016						●									
SCGW 432 T0420	SCGW 120408 T01020	1/2	.031						●									

SDCW

(inch)	IC	T
SDCW 43	1/2	3/16

		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
Item Number	ISO Item Number	IC	R	JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
Steel P					●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel M																		
Cast Iron K					●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material N																		
Heat Resistant Alloy S				●	●	●	●	●										
Hardened Material H								●						●	●	●	●	●
SDCW 432 T0420	SDCW 120408 T01020	1/2	.031						●	○								
SDCW 433 T0420	SDCW 120412 T01020	1/2	.047						●									
SDCW 434 T0420	SDCW 120416 T01020	1/2	.063						●									

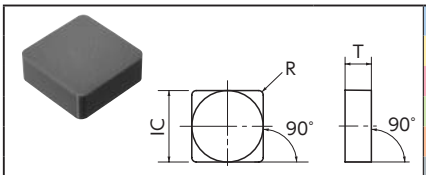
Cutters ➡ I 17 • I 18 • I 19

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

SNG3 / SNG4 / SNG55

(inch)	IC	T
SNG 32	3/8	1/8
SNG 33	3/8	3/16
SNG 43	1/2	3/16

(inch)	IC	T
SNG 45	1/2	5/16
SNG 55	5/8	5/16



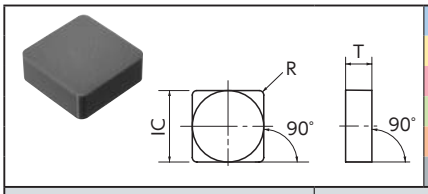
		JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M															
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N															
Heat Resistant Alloy	S	●	●	●	●	●										
Hardened Material	H					●						●	●	●	●	●

Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
SNG 322 T0425	SNGN 090308 T01025	3/8	.031										●	○				
SNG 322 T0525	SNGN 090308 T01225	3/8	.031											●				
SNG 324 T0425	SNGN 090316 T01025	3/8	.063								○			○				
SNG 324 T0525	SNGN 090316 T01225	3/8	.063											●				
SNG 332 T0425	SNGN 090408 T01025	3/8	.031											○				
SNG 431 T0425	SNGN 120404 T01025	1/2	.016											○				
SNG 432 T0220	SNGN 120408 T00520	1/2	.031			●	●	●										
SNG 432 T0420	SNGN 120408 T01020	1/2	.031					●	●	●								
SNG 432 T0425	SNGN 120408 T01025	1/2	.031					○			●		●	○			○	
SNG 432 T0525	SNGN 120408 T01225	1/2	.031											●				●
SNG 432 T0820	SNGN 120408 T02020	1/2	.031						○									
SNG 432 S0825	SNGN 120408 S02025	1/2	.031														○	
SNG 432 T0825	SNGN 120408 T02025	1/2	.031			○												
SNG 433 T0220	SNGN 120412 T00520	1/2	.047			●	●	●										
SNG 433 T0420	SNGN 120412 T01020	1/2	.047					●	●	●								
SNG 433 T0425	SNGN 120412 T01025	1/2	.047					○			●		●	○			○	
SNG 433 T0525	SNGN 120412 T01225	1/2	.047											●				●
SNG 433 T0820	SNGN 120412 T02020	1/2	.047						●	○								
SNG 433 S0825	SNGN 120412 S02025	1/2	.047														○	
SNG 433 T0825	SNGN 120412 T02025	1/2	.047			○												
SNG 433 Z0825	SNGN 120412 Z02025	1/2	.047															●
SNG 434 T0220	SNGN 120416 T00520	1/2	.063			●	●	●										
SNG 434 T0420	SNGN 120416 T01020	1/2	.063					●	●	●								
SNG 434 T0425	SNGN 120416 T01025	1/2	.063					○			○		●	●			○	
SNG 434 T0525	SNGN 120416 T01225	1/2	.063											●				●
SNG 434 T0820	SNGN 120416 T02020	1/2	.063						●									
SNG 434 S0825	SNGN 120416 S02025	1/2	.063														○	
SNG 434 T0825	SNGN 120416 T02025	1/2	.063			○												
SNG 435 T0420	SNGN 120420 T01020	1/2	.079							●								
SNG 435 T0425	SNGN 120420 T01025	1/2	.079										○	○				
SNG 435 T0820	SNGN 120420 T02020	1/2	.079						●									
SNG 435 T0825	SNGN 120420 T02025	1/2	.079					○			○							
SNG 436 T0425	SNGN 120424 T01025	1/2	.094											○				
SNG 436 T0625	SNGN 120424 T01525	1/2	.094											●				
SNG 436 T0820	SNGN 120424 T02020	1/2	.094						○									
SNG 438 T0525	SNGN 120432 T01225	1/2	.125											●				
SNG 438 S0825	SNGN 120432 S02025	1/2	.125											●				
SNG 452 T0220	SNGN 120708 T00520	1/2	.031					●										
SNG 452 T0825	SNGN 120708 T02025	1/2	.031								○			○				
SNG 453 T0220	SNGN 120712 T00520	1/2	.047				●	●										
SNG 453 S0825	SNGN 120712 S02025	1/2	.047											○				
SNG 453 T0825	SNGN 120712 T02025	1/2	.047											●				
SNG 454 T0220	SNGN 120716 T00520	1/2	.063				●	●										
SNG 454 Z0620	SNGN 120716 Z01520	1/2	.063					●										
SNG 454 T0825	SNGN 120716 T02025	1/2	.063									○		●				
SNG 554 T0820	SNGN 150716 T02020	5/8	.063					●										

SNG6 ➡ E14
Holders ➡ F10 • F11
Boring bars ➡ G6
Cutters ➡ I 10 • I 12 • I 14

SNG6

(inch)	IC	T
SNG 63	3/4	3/16
SNG 64	3/4	1/4
SNG 65	3/4	5/16

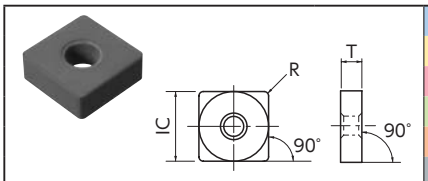


		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
Item Number	ISO Item Number	IC	R	JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
Steel	P			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M																	
Cast Iron	K				●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N																	
Heat Resistant Alloy	S	●		●	●	●	●	●										
Hardened Material	H							●						●	●	●	●	●
SNG 632 T0820	SNGN 190408 T02020	3/4	.031											●				
SNG 634 T0820	SNGN 190416 T02020	3/4	.063											●				
SNG 643 T0820	SNGN 190612 T02020	3/4	.047											●				
SNG 644 T0120	SNGN 190616 T00320	3/4	.063				●											
SNG 644 T0220	SNGN 190616 T00520	3/4	.063			●	●	●										
SNG 644 T0225	SNGN 190616 T00525	3/4	.063			○												
SNG 644 T0320	SNGN 190616 T00820	3/4	.063		●													
SNG 644 T0420	SNGN 190616 T01020	3/4	.063			●	●											
SNG 644 Z0620	SNGN 190616 Z01520	3/4	.063					●										
SNG 644 T0825	SNGN 190616 T02025	3/4	.063											●				
SNG 653 T0825	SNGN 190712 T02025	3/4	.047											●				
SNG 654 T0825	SNGN 190716 T02025	3/4	.063											●				
SNG 656 T0120	SNGN 190724 T00320	3/4	.094				●											
SNG 656 T0225	SNGN 190724 T00525	3/4	.094			○												
SNG 656 T0320	SNGN 190724 T00820	3/4	.094		●													

SNG3 / 4 / 5 ➡ E13

SNGA

(inch)	IC	T
SNGA 43	1/2	3/16
SNGA 54	5/8	1/4
SNGA 64	3/4	1/4



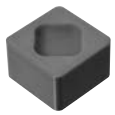
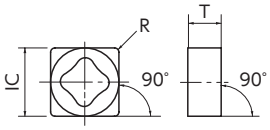
		BIDEMICS	Ceramics													
			SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
Item Number	ISO Item Number	IC	R	JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
Steel	P			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M																	
Cast Iron	K				●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N																	
Heat Resistant Alloy	S	●		●	●	●	●	●										
Hardened Material	H							●						●	●	●	●	●
SNGA 432 T0220	SNGA 120408 T00520	1/2	.031					●										
SNGA 432 T0425	SNGA 120408 T01025	1/2	.031														○	
SNGA 432 T0525	SNGA 120408 T01225	1/2	.031										●	●				
SNGA 432 T0820	SNGA 120408 T02020	1/2	.031						●									
SNGA 432 S0825	SNGA 120408 S02025	1/2	.031														●	
SNGA 432 T0825	SNGA 120408 T02025	1/2	.031															
SNGA 432 Z0825	SNGA 120408 Z02025	1/2	.031															●
SNGA 433 T0220	SNGA 120412 T00520	1/2	.047			●		●										
SNGA 433 T0420	SNGA 120412 T01020	1/2	.047			●	●	●										
SNGA 433 T0425	SNGA 120412 T01025	1/2	.047														○	
SNGA 433 T0525	SNGA 120412 T01225	1/2	.047										●	●				●
SNGA 433 T0820	SNGA 120412 T02020	1/2	.047						●									
SNGA 433 S0825	SNGA 120412 S02025	1/2	.047														●	
SNGA 433 Z0825	SNGA 120412 Z02025	1/2	.047															●
SNGA 434 T0525	SNGA 120416 T01225	1/2	.063										●					
SNGA 434 T0820	SNGA 120416 T02020	1/2	.063						●									
SNGA 543 T0220	SNGA 150612 T00520	5/8	.047				●	●										
SNGA 543 T0225	SNGA 150612 T00525	5/8	.047			●												
SNGA 544 T0220	SNGA 150616 T00520	5/8	.063				●											
SNGA 544 T0820	SNGA 150616 T02020	5/8	.063				●											
SNGA 644 T0825	SNGA 190616 T02025	3/4	.063											●				

Holders ➡ F11

Boring bars ➡ G6

SNGX

(inch)	IC	T
SNGX 45	1/2	5/16
SNGX 55	5/8	5/16

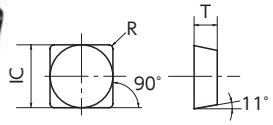
Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	
Cast Iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	● ● ● ● ●
Hardened Material	H	● ● ● ● ● ●

Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
SNGX 452 T0220	SNGX 120708 T00520	1/2	.031			●												
SNGX 452 T0320	SNGX 120708 T00820	1/2	.031		●													
SNGX 453 T0220	SNGX 120712 T00520	1/2	.047			●												
SNGX 453 T0320	SNGX 120712 T00820	1/2	.047		●													
SNGX 453 T0820	SNGX 120712 T02020	1/2	.047						●									
SNGX 453 T0825	SNGX 120712 T02025	1/2	.047							●								
SNGX 454 T0820	SNGX 120716 T02020	1/2	.063						●	●								
SNGX 454 T0825	SNGX 120716 T02025	1/2	.063							●								
SNGX 552 T0320	SNGX 150708 T00820	5/8	.031		●													
SNGX 553 T0220	SNGX 150712 T00520	5/8	.047			●	●											
SNGX 553 T0320	SNGX 150712 T00820	5/8	.047		●													
SNGX 554 T0320	SNGX 150716 T00820	5/8	.063		●													

Holders ➡ F10・F11
Boring bars ➡ G6

SPG

(inch)	IC	T
SPG 32	3/8	1/8
SPG 42	1/2	1/8
SPG 43	1/2	3/16
SPG 63	3/4	3/16

Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	
Cast Iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	● ● ● ● ●
Hardened Material	H	● ● ● ● ● ●

Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
SPG 322 T0425	SPGN 090308 T01025	3/8	.031											○				
SPG 324 S0820	SPGN 090316 S02020	3/8	.063											●				
SPG 422 T0425	SPGN 120308 T01025	1/2	.031										●	●				
SPG 422 T0525	SPGN 120308 T01225	1/2	.031															●
SPG 432 T0420	SPGN 120408 T01020	1/2	.031						●									
SPG 432 T0425	SPGN 120408 T01025	1/2	.031											●				
SPG 433 T0420	SPGN 120412 T01020	1/2	.047						●									
SPG 433 T0425	SPGN 120412 T01025	1/2	.047											○				
SPG 434 T0420	SPGN 120416 T01020	1/2	.063						●									
SPG 434 T0425	SPGN 120416 T01025	1/2	.063										●					
SPG 434 T0820	SPGN 120416 T02020	1/2	.063						●									
SPG 634 T0420	SPGN 190416 T01020	3/4	.063						●									

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery ■ : While stock lasts R : Stock (Right-hand only) L : Stock (Left-hand only)

TBGE

(inch)	IC	T
TBGE 52	5/32	.063



Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	
Cast Iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	● ● ● ● ●
Hardened Material	H	● ● ● ● ● ● ● ● ● ● ● ●

Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
TBGE 521 T0225	TBGE 060104 T00525	5/32	.016											●				
TBGE 522 T0225	TBGE 060108 T00525	5/32	.031											○				

TNG2 / TNG3

(inch)	IC	T
TNG 22	1/4	1/8
TNG 32	3/8	1/8
TNG 33	3/8	3/16
TNG 35	3/8	5/16



Steel	P	
Stainless Steel	M	
Cast Iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	● ● ● ● ●
Hardened Material	H	● ● ● ● ● ● ● ● ● ● ● ●

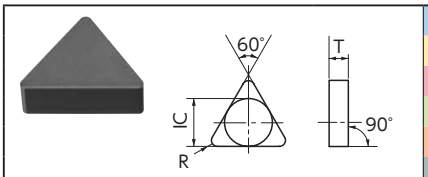
Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
TNG 221 T0225	TNGN 110304 T00525	1/4	.016											●				
TNG 222 T0225	TNGN 110308 T00525	1/4	.031										●	●				
TNG 321 T0425	TNGN 160304 T01025	3/8	.016											●				
TNG 322 T0425	TNGN 160308 T01025	3/8	.031										●	●				
TNG 322 T0525	TNGN 160308 T01225	3/8	.031															●
TNG 322 T0825	TNGN 160308 T02025	3/8	.031											●				
TNG 331 T0425	TNGN 160404 T01025	3/8	.016											●				
TNG 332 T0420	TNGN 160408 T01020	3/8	.031					●		●								
TNG 332 T0425	TNGN 160408 T01025	3/8	.031					○			○		●	○			○	
TNG 332 T0525	TNGN 160408 T01225	3/8	.031											●	●			●
TNG 332 T0820	TNGN 160408 T02020	3/8	.031						○									
TNG 332 S0825	TNGN 160408 S02025	3/8	.031														○	
TNG 332 T0825	TNGN 160408 T02025	3/8	.031			○												
TNG 333 T0420	TNGN 160412 T01020	3/8	.047					●	●	●								
TNG 333 T0425	TNGN 160412 T01025	3/8	.047					○			●		●	●			○	
TNG 333 T0525	TNGN 160412 T01225	3/8	.047															●
TNG 333 T0820	TNGN 160412 T02020	3/8	.047						●					●				
TNG 333 S0825	TNGN 160412 S02025	3/8	.047														○	
TNG 333 T0825	TNGN 160412 T02025	3/8	.047			○												
TNG 334 T0420	TNGN 160416 T01020	3/8	.063							●								
TNG 334 T0425	TNGN 160416 T01025	3/8	.063								●	○		○				
TNG 334 T0525	TNGN 160416 T01225	3/8	.063											●				
TNG 334 T0820	TNGN 160416 T02020	3/8	.063						○									
TNG 334 T0825	TNGN 160416 T02025	3/8	.063			○												
TNG 335 T0425	TNGN 160420 T01025	3/8	.079								○			○				
TNG 335 T0820	TNGN 160420 T02020	3/8	.079						○									
TNG 352 T0825	TNGN 160708 T02025	3/8	.031											○				
TNG 353 T0825	TNGN 160712 T02025	3/8	.047											○				

TNG4 / 5 ➡ E17
Holders ➡ F14

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

TNG4 / TNG5

(inch)	IC	T
TNG 43	1/2	3/16
TNG 45	1/2	5/16
TNG 54	5/8	1/4



Steel	P																
Stainless Steel	M																
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N																
Heat Resistant Alloy	S	●	●	●	●	●											
Hardened Material	H					●						●	●	●	●	●	●

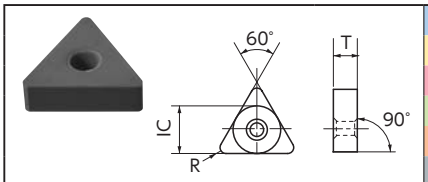
Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
TNG 431 T0425	TNGN 220404 T01025	1/2	.016											●				
TNG 432 T0220	TNGN 220408 T00520	1/2	.031			●	●	●										
TNG 432 T0420	TNGN 220408 T01020	1/2	.031			●		●										
TNG 432 T0425	TNGN 220408 T01025	1/2	.031										●					
TNG 432 T0525	TNGN 220408 T01225	1/2	.031											●				
TNG 432 T0820	TNGN 160408 T02020	1/2	.031						●									
TNG 432 Z0825	TNGN 220408 Z02025	1/2	.031															●
TNG 433 T0220	TNGN 220412 T00520	1/2	.047				●	●										
TNG 433 T0225	TNGN 220412 T00525	1/2	.047				●											
TNG 433 T0425	TNGN 220412 T01025	1/2	.047										●					
TNG 433 T0630	TNGN 220412 T01530	1/2	.047											●				
TNG 433 Z0820	TNGN 220412 Z02020	1/2	.047											●				
TNG 433 Z0825	TNGN 220412 Z02025	1/2	.047														●	●
TNG 434 T0220	TNGN 220416 T00520	1/2	.063				●	●										
TNG 434 T0625	TNGN 220416 T01525	1/2	.063											●				
TNG 452 T0220	TNGN 220708 T00520	1/2	.031				●											
TNG 452 T0825	TNGN 220708 T02025	1/2	.031											●				
TNG 453 T0220	TNGN 220712 T00520	1/2	.047				●	●										
TNG 454 T0825	TNGN 220716 T02025	1/2	.063											●				
TNG 543 T0825	TNGN 270612 T02025	5/8	.047											●				
TNG 544 T0120	TNGN 270616 T00320	5/8	.063				●											
TNG 544 T0220	TNGN 270616 T00520	5/8	.063					●										
TNG 544 T0825	TNGN 270616 T02025	5/8	.063											●				

TNG2 / 3 ➡ E16

TNGA

(inch)	IC	T
TNGA 32	3/8	1/8
TNGA 33	3/8	3/16

(inch)	IC	T
TNGA 43	1/2	3/16



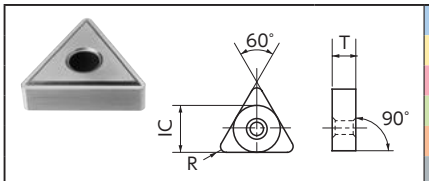
Steel	P		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M																
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N																
Heat Resistant Alloy	S	●	●	●	●	●											
Hardened Material	H					●							●	●	●	●	●

Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
TNGA 321 T0425	TNGA 160304 T01025	3/8	.016											●				
TNGA 322 T0525	TNGA 160308 T01225	3/8	.031											●				
TNGA 331 T0425	TNGA 160404 T01025	3/8	.016											●			○	
TNGA 331 S0825	TNGA 160404 S02025	3/8	.016														●	
TNGA 331 Z0825	TNGA 160404 Z02025	3/8	.016															●
TNGA 332 T0425	TNGA 160408 T01025	3/8	.031							●			○	○			○	
TNGA 332 T0525	TNGA 160408 T01225	3/8	.031										●	●	●			●
TNGA 332 T0820	TNGA 160408 T02020	3/8	.031						●									
TNGA 332 S0825	TNGA 160408 S02025	3/8	.031														●	
TNGA 332 T0825	TNGA 160408 T02025	3/8	.031			○												
TNGA 332 Z0825	TNGA 160408 Z02025	3/8	.031															●
TNGA 333 T0425	TNGA 160412 T01025	3/8	.047							●			○	●			○	
TNGA 333 T0525	TNGA 160412 T01225	3/8	.047										●					
TNGA 333 T0820	TNGA 160412 T02020	3/8	.047						●									
TNGA 333 S0825	TNGA 160412 S02025	3/8	.047														●	
TNGA 333 T0825	TNGA 160412 T02025	3/8	.047			○												
TNGA 333 Z0825	TNGA 160412 Z02025	3/8	.047															●
TNGA 334 T0825	TNGA 160416 T02025	3/8	.063			○												
TNGA 431 T0425	TNGA 220404 T01025	1/2	.016											●				
TNGA 432 T0220	TNGA 220408 T00520	1/2	.031					●										
TNGA 432 T0525	TNGA 220408 T01225	1/2	.031															●
TNGA 432 S0825	TNGA 220408 S02025	1/2	.031														●	
TNGA 432 T0825	TNGA 220408 T02025	1/2	.031											●	●			
TNGA 433 T0825	TNGA 220412 T02025	1/2	.047											●				
TNGA 433 Z0825	TNGA 220412 Z02025	1/2	.047															●
TNGA 434 T0525	TNGA 220416 T01225	1/2	.063															●
TNGA 434 T0825	TNGA 220416 T02025	1/2	.063											●				

Holders ➡ F14 • Q34

TNGG with chip-breaker

(inch)	IC	T
TNGG 33	3/8	3/16



Steel	P		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M																
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N																
Heat Resistant Alloy	S	●	●	●	●	●											
Hardened Material	H					●							●	●	●	●	●

Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
TNGG 332 Z0430 AG	TNGG 160408 Z01030 AG	3/8	.031														●	
TNGG 333 Z0430 AG	TNGG 160412 Z01030 AG	3/8	.047														●	

Holders ➡ F14 • Q34

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

TP

(inch)	IC	T
TP 41	1/4	3/32
TP 42	1/4	3/32



Steel	P																
Stainless Steel	M																
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N																
Heat Resistant Alloy	S	●	●	●	●	●											
Hardened Material	H					●								●	●	●	●

Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics												
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC				
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
TP 41 T0225		1/4	.016											●				
TP 42 T0225		1/4	.031											●				

TPG / TPGE

(inch)	IC	T
TPG 22	1/4	1/8
TPG 32	3/8	1/8
TPG 43	1/2	3/16

(inch)	IC	T
TPGE 52	5/32	1/16
TPGE 73	7/32	3/32



Steel	P																
Stainless Steel	M																
Cast Iron	K		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N																
Heat Resistant Alloy	S	●	●	●	●	●											
Hardened Material	H					●								●	●	●	●

Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics												
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC				
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
TPG 221 T0225	TPGN 110304 T00525	1/4	.016											●				
TPG 221 T0425	TPGN 110304 T01025	1/4	.016														○	
TPG 221 T0525	TPGN 110304 T01225	1/4	.016															●
TPG 222 T0225	TPGN 110308 T00525	1/4	.031										●	●				
TPG 222 T0425	TPGN 110308 T01025	1/4	.031														○	
TPG 222 T0525	TPGN 110308 T01225	1/4	.031															●
TPG 222 T0825	TPGN 110308 T02025	1/4	.031											●				
TPG 223 T0225	TPGN 110312 T00525	1/4	.047										●					
TPG 223 T0820	TPGN 110312 T02020	1/4	.047											●				
TPG 32Y T0425	TPGN 160302 T01025	3/8	.008											●				
TPG 321 T0425	TPGN 160304 T01025	3/8	.016											●			○	
TPG 321 T0525	TPGN 160304 T01225	3/8	.016															●
TPG 322 T0220	TPGN 160308 T00520	3/8	.031				●	●										
TPG 322 T0425	TPGN 160308 T01025	3/8	.031										●	○			○	
TPG 322 T0525	TPGN 160308 T01225	3/8	.031											●				●
TPG 323 T0220	TPGN 160312 T00520	3/8	.047				●	●										
TPG 323 T0425	TPGN 160312 T01025	3/8	.047											●				
TPG 323 T0525	TPGN 160312 T01225	3/8	.047															●
TPG 324 T0425	TPGN 160316 T01025	3/8	.063											●				
TPG 431 T0425	TPGN 220404 T01025	1/2	.016											●				
TPG 432 T0220	TPGN 220408 T00520	1/2	.031				●											
TPG 432 T0425	TPGN 220408 T01025	1/2	.031										●	●				
TPG 432 T0525	TPGN 220408 T01225	1/2	.031															●
TPG 433 T0220	TPGN 220412 T00520	1/2	.047				●											
TPG 434 T0220	TPGN 220416 T00520	1/2	.063				●											
TPG 434 T0425	TPGN 220416 T01025	1/2	.063											●				
TPGE 521 T0225	TPGN 060104 T00525	5/32	.016											●				
TPGE 731 T0225	TPGN 090204 T00525	7/32	.016											●				
TPGE 732 T0225	TPGN 090208 T00525	7/32	.031											●				

VNG

(inch)	IC	T
VNG 33	3/8	3/16

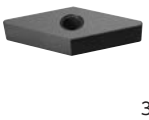


Steel	P	
Stainless Steel	M	
Cast Iron	K	● ● ● ● ● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	● ● ● ● ●
Hardened Material	H	● ● ● ● ● ●

Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics												
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC				
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
VNG 331 T0425	VNGN 160404 T01025	3/8	.016											●				
VNG 332 T0425	VNGN 160408 T01025	3/8	.031											●				

VNGA

(inch)	IC	T
VNGA 33	3/8	3/16
VNGA 43	1/2	3/16



Steel	P	
Stainless Steel	M	
Cast Iron	K	● ● ● ● ● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	● ● ● ● ●
Hardened Material	H	● ● ● ● ● ●

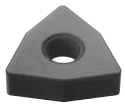
Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics												
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC				
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
VNGA 331 T0220	VNGA 160404 T00520	3/8	.016				●											
VNGA 331 T0225	VNGA 160404 T00525	3/8	.016				●											
VNGA 331 T0420	VNGA 160404 T01020	3/8	.016						○									
VNGA 331 T0425	VNGA 160404 T01025	3/8	.016										○	●			○	
VNGA 331 T0525	VNGA 160404 T01225	3/8	.016										●					●
VNGA 331 S0825	VNGA 160404 S02025	3/8	.016														●	
VNGA 331 Z0825	VNGA 160404 Z02025	3/8	.016															●
VNGA 332 T0220	VNGA 160408 T00520	3/8	.031				●	●										
VNGA 332 T0320	VNGA 160408 T00820	3/8	.031		●													
VNGA 332 T0420	VNGA 160408 T01020	3/8	.031						●	●								
VNGA 332 T0425	VNGA 160408 T01025	3/8	.031										○	●			○	
VNGA 332 T0525	VNGA 160408 T01225	3/8	.031										●					●
VNGA 332 S0825	VNGA 160408 S02025	3/8	.031														●	
VNGA 332 Z0825	VNGA 160408 Z02025	3/8	.031															●
VNGA 333 T0220	VNGA 160412 T00520	3/8	.047					●										
VNGA 333 T0320	VNGA 160412 T00820	3/8	.047		●													
VNGA 333 T0420	VNGA 160412 T01020	3/8	.047						●	●								
VNGA 333 T0425	VNGA 160412 T01025	3/8	.047											●	●		○	●
VNGA 333 S0825	VNGA 160412 S02025	3/8	.047														●	
VNGA 333 Z0825	VNGA 160412 Z02025	3/8	.047															●
VNGA 431 T0425	VNGA 220404 T01025	1/2	.016											●				
VNGA 432 T0425	VNGA 220408 T01025	1/2	.031											●				
VNGA 433 T0425	VNGA 220412 T01025	1/2	.047												●			
VNGA 436 T0420	VNGA 220424 T01020	1/2	.094					●										

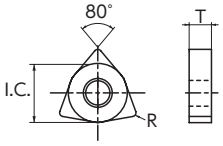
Holders ➡ F12・F13

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

WNGA

(inch)	IC	T
WNGA 33	3/8	3/16
WNGA 43	1/2	3/16





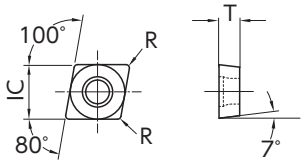
Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	
Cast Iron	K	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	● ● ● ● ●
Hardened Material	H	● ● ● ● ● ●

Item Number	ISO Item Number	IC	R	BIDEMICS	Ceramics													
					SiAlON			Whisker	Silicon Nitride		Alumina		Alumina - TiC					
				JX1	SX7	SX9	SX5	WA1	SX6	SP9	HC1	HW2	HC6	HC2	HC5	HC7	ZC7	ZC4
WNGA 331 T0525	WNGA 060404 T01225	3/8	.016															●
WNGA 332 T0525	WNGA 060408 T01225	3/8	.031															●
WNGA 333 T0525	WNGA 060412 T01225	3/8	.047															●
WNGA 431 T0220	WNGA 080404 T00520	1/2	.016					●										
WNGA 431 Z0825	WNGA 080404 Z02025	1/2	.016															●
WNGA 432 T0220	WNGA 080408 T00520	1/2	.031			●	●	●										
WNGA 432 T0420	WNGA 080408 T01020	1/2	.031							●								
WNGA 432 T0525	WNGA 080408 T01225	1/2	.031										●					●
WNGA 432 T0820	WNGA 080408 T02020	1/2	.031						●					●				
WNGA 432 Z0825	WNGA 080408 Z02025	1/2	.031															●
WNGA 433 T0220	WNGA 080412 T00520	1/2	.047			●	●	●										
WNGA 433 T0420	WNGA 080412 T01020	1/2	.047							●								
WNGA 433 T0525	WNGA 080412 T01225	1/2	.047										●					
WNGA 433 T0820	WNGA 080412 T02020	1/2	.047						●					●				
WNGA 434 T0420	WNGA 080416 T01020	1/2	.063			●												
WNGA 434 T0820	WNGA 080416 T02020	1/2	.063						●									

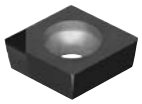
Holders ➡ F15
Boring bars ➡ G6

CC. W

(inch)	IC	T
CC.. 21	1/4	3/32
CC.. 32	3/8	5/32



		JP2	B99	B5K	B52	B6K	B36	B40	B23	B30	PD1	PD2
Steel	P											
Stainless Steel	M											
Cast Iron	K		●	●	●				●	●		
Non-Ferrous Material	N										●	●
Heat Resistant Alloy	S	●										
Hardened Material	H		●	●	●	●	●	●				

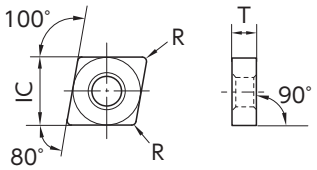
Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	JP2	B99	B5K	B52	B6K	B36	B40	B23	B30	PD1	PD2
	**CCGW 21.51 PD**	CCGW 060204 PD	S0415	1/4	.016	2	.091				●							
	CCGW 32.508 PD	CCGW 09T302 PD	S0415	3/8	.008	2	.091				●							
	CCGW 32.508 PD	CCGW 09T302 PD	S0635	3/8	.008	2	.091							●				
	CCGW 32.51 PD	CCGW 09T304 PD	S0415	3/8	.016	2	.091				●							
	CCGW 32.51 PD	CCGW 09T304 PD	S0635	3/8	.016	2	.091							●				
	CCGW 32.52 PD	CCGW 09T308 PD	S0415	3/8	.031	2	.087				●							
	CCGW 32.52 PD	CCGW 09T308 PD	S0635	3/8	.031	2	.087							●				
	**CCMW 32.504**	CCMW 09T301	None	3/8	.004	1	—										○	
	CCMW 32.508	CCMW 09T302	None	3/8	.008	1	—										○	
	CCMW 32.51	CCMW 09T304	None	3/8	.016	1	—										○	
	CCMW 32.52	CCMW 09T308	None	3/8	.031	1	—										○	
NEW  with chipbreaker	**CCMT 32.508 PF**	CCMT 09T302 PF	None	3/8	.008	1	—											●
	CCMT 32.51 PF	CCMT 09T304 PF	None	3/8	.016	1	—											●

Holders ➡ Q10
Boring bars ➡ V26

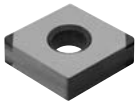
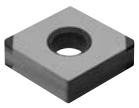
● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

CN. A 43

(inch)	IC	T
CN.. 43	1/2	3/16



Steel	P																					
Stainless Steel	M																					
Cast Iron	K		●	●	●				●	●												
Non-Ferrous Material	N																			●	●	
Heat Resistant Alloy	S	●																				
Hardened Material	H		●	●	●	●	●	●														

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	BIDEMICS Coated JP2	Solid CBN B99	CBN (Brazed) Coated B5K	CBN (Brazed) B52	CBN (Brazed) Coated B6K	CBN (Brazed) B36	CBN (Brazed) B40	CBN (Brazed) B23	CBN (Brazed) B30	PCD PD1	PCD PD2
NEW 	**CNGA 431 BQ**	CNGA 120404 BQ	T0220	1/2	.016	4	.157	●										
	CNGA 431 BQ E02	CNGA 120404 BQ ENB	Honed	1/2	.016	4	.157	●*										
	CNGA 432 BQ	CNGA 120408 BQ	T0220	1/2	.031	4	.157	●										
	CNGA 432 BQ E02	CNGA 120408 BQ ENB	Honed	1/2	.031	4	.157	●*										
	CNGA 433 BQ	CNGA 120412 BQ	T0220	1/2	.047	4	.157	●										
	CNGA 433 BQ E02	CNGA 120408 BQ ENB	Honed	1/2	.047	4	.157	●*										
	**CNGA 4308 PQ**	CNGA 120402 PQ	S0415	1/2	.008	4	.091			●	●							
	CNGA 4308 PQ	CNGA 120402 PQ	S0635	1/2	.008	4	.091							●				
	CNGA 431 PQ	CNGA 120404 PQ	S0415	1/2	.016	4	.091			●	●							
	CNGA 431 PQ	CNGA 120404 PQ	S0420	1/2	.016	4	.091								○			
	CNGA 431 PQ	CNGA 120404 PQ	T0420	1/2	.016	4	.091									○		
	CNGA 431 PQ	CNGA 120404 PQ	S0525	1/2	.016	4	.091					●	○					
	CNGA 431 PQ	CNGA 120404 PQ	S0635	1/2	.016	4	.091							●				
	CNGA 432 PQ	CNGA 120408 PQ	S0415	1/2	.031	4	.087			●	●							
	CNGA 432 PQ	CNGA 120408 PQ	S0420	1/2	.031	4	.087								○			
	CNGA 432 PQ	CNGA 120408 PQ	T0420	1/2	.031	4	.087									○		
	CNGA 432 PQ	CNGA 120408 PQ	S0525	1/2	.031	4	.087					●	○					
	CNGA 432 PQ	CNGA 120408 PQ	S0635	1/2	.031	4	.087							●				
	CNGA 433 PQ	CNGA 120412 PQ	S0415	1/2	.047	4	.106			●	●							
	CNGA 433 PQ	CNGA 120412 PQ	S0420	1/2	.047	4	.106								○			
	CNGA 433 PQ	CNGA 120412 PQ	T0420	1/2	.047	4	.106									○		
	CNMA 433 PQ	CNMA 120412 PQ	S0525	1/2	.047	4	.094						○					
	CNGA 433 PQ	CNGA 120412 PQ	S0635	1/2	.047	4	.106							●				
 with wiper	**CNGA 431 PQW**	CNGA 120404 PQW	S0415	1/2	.016	4	.091				●							
	CNGA 431 PQW	CNGA 120404 PQW	S0635	1/2	.016	4	.091							●				
	CNGA 432 PQW	CNGA 120408 PQW	S0415	1/2	.031	4	.087				●							
	CNGA 432 PQW	CNGA 120408 PQW	S0635	1/2	.031	4	.087							●				
	CNGA 433 PQW	CNGA 120412 PQW	S0415	1/2	.047	4	.106				●							
	CNGA 433 PQW	CNGA 120412 PQW	S0635	1/2	.047	4	.106							●				
NEW  with chipbreaker	**CNMX 431 PF**	CNMX 120404 PF	None	1/2	.016	1	—											●
	CNMX 432 PF	CNMX 120408 PF	None	1/2	.031	1	—											●

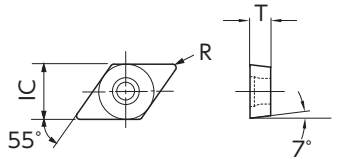
*To be released in January 2016

Holders ➡ F6 • F7 • Q37
Boring bars ➡ G5

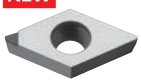
BIDEMICS (Brazed) / CBN / PCD

DC. W

(inch)	IC	T
DC.. 21	1/4	3/32
DC.. 32	3/8	5/32



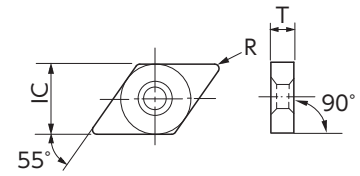
Steel	P	●
Stainless Steel	M	
Cast Iron	K	●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	●
Hardened Material	H	●

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	BIDEMICS Coated	Solid CBN	CBN (Brazed) Coated	CBN (Brazed) Coated	CBN (Brazed) Coated	CBN (Brazed)	CBN (Brazed)	CBN (Brazed)	PCD	PCD
								JP2	B99	B5K	B52	B6K	B36	B40	B23	B30	PD1	PD2
	DCGW 21.508 PD	DCGW 070202 PD	S0415	1/4	.008	2	.094				●							
	DCGW 21.51 PD	DCGW 070204 PD	S0415	1/4	.016	2	.087				●							
	DCGW 21.51 PD	DCGW 070204 PD	S0635	1/4	.016	2	.087							●				
	DCGW 21.52 PD	DCGW 070208 PD	S0415	1/4	.031	2	.075				●							
	DCGW 32.508 PD	DCGW 11T302 PD	S0415	3/8	.008	2	.094			●	●							
	DCGW 32.508 PD	DCGW 11T302 PD	S0635	3/8	.008	2	.094							●				
	DCGW 32.51 PD	DCGW 11T304 PD	S0415	3/8	.016	2	.087			●	●							
	DCGW 32.51 PD	DCGW 11T304 PD	S0635	3/8	.016	2	.087							●				
	DCGW 32.52 PD	DCGW 11T308 PD	S0415	3/8	.031	2	.075				●							
	DCGW 32.52 PD	DCGW 11T308 PD	S0635	3/8	.031	2	.075							●				
	DCMW 32.504	DCMW 11T301	None	3/8	.004	1	—										○	
	DCMW 32.508	DCMW 11T302	None	3/8	.008	1	—										○	
	DCMW 32.51	DCMW 11T304	None	3/8	.016	1	—										○	
	DCMW 32.52	DCMW 11T308	None	3/8	.031	1	—										○	
NEW  with chipbreaker	DCMT 32.508 PF	DCMT 11T302 PF	None	3/8	.008	1	—											●
	DCMT 32.51 PF	DCMT 11T304 PF	None	3/8	.016	1	—											●

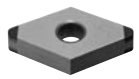
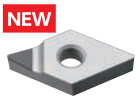
Holders ➡ Q16 • Q17 • Q18 • Q19

DN. A 43

(inch)	IC	T
DN.. 43	1/2	3/16



Steel	P	●
Stainless Steel	M	
Cast Iron	K	●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	●
Hardened Material	H	●

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	BIDEMICS Coated	Solid CBN	CBN (Brazed) Coated	CBN (Brazed)	CBN (Brazed) Coated	CBN (Brazed)	CBN (Brazed)	CBN (Brazed)	PCD	PCD
								JP2	B99	B5K	B52	B6K	B36	B40	B23	B30	PD1	PD2
NEW 	DNGA 431 BQ	DNGA 150404 BQ	T0220	1/2	.016	4	.157	●										
	DNGA 431 BQ E02	DNGA 150404 BQ ENB	Honed	1/2	.016	4	.157	●*										
	DNGA 432 BQ	DNGA 150408 BQ	T0220	1/2	.031	4	.157	●										
	DNGA 432 BQ E02	DNGA 150408 BQ ENB	Honed	1/2	.031	4	.157	●*										
	DNGA 433 BQ	DNGA 150412 BQ	T0220	1/2	.047	4	.157	●										
	DNGA 433 BQ E02	DNGA 150412 BQ ENB	Honed	1/2	.047	4	.157	●*										
	DNGA 4308 PQ	DNGA 150402 PQ	S0415	1/2	.008	4	.094				●							
	DNGA 4308 PQ	DNGA 150402 PQ	S0635	1/2	.008	4	.094							●				
	DNGA 431 PQ	DNGA 150404 PQ	S0415	1/2	.016	4	.087			●	●							
	DNGA 431 PQ	DNGA 150404 PQ	S0525	1/2	.016	4	.087					●	○					
	DNGA 431 PQ	DNGA 150404 PQ	S0635	1/2	.016	4	.087							●				
	DNGA 432 PQ	DNGA 150408 PQ	S0415	1/2	.031	4	.075			●	●							
	DNGA 432 PQ	DNGA 150408 PQ	S0420	1/2	.031	4	.075								○			
	DNGA 432 PQ	DNGA 150408 PQ	T0420	1/2	.031	4	.075									○		
	DNGA 432 PQ	DNGA 150408 PQ	S0525	1/2	.031	4	.075					●	○					
	DNGA 432 PQ	DNGA 150408 PQ	S0635	1/2	.031	4	.075							●				
	DNGA 433 PQ	DNGA 150412 PQ	S0415	1/2	.047	4	.102				●							
	DNGA 433 PQ	DNGA 150412 PQ	S0420	1/2	.047	4	.102								○			
	DNGA 433 PQ	DNGA 150412 PQ	T0420	1/2	.047	4	.102									○		
	DNMA 433 PQ	DNMA 150412 PQ	S0525	1/2	.047	4	.087						●					
	DNGA 433 PQ	DNGA 150412 PQ	S0635	1/2	.047	4	.102							●				
NEW  with chipbreaker	DNMX 431 PF	DNMX 150404 PF	None	1/2	.016	1	—											●
	DNMX 432 PF	DNMX 150408 PF	None	1/2	.031	1	—											●

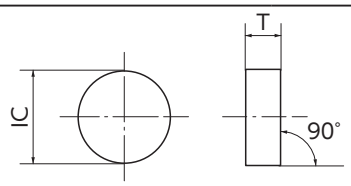
*To be released in January 2016

Holders ➡ F8 • F9 • Q38

Boring bars ➡ G5

RNG

(inch)	IC	T
SP.. 32	3/8	1/8



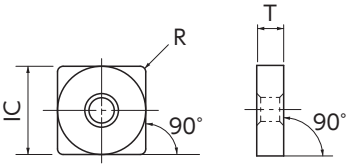
Steel	P																					
Stainless Steel	M																					
Cast Iron	K		●	●	●				●	●												
Non-Ferrous Material	N																			●	●	
Heat Resistant Alloy	S	●																				
Hardened Material	H		●	●	●	●	●	●														

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	BIDEMICS Coated JP2	Solid CBN B99	CBN (Brazed) Coated B5K	CBN (Brazed) B52	CBN (Brazed) Coated B6K	CBN (Brazed) B36	CBN (Brazed) B40	CBN (Brazed) B23	CBN (Brazed) B30	PCD PD1	PCD PD2
	**RNG 32 Z0520**	RNGN 090300 Z01220	Z0520	3/8	—	—	—		●									
	RNG 43 Z0520	RNGN 120400 Z01220	Z0520	1/2	—	—	—		●									

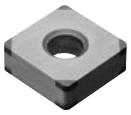
Holders ➡ F16
Boring bars ➡ G4

SN. A 43

(inch)	IC	T
SN.. 43	1/2	3/16



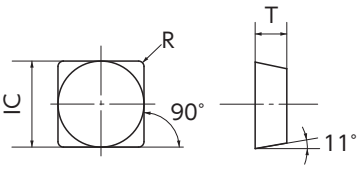
Steel	P																					
Stainless Steel	M																					
Cast Iron	K		●	●	●				●	●												
Non-Ferrous Material	N																			●	●	
Heat Resistant Alloy	S	●																				
Hardened Material	H		●	●	●	●	●	●														

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	BIDEMICS Coated JP2	Solid CBN B99	CBN (Brazed) Coated B5K	CBN (Brazed) B52	CBN (Brazed) Coated B6K	CBN (Brazed) B36	CBN (Brazed) B40	CBN (Brazed) B23	CBN (Brazed) B30	PCD PD1	PCD PD2
	**SNGA 431 PE**	SNGA 120404 PE	T0420	1/2	.016	8	.059									○		
	SNGA 431 PE	SNGA 120404 PE	S0635	1/2	.016	8	.059							○				
	SNGA 432 PE	SNGA 120408 PE	S0415	1/2	.031	8	.051				○							
	SNGA 432 PE	SNGA 120408 PE	S0525	1/2	.031	8	.051						○					
	SNGA 432 PE	SNGA 120408 PE	S0635	1/2	.031	8	.051							○				
	SNGA 433 PE	SNGA 120412 PE	S0415	1/2	.047	8	.059				○							
	SNGA 433 PE	SNGA 120412 PE	S0420	1/2	.047	8	.059								○			
	SNGA 433 PE	SNGA 120412 PE	T0420	1/2	.047	8	.059									○		
	SNMA 433 PE	SNMA 120412 PE	S0525	1/2	.047	8	.059						●					
	SNGA 433 PE	SNGA 120412 PE	S0635	1/2	.047	8	.059							○				

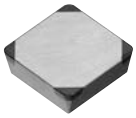
Holders ➡ F11
Boring bars ➡ G6

SPG 32

(inch)	IC	T
SP.. 32	3/8	1/8



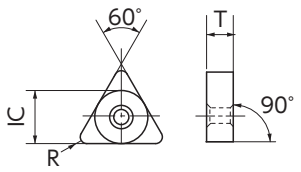
Steel	P																					
Stainless Steel	M																					
Cast Iron	K		●	●	●				●	●												
Non-Ferrous Material	N																			●	●	
Heat Resistant Alloy	S	●																				
Hardened Material	H		●	●	●	●	●	●														

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	BIDEMICS Coated JP2	Solid CBN B99	CBN (Brazed) Coated B5K	CBN (Brazed) B52	CBN (Brazed) Coated B6K	CBN (Brazed) B36	CBN (Brazed) B40	CBN (Brazed) B23	CBN (Brazed) B30	PCD PD1	PCD PD2
	**SPG 321 PQ**	SPGN 090304 PQ	S0420	3/8	.016	4	.059								○			
	SPG 322 PQ	SPGN 090308 PQ	S0420	3/8	.031	4	.051								○			
	SPG 322 PQ	SPGN 090308 PQ	T0420	3/8	.031	4	.051									○		

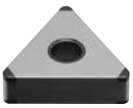
● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

TN. A 33

(inch)	IC	T
TN.. 33	3/8	3/16



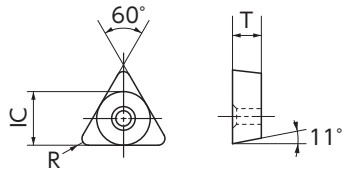
		BIDEMICS Coated	Solid CBN	CBN (Brazed) Coated	CBN (Brazed)	CBN (Brazed) Coated	CBN (Brazed)	CBN (Brazed)	CBN (Brazed)	CBN (Brazed)	PCD	PCD
		JP2	B99	B5K	B52	B6K	B36	B40	B23	B30	PD1	PD2
Steel	P											
Stainless Steel	M											
Cast Iron	K		●	●	●				●	●		
Non-Ferrous Material	N										●	●
Heat Resistant Alloy	S	●										
Hardened Material	H		●	●	●	●	●	●				

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	JP2	B99	B5K	B52	B6K	B36	B40	B23	B30	PD1	PD2
	TNGA 331C PH	TNGA 160401 PH	S0415	3/8	.004	6	.083				●							
	TNGA 3308 PH	TNGA 160402 PH	S0415	3/8	.008	6	.087			●	●							
	TNGA 3308 PH	TNGA 160402 PH	S0635	3/8	.008	6	.087							●				
	TNGA 331 PH	TNGA 160404 PH	S0415	3/8	.016	6	.079			●	●							
	TNGA 331 PH	TNGA 160404 PH	T0420	3/8	.016	6	.079									○		
	TNGA 331 PH	TNGA 160404 PH	S0525	3/8	.016	6	.079					●	○					
	TNGA 331 PH	TNGA 160404 PH	S0635	3/8	.016	6	.079							●				
	TNGA 332 PH	TNGA 160408 PH	S0415	3/8	.031	6	.067			●	●							
	TNGA 332 PH	TNGA 160408 PH	S0420	3/8	.031	6	.067								○			
	TNGA 332 PH	TNGA 160408 PH	T0420	3/8	.031	6	.067									○		
	TNGA 332 PH	TNGA 160408 PH	S0525	3/8	.031	6	.067					●	○					
	TNGA 332 PH	TNGA 160408 PH	S0635	3/8	.031	6	.067							●				
	TNGA 333 PH	TNGA 160412 PH	S0415	3/8	.047	6	.091				●							
	TNGA 333 PH	TNGA 160412 PH	S0420	3/8	.047	6	.091								○			
	TNGA 333 PH	TNGA 160412 PH	T0420	3/8	.047	6	.091									○		
	TNMA 333 PH	TNMA 160412 PH	S0525	3/8	.047	6	.091						○					
	TNGA 333 PH	TNGA 160412 PH	S0635	3/8	.047	6	.091							●				
NEW  with chipbreaker	TNMX 331 PF	TNMX 160404 PF	None	3/8	.016	1	—											●
	TNMX 332 PF	TNMX 160408 PF	None	3/8	.031	1	—											●

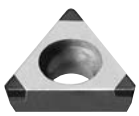
Holders ➡ F14 • Q34

TPG

(inch)	IC	T
TP.. 22	1/4	1/8
TP.. 32	3/8	1/8
TP.. 73	7/32	3/32



		BIDEMICS Coated	Solid CBN	CBN (Brazed) Coated	CBN (Brazed)	CBN (Brazed) Coated	CBN (Brazed)	CBN (Brazed)	CBN (Brazed)	CBN (Brazed)	PCD	PCD
		JP2	B99	B5K	B52	B6K	B36	B40	B23	B30	PD1	PD2
Steel	P											
Stainless Steel	M											
Cast Iron	K		●	●	●				●	●		
Non-Ferrous Material	N										●	●
Heat Resistant Alloy	S	●										
Hardened Material	H		●	●	●	●	●	●				

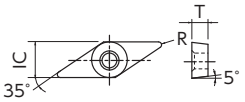
Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	JP2	B99	B5K	B52	B6K	B36	B40	B23	B30	PD1	PD2
	TPG 221 PT	TPGN 110304 PT	S0420	1/4	.016	3	.079							○				
	TPG 222 PT	TPGN 110308 PT	S0420	1/4	.031	3	.067							○				
	TPG 321 PT	TPGN 160304 PT	S0420	3/8	.016	3	.079							○				
	TPG 322 PT	TPGN 160308 PT	S0420	3/8	.031	3	.067							○				
	TPGW 2208 PT	TPGW 110302 PT	S0415	1/4	.008	3	.087				○							
	TPGW 221 PT	TPGW 110304 PT	S0415	1/4	.016	3	.079				○							
	TPGW 221 PT	TPGW 110304 PT	T0615	1/4	.016	3	.079								○			
	TPGW 221 PT	TPGW 110304 PT	S0635	1/4	.016	3	.079							○				
	TPGW 222 PT	TPGW 110308 PT	S0415	1/4	.031	3	.067				○							
	TPGW 222 PT	TPGW 110308 PT	S0635	1/4	.031	3	.067							○				
NEW 	TPMT 7308 PF	TPMT 090202 PF	None	7/32	.008	1	—											○
	TPMT 731 PF	TPMT 090204 PF	None	7/32	.016	1	—											○
	TPMT 2208 PF	TPMT 110302 PF	None	1/4	.008	1	—											○
	TPMT 221 PF	TPMT 110304 PF	None	1/4	.016	1	—											○

Holders (TPGW) ➡ V31

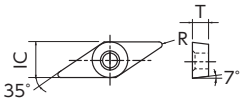
VB / VC

(inch)	IC	T
VB.. 22	1/4	1/8
VB.. 33	3/8	3/16
VC.. 22	1/4	1/8
VC.. 33	3/8	3/16

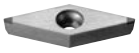
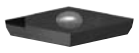
VB..



VC..



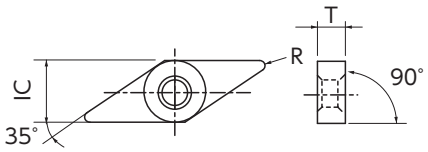
Steel	P	●
Stainless Steel	M	
Cast Iron	K	●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	●
Hardened Material	H	●

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	BIDEMICS Coated JP2	Solid CBN B99	CBN (Brazed) Coated B5K	B52	Coated B6K	B36	B40	B23	B30	PCD PD1	PD2
	VBGW 2208 PD	VBGW 110302 PD	S0415	1/4	.008	2	.102				○							
	VBGW 221 PD	VBGW 110304 PD	S0415	1/4	.016	2	.098				○							
	VBGW 332 PD	VBGW 160408 PD	S0415	3/8	.031	2	.063				○							
	VCGW 221 PD	VCGW 110304 PD	S0415	1/4	.016	2	.098				○							
	VCGW 221 PD	VCGW 110304 PD	S0635	1/4	.016	2	.098							○				
	VCGW 222 PD	VCGW 110308 PD	S0415	1/4	.031	2	.063				○							
	VCGW 222 PD	VCGW 110308 PD	S0635	1/4	.031	2	.063							○				
	VCGW 331 PD	VCGW 160404 PD	S0415	3/8	.016	2	.098				○							
	VCGW 331 PD	VCGW 160404 PD	S0635	3/8	.016	2	.098							○				
	VCGW 332 PD	VCGW 160408 PD	S0415	3/8	.031	2	.063				○							
	VCGW 332 PD	VCGW 160408 PD	S0635	3/8	.031	2	.063							○				
	VCMW 2204	VCMW 110301	None	1/4	.004	1	—										○	
	VCMW 2208	VCMW 110302	None	1/4	.008	1	—										○	
	VCMW 221	VCMW 110304	None	1/4	.016	1	—										○	

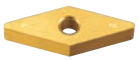
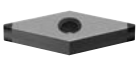
Holders(VBGW33) ➡ Q24
Holders(VCGW22) ➡ Q26 • Q27 • Q28

VNGA 33

(inch)	IC	T
VN.. 33	3/8	3/16



Steel	P	●
Stainless Steel	M	
Cast Iron	K	●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	●
Hardened Material	H	●

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	BIDEMICS Coated JP2	Solid CBN B99	CBN (Brazed) Coated B5K	B52	Coated B6K	B36	B40	B23	B30	PCD PD1	PD2
NEW 	VNGA 331 BQ	VNGA 160404 BQ	T0220	3/8	.016	4	.157	●										
	VNGA 331 BQ E02	VNGA 160404 BQ ENB	Honed	3/8	.016	4	.157	●*										
	VNGA 332 BQ	VNGA 160408 BQ	T0220	3/8	.031	4	.157	●										
	VNGA 332 BQ E02	VNGA 160408 BQ ENB	Honed	3/8	.031	4	.157	●*										
	VNGA 333 BQ	VNGA 160412 BQ	T0220	3/8	.047	4	.157	●										
	VNGA 333 BQ E02	VNGA 160412 BQ ENB	Honed	3/8	.047	4	.157	●*										
	VNGA 3308 PQ	VNGA 160402 PQ	S0635	3/8	.008	4	.102							●				
	VNGA 331 PQ	VNGA 160404 PQ	S0415	3/8	.016	4	.098			●	●							
	VNGA 331 PQ	VNGA 160404 PQ	S0525	3/8	.016	4	.098					●	○					
	VNGA 331 PQ	VNGA 160404 PQ	S0635	3/8	.016	4	.098							●				
	VNGA 331 PQ	VNGA 160404 PQ	T01020	3/8	.016	4	.098									○		
	VNGA 332 PQ	VNGA 160408 PQ	S0415	3/8	.031	4	.063			●	●							
	VNGA 332 PQ	VNGA 160408 PQ	S0525	3/8	.031	4	.063					●	○					
	VNGA 332 PQ	VNGA 160408 PQ	S0635	3/8	.031	4	.063							●				
	VNGA 333 PQ	VNGA 160412 PQ	S0635	3/8	.047	4	.106							●				

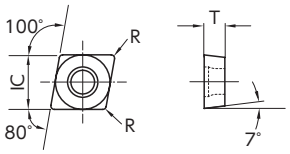
*To be released in January 2016

Holders ➡ F12 • F13

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

80 degree Diamond Positive type (CC..)

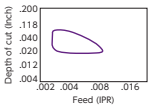
(inch)	IC	T
CC..21.5	1/4	3/32
CC..32.5	3/8	5/32

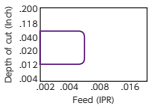


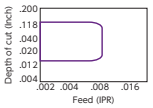
		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●	
Cast Iron	K	●	●		●	●								●
Non-Ferrous Material	N	●	●			●				●	●	●	●	
Heat Resistant Alloy	S						●	●	●	●				
Hardened Material	H						●	●	●					

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet			PVD Coated		Carbide PVD Coated						CVD	
					XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
	CCGT 21.501 FNAM3	CCGT 060200 FNAM3	1/4	.001						●	●			○			
	CCGT 21.504M FNAM3	CCGT 060201M FNAM3	1/4	.003						●							
	CCGT 21.504 FNAM3	CCGT 060201 FNXAM3	1/4	.004		●											
	CCGT 21.508M FNAM3	CCGT 060202M FNAM3	1/4	.007						●	●						
	CCGT 21.508 FNAM3	CCGT 060202 FNAM3	1/4	.008										○	○		
	CCGT 21.508 FNAM3	CCGT 060202 FNXAM3	1/4	.008		●											
	CCGT 21.51M FNAM3	CCGT 060204M FNAM3	1/4	.015						●	●						
	CCGT 21.51 FNAM3	CCGT 060204 FNAM3	1/4	.016		●									○		
	CCGT 32.501 FNAM3	CCGT 09T300 FNAM3	3/8	.001						●	●		○	○			
	CCGT 32.504M FNAM3	CCGT 09T301M FNAM3	3/8	.003						●	●		○	○	○		
	CCGT 32.504 FNAM3	CCGT 09T301 FNXAM3	3/8	.004		●											
	CCGT 32.508M FNAM3	CCGT 09T302M FNAM3	3/8	.007						●	●		○	○	○		
	CCGT 32.508 FNAM3	CCGT 09T302 FNAM3	3/8	.008						●				○			
	CCGT 32.508 FNAM3	CCGT 09T302 FNXAM3	3/8	.008		●											
	CCGT 32.51M FNAM3	CCGT 09T304M FNAM3	3/8	.015						●	●		○	○	○		
	CCGT 32.51 FNAM3	CCGT 09T304 FNAM3	3/8	.016						●				○			
	CCGT 32.51 FNAM3	CCGT 09T304 FNXAM3	3/8	.016		●											
	CCGT 32.52 FNAM3	CCGT 09T308 FNAM3	3/8	.031						●							
	CCGT 32.52 FNAM3	CCGT 09T308 FNXAM3	3/8	.031		●											
	CCMT 21.508 FNAM3	CCMT 060202 FNAM3	1/4	.008								○					
	CCMT 21.508 AM3	CCMT 060202 ENBAM3	1/4	.008		○			○								
	CCMT 21.51 FNAM3	CCMT 060204 FNAM3	1/4	.016								○					
	CCMT 21.51 AM3	CCMT 060204 ENBAM3	1/4	.016		●			○								
	CCMT 32.508 FNAM3	CCMT 09T302 FNAM3	3/8	.008								○					
	CCMT 32.508 AM3	CCMT 09T302 ENBAM3	3/8	.008		○			○								
	CCMT 32.51 FNAM3	CCMT 09T304 FNAM3	3/8	.016								○					
	CCMT 32.51 AM3	CCMT 09T304 ENBAM3	3/8	.016		●			○								
	CCMT 32.52 FNAM3	CCMT 09T308 FNAM3	3/8	.031								○					
	CCMT 32.52 AM3	CCMT 09T308 ENBAM3	3/8	.031		●			○								
	CCMT 32.53 AM3	CCMT 09T312 ENBAM3	3/8	.047		○			○								
NEW 	CCGT 32.504M YL	CCGT 09T301M YL	3/8	.003								●	○				
	CCGT 32.508M YL	CCGT 09T302M YL	3/8	.007								●	○				
	CCGT 32.51M YL	CCGT 09T304M YL	3/8	.015								●	○				
	CCGT 21.504M CL	CCGT 060201M CL	1/4	.003							●	○	●				
	CCGT 21.508M CL	CCGT 060202M CL	1/4	.007						●**	●	○	●				
	CCGT 32.501 CL	CCGT 09T300 CL	3/8	.001							○						
	CCGT 32.504M CL	CCGT 09T301M CL	3/8	.003							●	○	●				
	CCGT 32.508M CL	CCGT 09T302M CL	3/8	.007							●	○	●				
	CCGT 32.51M CL	CCGT 09T304M CL	3/8	.015						●**	●	○	●				

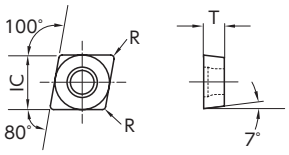






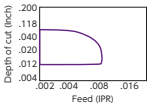
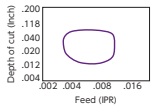
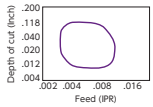
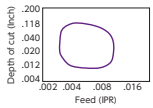
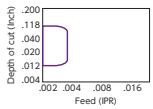
**To be released in November 2015.

● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)



Steel	P
Stainless Steel	M
Cast Iron	K
Non-Ferrous Material	N
Heat Resistant Alloy	S
Hardened Material	H

● : 1st Choice
● : Alternate choice

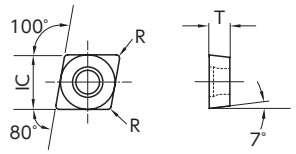
Shape	Item Number	ISO Item Number	IC	R	Cermet			PVD Coated		Carbide							CVD	
										PVD Coated								
					XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1	
	CCGT 21.501 AZ7*	CCGT 060200 AZ7	1/4	.001						○								
	CCGT 21.504M AZ7*	CCGT 060201M AZ7	1/4	.003						○								
	CCGT 21.508M AZ7*	CCGT 060202M AZ7	1/4	.007						○								
	CCGT 32.501 AZ7*	CCGT 09T300 AZ7	3/8	.001						●	○		○		○			
	CCGT 32.504M AZ7*	CCGT 09T301M AZ7	3/8	.003						●	○		○		○			
	CCGT 32.508M AZ7*	CCGT 09T302M AZ7	3/8	.007						●	○		○		○			
	CCGT 32.51M AZ7*	CCGT 09T304M AZ7	3/8	.015						●	○		○		○			
	CCGT 21.504 AF1	CCGT 060201 ENBAF1	1/4	.004	●													
	CCGT 21.508 AF1	CCGT 060202 ENBAF1	1/4	.008	●													
	CCGT 21.51 AF1	CCGT 060204 ENBAF1	1/4	.016	●													
	CCGT 21.51 FNAF1	CCGT 060204 FNAF1	1/4	.016	●													
	CCGT 21.52 AF1	CCGT 060208 ENBAF1	1/4	.031	●													
	CCGT 32.508 AF1	CCGT 09T302 ENBAF1	3/8	.008	○													
	CCGT 32.508 FNAF1	CCGT 09T302 FNAF1	3/8	.008	●													
	CCGT 32.51 FNAF1	CCGT 09T304 FNAF1	3/8	.016	●													
	CCGT 32.51 AF1	CCGT 09T304 ENBAF1	3/8	.016	○													
	CCGT 32.52 FNAF1	CCGT 09T308 FNAF1	3/8	.031	●													
	CCGT 32.52 AF1	CCGT 09T308 ENBAF1	3/8	.031	○													
	CCMT 21.51 AM5	CCMT 060204 ENBAM5	1/4	.016			○											
	CCMT 32.51 AM5	CCMT 09T304 ENBAM5	3/8	.016			○											
	CCMT 32.52 AM5	CCMT 09T308 ENBAM5	3/8	.031			○											
	CCGT 21.508 ENBFM	CCGT 060202 ENBFM	1/4	.008	○													
	CCGT 21.51 ENBFM	CCGT 060204 ENBFM	1/4	.016	○													
	CCMT 21.508 ENBZR	CCMT 060202 ENBZR	1/4	.008		○			○									
	CCMT 21.51 ENBZR	CCMT 060204 ENBZR	1/4	.016		○			○									
	CCMT 32.508 ENBZR	CCMT 09T302 ENBZR	3/8	.008		○			○									
	CCMT 32.51 ENBZR	CCMT 09T304 ENBZR	3/8	.016		○			○									
	CCMT 32.52 ENBZR	CCMT 09T308 ENBZR	3/8	.031		○			○									

＊To be replaced by version which has 0.2mm higher edge.

Holders ➡ Q10
Boring bars ➡ V26

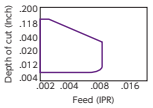
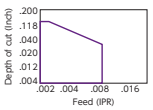
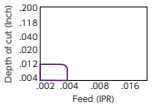
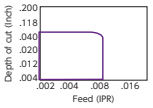
80 degree Diamond Positive type (CC.. ,continued)

(inch)	IC	T
CC..21.5	1/4	3/32
CC..32.5	3/8	5/32



Steel	P	●
Stainless Steel	M	●
Cast Iron	K	●
Non-Ferrous Material	N	●
Heat Resistant Alloy	S	●
Hardened Material	H	●

● : 1st Choice
● : Alternate choice

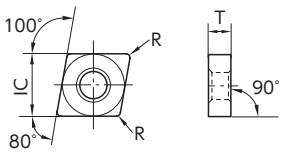
Shape	Item Number	ISO Item Number	IC	R	Cermet					Carbide								
								PVD Coated		PVD Coated							CVD	
					XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1	
	CCGT 21.501 R/L-S	CCGT 060200 R/L-S	1/4	.001						R	Ⓡ			Ⓡ Ⓛ	Ⓡ L			
	CCGT 21.504M R/L-S	CCGT 060201M R/L-S	1/4	.003						R	Ⓡ							
	CCGT 21.504 R/L-S	CCGT 060201 R/L-S	1/4	.004		Ⓡ Ⓛ								Ⓡ Ⓛ	R Ⓛ			
	CCGT 21.508M R/L-S	CCGT 060202M R/L-S	1/4	.007						R								
	CCGT 21.508 R/L-S	CCGT 060202 R/L-S	1/4	.008		Ⓡ Ⓛ								Ⓡ Ⓛ	Ⓡ Ⓛ			
	CCGT 21.51 R/L-S	CCGT 060204 R/L-S	1/4	.016						R								
	CCGT 32.501 R/L-S	CCGT 09T300 R/L-S	3/8	.001						R	R		R	Ⓡ Ⓛ	Ⓡ			
	CCGT 32.504M R/L-S	CCGT 09T301M R/L-S	3/8	.003						Ⓡ	R		R					
	CCGT 32.504 R/L-S	CCGT 09T301 R/L-S	3/8	.004						R				Ⓡ Ⓛ	Ⓡ Ⓛ			
	CCGT 32.508M R/L-S	CCGT 09T302M R/L-S	3/8	.007						Ⓡ	R		R					
	CCGT 32.508 R/L-S	CCGT 09T302 R/L-S	3/8	.008						R				Ⓡ Ⓛ	Ⓡ			
	CCGT 32.51M R/L-S	CCGT 09T304M R/L-S	3/8	.015						Ⓡ			R					
	CCGT 32.51 R/L-S	CCGT 09T304 R/L-S	3/8	.016						R								
	CCMT 21.504 TR/L-AS	CCMT 060201 TR/L-AS	1/4	.004		Ⓡ Ⓛ			Ⓡ Ⓛ									
	CCMT 21.508 TR/L-AS	CCMT 060202 TR/L-AS	1/4	.008		Ⓡ Ⓛ			Ⓡ Ⓛ									
	CCMT 21.51 TR/L-AS	CCMT 060204 TR/L-AS	1/4	.016		Ⓡ Ⓛ			Ⓡ Ⓛ									
	CCMT 32.504 TR/L-AS	CCMT 09T301 TR/L-AS	3/8	.004		Ⓡ Ⓛ			Ⓡ Ⓛ									
	CCMT 32.508 TR/L-AS	CCMT 09T302 TR/L-AS	3/8	.008		Ⓡ Ⓛ			Ⓡ Ⓛ									
	CCMT 32.51 TR/L-AS	CCMT 09T304 TR/L-AS	3/8	.016		Ⓡ Ⓛ			Ⓡ Ⓛ									
	CCGT 21.501 R/L-U	CCGT 060200 R/L-U	1/4	.001							Ⓡ				Ⓡ			
	CCGT 21.504 R/L-U	CCGT 060201 R/L-U	1/4	.004							Ⓡ				Ⓡ Ⓛ			
	CCGT 21.508 R/L-U	CCGT 060202 R/L-U	1/4	.008							Ⓡ				Ⓡ Ⓛ			
	CCGT 32.501 R/L-U1	CCGT 09T300 R/L-U1	3/8	.001									Ⓡ		Ⓡ Ⓛ			
	CCGT 32.504 R/L-U1	CCGT 09T301 R/L-U1	3/8	.004							Ⓡ		Ⓡ		Ⓡ Ⓛ			
	CCGT 32.508 R/L-U1	CCGT 09T302 R/L-U1	3/8	.008							Ⓡ		Ⓡ		Ⓡ Ⓛ			
	CCGT 32.51 R/L-U1	CCGT 09T304 R/L-U1	3/8	.016									Ⓡ		Ⓡ Ⓛ			
	CCET 21.502 R/L-KHG	CCET 0602005 R/L-KHG	1/4	.002										Ⓡ Ⓛ				
	CCET 21.503 R/L-KHG	CCET 0602008 R/L-KHG	1/4	.003										Ⓡ Ⓛ				
	CCET 21.507 R/L-KHG	CCET 0602018 R/L-KHG	1/4	.007										Ⓡ Ⓛ				
	CCET 21.508 R/L-KHG	CCET 060202 R/L-KHG	1/4	.008										Ⓡ Ⓛ				
	CCET 32.502 R/L-KHG	CCET 09T3005 R/L-KHG	3/8	.002									Ⓡ	Ⓡ Ⓛ				
	CCET 32.503 R/L-KHG	CCET 09T3008 R/L-KHG	3/8	.003									Ⓡ	Ⓡ Ⓛ				
	CCET 32.507 R/L-KHG	CCET 09T3018 R/L-KHG	3/8	.007									Ⓡ	Ⓡ Ⓛ				
	CCET 32.508 R/L-KHG	CCET 09T302 R/L-KHG	3/8	.008									Ⓡ	Ⓡ Ⓛ				
	CCGT 21.508 FR/L-F1	CCGT 060202 FR/L-F1	1/4	.008									Ⓡ					
	CCGT 21.51 FR/L-F1	CCGT 060204 FR/L-F1	1/4	.016									Ⓡ					
	CCGT 32.508 FR/L-F1	CCGT 09T302 FR/L-F1	3/8	.008									Ⓡ					
	CCGT 32.51 FR/L-F1	CCGT 09T304 FR/L-F1	3/8	.016									Ⓡ					
	CCGW 21.501 FN	CCGW 060200 FN	1/4	.001											○			—
	CCGW 21.501 H Ⓜ	CCGW 060200 H	1/4	.001											○	●		
	CCGW 21.504 FN	CCGW 060201 FN	1/4	.004											○			
	CCGW 21.504 H Ⓜ	CCGW 060201 H	1/4	.004											○	●		
	CCGW 21.508 H Ⓜ	CCGW 060202 H	1/4	.008											○	●		
	CCGW 21.51 FN	CCGW 060204 FN	1/4	.016											○			
	CCGW 21.52 FN	CCGW 060208 FN	1/4	.031											■			
	CCGW 32.500 V Ⓜ	CCGW 09T30 V	3/8	0										○				
	CCGW 32.501 FN	CCGW 09T300 FN	3/8	.001											○			
	CCGW 32.501 H Ⓜ	CCGW 09T300 H	3/8	.001												●		
	CCGW 32.504 FN	CCGW 09T301 FN	3/8	.004											○			
	CCGW 32.504 H Ⓜ	CCGW 09T301 H	3/8	.004												●		
	CCGW 32.504 P Ⓜ	CCGW 09T301 P	3/8	.004										○				
	CCGW 32.508M P Ⓜ	CCGW 09T302M P	3/8	.007							○							
	CCGW 32.508 H Ⓜ	CCGW 09T302 H	3/8	.008												●		
	CCGW 32.508 P Ⓜ	CCGW 09T302 P	3/8	.008										○				

Holders ➡ Q10
Boring bars ➡ V26

● : Stock ○ : 1-2 week delivery ■ : While stock lasts
R : Stock (Right-hand only) L : Stock (Left-hand only) Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)

80 degree Diamond Negative type (CN..)

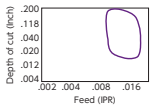
(inch)	IC	T
CN..43	1/2	3/16



		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●	
Cast Iron	K	●	●		●	●								●
Non-Ferrous Material	N	●	●			●				●	●	●	●	
Heat Resistant Alloy	S						●	●	●	●				
Hardened Material	H						●	●	●					

● : 1st Choice
● : Alternate choice

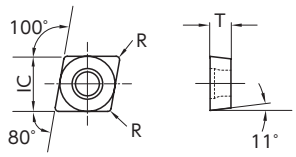
Shape	Item Number	ISO Item Number	IC	R	Cermet			PVD Coated		Carbide PVD Coated						CVD
					XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
	CNMG 432 G	CNMG 120408 G	1/2	.031													○
	CNMG 433 G	CNMG 120412 G	1/2	.047													○
	CNMG 434 G	CNMG 120416 G	1/2	.063													○
	CNMG 431 G	CNMG 120404 ENBG	1/2	.016	●		●										
	CNMG 431 TNG	CNMG 120404 TNG	1/2	.016				○									
	CNMG 432 G	CNMG 120408 ENBG	1/2	.031	●		○										
	CNMG 432 TNG	CNMG 120408 TNG	1/2	.031				○									
	CNMG 433 G	CNMG 120412 ENBG	1/2	.047	●		○										
	CNMG 433 TNG	CNMG 120412 TNG	1/2	.047				○									
	CNGG 4304 R/L N1	CNGG 120401 R/L N1	1/2	.004	●												
	CNGG 4308 R/L N1	CNGG 120402 R/L N1	1/2	.008	R												
	CNGG 431 R/L N1	CNGG 120404 R/L N1	1/2	.016	●												
	CNGG 432 R/L N1	CNGG 120408 R/L N1	1/2	.031	●												
	CNGG 431 FNUL	CNGG 120404 FNUL	1/2	.016								●	○				
	CNGG 432 FNUL	CNGG 120408 FNUL	1/2	.031								●	○				
	CNMG 431 WM	CNMG 120404 ENWM	1/2	.016		●			○								
	CNMG 432 WM	CNMG 120408 ENWM	1/2	.031		●			○								
	CNMG 432 WR	CNMG 120408 ENBWR	1/2	.031			●										
	CNMG 432 WV	CNMG 120408 ENWV	1/2	.031		●			○								
	CNMG 432 ENBZ5	CNMG 120408 ENBZ5	1/2	.031			○										
	CNMG 432 Z5	CNMG 120408 TNBZ5	1/2	.031						○		○					
	CNMG 431 ZF1	CNMG 120404 ENBZF1	1/2	.016	●		●	○									
	CNMG 432 ZF1	CNMG 120408 ENBZF1	1/2	.031	●		●	○									
	CNMG 433 ZF1	CNMG 120412 ENBZF1	1/2	.047	●		○										
	CNGG 4304 FNZF1	CNGG 120401 FNZF1	1/2	.004	●												
	CNGG 4308 FNZF1	CNGG 120402 FNZF1	1/2	.008	●												
	CNGG 431 FNZF1	CNGG 120404 FNZF1	1/2	.016	●												
	CNGG 432 FNZF1	CNGG 120408 FNZF1	1/2	.031	●												
	CNGG 431 FNZP	CNGG 120404 FNZP	1/2	.016						●		●			●		
	CNMP 432 ZP	CNMG 120408 ENBZP	1/2	.031	●												
	CNGG 432 FNZP	CNGG 120408 FNZP	1/2	.031						●		●			●		
	CNMG 432 ZW1	CNMG 120408 ENBZW1	1/2	.031	●		●										
	CNMG 433 ZW1	CNMG 120412 ENBZW1	1/2	.047	●		●										
	CNGA 431	CNGA 120404 TN	1/2	.016	●												
	CNGA 432	CNGA 120408 TN	1/2	.031	●												
	CNGA 433	CNGA 120412 TN	1/2	.047	●												



Holders ➡ F6 • F7 • Q37
Boring bars ➡ G5

80 degree Diamond Positive type (CP..)

(inch)	IC	T
CP..21.5	1/4	3/32
CP..2.51.5	5/16	3/32
CP..32.5	3/8	5/32



		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	●	
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●	●	
Cast Iron	K	●	●		●	●									●
Non-Ferrous Material	N	●	●			●				●	●	●	●		
Heat Resistant Alloy	S						●	●	●	●					
Hardened Material	H						●	●	●						

● : 1st Choice
● : Alternate choice

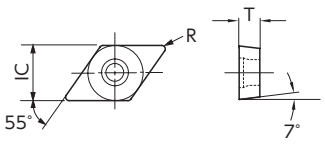
Shape	Item Number	ISO Item Number	IC	R	XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
	CPGT 21.504 FNAM3	CPGT 060201 FNXAM3	1/4	.004		●											
	CPGT 21.508 FNAM3	CPGT 060202 FNXAM3	1/4	.008		●											
	CPGT 21.51 FNAM3	CPGT 060204 FNXAM3	1/4	.016		●											
	CPGT 32.504 FNAM3	CPGT 09T301 FNXAM3	3/8	.004		●											
	CPGT 32.508 FNAM3	CPGT 09T302 FNXAM3	3/8	.008		●											
	CPGT 32.51 FNAM3	CPGT 09T304 FNXAM3	3/8	.016		●											
	CPGT 32.52 FNAM3	CPGT 09T308 FNXAM3	3/8	.031		●											
	CPGH 32.504 AF1	CPGH 09T301 ENBAF1	3/8	.004	●												
	CPGH 32.508 AF1	CPGH 09T302 ENBAF1	3/8	.008	●												
	CPGH 32.51 AF1	CPGH 09T304 ENBAF1	3/8	.016	●												
	CPGH 32.52 AF1	CPGH 09T308 ENBAF1	3/8	.031	●												
	CPGH 21.504 AM5	CPGH 060201 ENBAM5	1/4	.004	●												
	CPGH 21.508 AM5	CPGH 060202 ENBAM5	1/4	.008	●		○										
	CPGH 21.508 FNAM5	CPGH 060202 FNAM5	1/4	.008									○		○		
	CPGH 21.51 AM5	CPGH 060204 ENBAM5	1/4	.016	●												
	CPGH 21.51 FNAM5	CPGH 060204 FNAM5	1/4	.016	●												
	CPGH 21.52 AM5	CPGH 060208 ENBAM5	1/4	.031	●												
	CPGP 2.51.508 ENBAM5	CPGP 080202 ENBAM5	5/16	.008			○										
	CPGP 2.51.508 FNAM5	CPGP 080202 FNAM5	5/16	.008									○		○		
	CPGM 3208 ENBAM5	CPGM 090302 ENBAM5	3/8	.008	○												
	CPGM 3208 FNAM5	CPGM 090302 FNAM5	3/8	.008									○		○		
	CPGM 321 ENBAM5	CPGM 090304 ENBAM5	3/8	.016	○												
	CPGM 321 FNAM5	CPGM 090304 FNAM5	3/8	.016									○		○		
	CPGM 322 ENBAM5	CPGM 090308 ENBAM5	3/8	.031	○												
	CPGM 322 FNAM5	CPGM 090308 FNAM5	3/8	.031									○		○		
	CPMH 21.51 AM5	CPMH 060204 AM5	1/4	.016			●										
	CPMH 2.51.51 AM5	CPMH 080204 AM5	5/16	.016			●										
	CPMH 2.51.52 AM5	CPMH 080208 AM5	5/16	.031			●										
	CPMH 321 AM5	CPMH 090304 AM5	3/8	.016			●										
	CPMH 322 AM5	CPMH 090308 AM5	3/8	.031			●										
	CPGP 6208 FR/LA1	CPGH 040102 FR/LA1	.187	.008									Ⓛ		Ⓛ		
	CPGP 621 FR/LA1	CPGH 040104 FR/LA1	.187	.016									Ⓛ		Ⓛ		
	CPGP 21.508 FR/LA	CPGH 060202 FR/LA	1/4	.008									Ⓛ		Ⓛ		
	CPGP 21.51 FR/LA	CPGH 060204 FR/LA	1/4	.016									Ⓛ		Ⓛ		
	CPGH 2.51.508 FR/LA	CPGH 080202 FR/LA	5/16	.008									Ⓛ		Ⓛ		
	CPGH 2.51.51 FR/LA	CPGH 080204 FR/LA	5/16	.016									Ⓛ		Ⓛ		
	CPGP 6208 R/LA1	CPGH 040102 TR/LA1	.187	.008	Ⓛ	Ⓛ											
	CPGP 621 R/LA1	CPGH 040104 TR/LA1	.187	.016	Ⓛ	Ⓛ											
	CPGP 21.508 R/LA	CPGH 060202 TR/LA	1/4	.008	Ⓛ	Ⓛ											
	CPGP 21.51 R/LA	CPGH 060204 TR/LA	1/4	.016	Ⓛ	Ⓛ											
	CPGH 2.51.51 TR/LA	CPGH 080204 TR/LA	5/16	.016	Ⓛ	Ⓛ											
	CPGP 6204 FRF1	CPGH 040101 FR/LF1	.187	.004									R				
	CPGP 6208 FRF1	CPGH 040102 FR/LF1	.187	.008									R				
	CPGP 621 FRF1	CPGH 040104 FR/LF1	.187	.016									R				
	CPGP 21.504 FR/LF1	CPGH 060201 FR/LF1	1/4	.004									Ⓡ				
	CPGP 21.508 FRF1	CPGH 060202 FR/LF1	1/4	.008									R				
	CPGP 21.51 FRF1	CPGH 060204 FR/LF1	1/4	.016									R				

Boring bars ➡ V25

● : Stock ○ : 1-2 week delivery
R : Stock (Right-hand only) L : Stock (Left-hand only) Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)

55 degree Diamond Positive type (DC..)

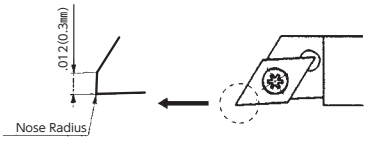
(inch)	IC	T
DC..21.5	1/4	3/32
DC..32.5	3/8	5/32



		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●	
Cast Iron	K	●	●		●	●								●
Non-Ferrous Material	N	●	●			●				●	●	●	●	
Heat Resistant Alloy	S						●	●	●	●				
Hardened Material	H						●	●	●					

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
	DCGT 21.501 FNAM3	DCGT 070200 FNAM3	1/4	.001						●	●			○	○		
	DCGT 21.504M FNAM3	DCGT 070201 MFNAM3	1/4	.003						●	●						
	DCGT 21.504 FNAM3	DCGT 070201 FNAM3	1/4	.004										○	○		
	DCGT 21.504 FNAM3	DCGT 070201 FNXAM3	1/4	.004		●											
	DCGT 21.508M FNAM3	DCGT 070202 MFNAM3	1/4	.007						●	●						
	DCGT 21.508 AM3	DCGT 070202 ENBAM3	1/4	.008	●												
	DCGT 21.508 FNAM3	DCGT 070202 FNAM3	1/4	.008										○	○		
	DCGT 21.508 FNAM3	DCGT 070202 FNXAM3	1/4	.008		●											
	DCGT 21.51M FNAM3	DCGT 070204 MFNAM3	1/4	.015						●	●						
	DCGT 21.51 AM3	DCGT 070204 ENBAM3	1/4	.016	●												
	DCGT 21.51 FNAM3	DCGT 070204 FNAM3	1/4	.016										○	○		
	DCGT 21.51 FNAM3	DCGT 070204 FNXAM3	1/4	.016		●											
	DCGT 32.501 FNAM3	DCGT 11T300 FNAM3	3/8	.001						●	●		○	○	●		
	DCGT 32.504M FNAM3	DCGT 11T301 MFNAM3	3/8	.003						●	●		○	○	○		
	DCGT 32.504 FNAM3	DCGT 11T301 FNXAM3	3/8	.004		●											
	DCGT 32.508M FNAM3	DCGT 11T302 MFNAM3	3/8	.007						●	●		○	○	○		
	DCGT 32.508 AM3	DCGT 11T302 ENBAM3	3/8	.008		●											
	DCGT 32.508 FNAM3	DCGT 11T302 FNAM3	3/8	.008						●				○	●		
	DCGT 32.508 FNAM3	DCGT 11T302 FNXAM3	3/8	.008		●											
	DCGT 32.51M FNAM3	DCGT 11T304 MFNAM3	3/8	.015						●	●		○	○	○		
	DCGT 32.51 FNAM3	DCGT 11T304 FNAM3	3/8	.016						●				○	●		
	DCGT 32.51 FNAM3	DCGT 11T304 FNXAM3	3/8	.016		●											
	DCGT 32.52 FNAM3	DCGT 11T308 FNAM3	3/8	.031						●							
	DCGT 32.52 AM3	DCGT 11T308 ENBAM3	3/8	.031	●												
	DCGT 32.52 FNAM3	DCGT 11T308 FNXAM3	3/8	.031		●											
	DCMT 21.508 AM3	DCMT 070202 ENBAM3	1/4	.008		○			○								
	DCMT 21.508 FNAM3	DCMT 070202 FNAM3	1/4	.008								○					
	DCMT 21.51 AM3	DCMT 070204 ENBAM3	1/4	.016		●	○		○								
	DCMT 21.51 FNAM3	DCMT 070204 FNAM3	1/4	.016								○					
	DCMT 21.52 AM3	DCMT 070208 ENBAM3	1/4	.031			○										
	DCMT 32.508 AM3	DCMT 11T302 ENBAM3	3/8	.008		○			○								
	DCMT 32.508 FNAM3	DCMT 11T302 FNAM3	3/8	.008								○					
	DCMT 32.51 AM3	DCMT 11T304 ENBAM3	3/8	.016		●	●		○								
	DCMT 32.51 FNAM3	DCMT 11T304 FNAM3	3/8	.016								○					
	DCMT 32.52 AM3	DCMT 11T308 ENBAM3	3/8	.031		●	●		○								
	DCMT 32.52 FNAM3	DCMT 11T308 FNAM3	3/8	.031								○					
	DCMT 32.53 AM3	DCMT 11T312 ENBAM3	3/8	.047		○			○								
NEW wiper insert	DCGT 32.502 AM3-WP*	TFD 11FR05AM3	3/8	.002							●						
	DCGT 32.506 AM3-WP*	TFD 11FR15AM3	3/8	.006							●						
NEW	DCGT 32.504M YL	DCGT 11T301M YL	3/8	.005								●	○				
	DCGT 32.508M YL	DCGT 11T302M YL	3/8	.007								●	○				
	DCGT 32.51M YL	DCGT 11T304M YL	3/8	.015								●	○				

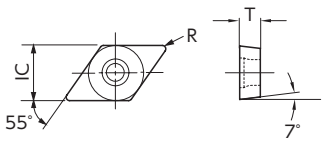


Holders ➡ Q16 • Q17 • Q18 • Q19

*Note: NTK WP style inserts have a wiper facet design.
The insert has a 0.3mm (.012") flat on the cutting edge when the insert is set into the toolholder.
The flat on the cutting edge ensures a superior surface when feed rates are increased.
WP style inserts can be used in toolholders: SDJC, CH-SDUL and DS-SDUL.

55 degree Diamond Positive type (DC.. ,continued)

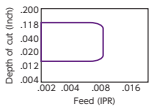
(inch)	IC	T
DC..21.5	1/4	3/32
DC..32.5	3/8	5/32

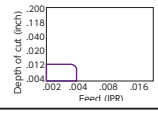


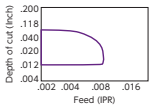
		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
		Cermet			PVD Coated		Carbide PVD Coated							CVD
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●	
Cast Iron	K	●	●		●	●								●
Non-Ferrous Material	N	●	●			●				●	●	●	●	
Heat Resistant Alloy	S						●	●	●	●				
Hardened Material	H						●	●	●					

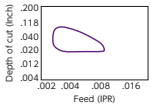
● : 1st Choice
● : Alternate choice

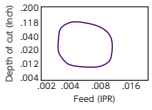
Shape	Item Number	ISO Item Number	IC	R	XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
	DCGT 21.504M CL	DCGT 070201M CL	1/4	.003							●	○	○				
	DCGT 21.508M CL	DCGT 070202M CL	1/4	.007							●	○	○				
	DCGT 21.51M CL	DCGT 070204M CL	1/4	.015						●**	●	○	○				
	DCGT 32.504M CL	DCGT 11T301M CL	3/8	.003							●	○	●				
	DCGT 32.508M CL	DCGT 11T302M CL	3/8	.007						●**	●	○	●				
	DCGT 32.51M CL	DCGT 11T304M CL	3/8	.015						●**	●	○	●				
	DCGT 21.504M AMX	DCGT 070201M AMX	1/4	.003									●				
	DCGT 21.508M AMX	DCGT 070202M AMX	1/4	.007									●				
	DCGT 32.504M AMX	DCGT 11T301M AMX	3/8	.003								●	●				
	DCGT 32.508M AMX	DCGT 11T302M AMX	3/8	.007								●	●				
	DCGT 32.51M AMX	DCGT 11T304M AMX	3/8	.015								●	●				
	DCGT 21.501 AZ7*	DCGT 070200 AZ7	1/4	.001						○							
	DCGT 21.504M AZ7*	DCGT 070201M AZ7	1/4	.003						○							
	DCGT 21.508M AZ7*	DCGT 070202M AZ7	1/4	.007						○							
	DCGT 32.501 AZ7*	DCGT 11T300 AZ7	3/8	.001						●	○		○		○		
	DCGT 32.504M AZ7*	DCGT 11T301M AZ7	3/8	.003						●	○		○		○		
	DCGT 32.508M AZ7*	DCGT 11T302M AZ7	3/8	.007						●	○		○		○		
	DCGT 32.51M AZ7*	DCGT 11T304M AZ7	3/8	.015						●	○		○		○		
	DCGT 32.52 AZ7*	DCGT 11T308 AZ7	3/8	.031						●	○				○		
	DCGT 32.508 AF3	DCGT 11T302 ENBAF3	3/8	.008	●												
	DCGT 32.51 AF3	DCGT 11T304 ENBAF3	3/8	.016	●												
	DCGT 32.508 FM	DCGT 11T302 ENBFM	3/8	.008	○												
	DCGT 32.51 FM	DCGT 11T304 ENBFM	3/8	.016	○												
	DCGT 32.52 FM	DCGT 11T308 ENBFM	3/8	.031	●												
	DCMT 21.508 ENBZR	DCMT 070202 ENBZR	1/4	.008		○			○								
	DCMT 21.51 ENBZR	DCMT 070204 ENBZR	1/4	.016		○			○								
	DCMT 32.508 ENBZR	DCMT 11T302 ENBZR	3/8	.008		○			○								
	DCMT 32.51 ENBZR	DCMT 11T304 ENBZR	3/8	.016		○			○								
	DCMT 32.52 ENBZR	DCMT 11T308 ENBZR	3/8	.031		○			○								
	DCGT 21.501 R/L S	DCGT 070200 R/L S	1/4	.001						R				Ⓡ Ⓛ	R Ⓛ		
	DCGT 21.504M R/L S	DCGT 070201M R/L S	1/4	.003						R	R						
	DCGT 21.504 R/L S	DCGT 070201 R/L S	1/4	.004		Ⓡ								Ⓡ Ⓛ	R Ⓛ		
	DCGT 21.508M R/L S	DCGT 070202M R/L S	1/4	.007						R	R						
	DCGT 21.508 R/L S	DCGT 070202 R/L S	1/4	.008		Ⓡ Ⓛ								Ⓡ Ⓛ	R Ⓛ		
	DCGT 21.51 R/L S	DCGT 070204 R/L S	1/4	.016						R				Ⓡ			
	DCGT 32.501 R/L S	DCGT 11T300 R/L S	3/8	.001						R	R		R	Ⓡ Ⓛ	R		
	DCGT 32.504M R/L S	DCGT 11T301M R/L S	3/8	.003						R	R		R				
	DCGT 32.504 R/L S	DCGT 11T301 R/L S	3/8	.004						Ⓡ				Ⓡ Ⓛ	R		
	DCGT 32.508M R/L S	DCGT 11T302M R/L S	3/8	.007						Ⓡ	R		Ⓡ				
	DCGT 32.508 R/L S	DCGT 11T302 R/L S	3/8	.008						R				Ⓡ Ⓛ	R		
	DCGT 32.51M R/L S	DCGT 11T304M R/L S	3/8	.015						Ⓡ			R				
	DCGT 32.51 R/L S	DCGT 11T304 R/L S	3/8	.016						R							
	DCMT 21.504 TR/L AS	DCMT 070201 TR/L AS	1/4	.004		Ⓡ Ⓛ			Ⓡ Ⓛ								
	DCMT 21.508 TR/L AS	DCMT 070202 TR/L AS	1/4	.008		Ⓡ Ⓛ			Ⓡ Ⓛ								
	DCMT 21.51 TR/L AS	DCMT 070204 TR/L AS	1/4	.016		Ⓡ Ⓛ			Ⓡ Ⓛ								
	DCMT 32.504 TR/L AS	DCMT 11T301 TR/L AS	3/8	.004		Ⓡ Ⓛ			Ⓡ Ⓛ								
	DCMT 32.508 TR/L AS	DCMT 11T302 TR/L AS	3/8	.008		Ⓡ Ⓛ			Ⓡ Ⓛ								
	DCMT 32.51 TR/L AS	DCMT 11T304 TR/L AS	3/8	.016		Ⓡ Ⓛ			Ⓡ Ⓛ								

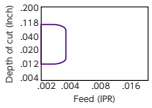


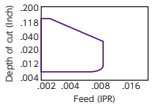






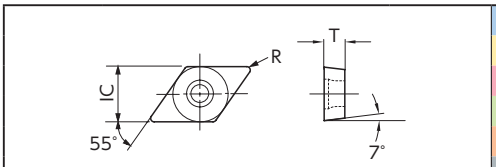






＊To be replaced by version which has 0.2mm higher edge.
＊＊To be released in November 2015.

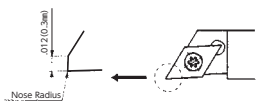
● : Stock ○ : 1-2 week delivery Ⓜ : Mirror finish
R : Stock (Right-hand only) L : Stock (Left-hand only) Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)



Steel	P	●
Stainless Steel	M	●
Cast Iron	K	●
Non-Ferrous Material	N	●
Heat Resistant Alloy	S	●
Hardened Material	H	●

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet					Carbide							
								PVD Coated		PVD Coated							CVD
					XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
 wiper insert	DCGT 21.502 R/L S-WP*	TFD 07FR/L05	1/4	.002						R				Ⓡ	ⓇⓁ		
	DCGT 21.506 R/L S-WP*	TFD 07FR/L15	1/4	.006						R					ⓇⓁ		
	DCGT 32.502 R/L S-WP*	TFD 11FR/L05	3/8	.002						R				Ⓡ	Ⓡ		
	DCGT 32.506 R/L S-WP*	TFD 11FR/L15	3/8	.006						R					Ⓡ		
	DCGT 21.501 R/L U	DCGT 070200 R/L U	1/4	.001										Ⓡ	Ⓡ		
	DCGT 21.504 R/L U	DCGT 070201 R/L U	1/4	.004										Ⓡ	Ⓡ		
	DCGT 21.508 R/L U	DCGT 070202 R/L U	1/4	.008										Ⓡ	ⓇⓁ		
	DCGT 32.501 R/L U1	DCGT 11T300 R/L U1	3/8	.001									Ⓡ	Ⓡ	ⓇⓁ		
	DCGT 32.504 R/L U1	DCGT 11T301 R/L U1	3/8	.004							Ⓡ		Ⓡ	Ⓡ	ⓇⓁ		
	DCGT 32.508 R/L U1	DCGT 11T302 R/L U1	3/8	.008							Ⓡ		Ⓡ	Ⓡ	ⓇⓁ		
	DCGT 32.51 R/L U1	DCGT 11T304 R/L U1	3/8	.016									Ⓡ	Ⓡ	ⓇⓁ		
 wiper insert	DCGT 21.502 R/L U-WP*	TFD 07FR/L05U	1/4	.002						Ⓡ				Ⓡ	Ⓡ		
	DCGT 21.506 R/L U-WP*	TFD 07FR/L15U	1/4	.006						Ⓡ					Ⓡ		
	DCGT 32.502 R/L U1-WP*	TFD 11FR/L05U1	3/8	.002						Ⓡ				Ⓡ	Ⓡ		
	DCGT 32.506 R/L U1-WP*	TFD 11FR/L15U1	3/8	.006						Ⓡ					Ⓡ		
	DCET 21.502 R/L KHG	DCET 0702005 R/L KHG	1/4	.002										ⓇⓁ			
	DCET 21.503 R/L KHG	DCET 0702008 R/L KHG	1/4	.003										ⓇⓁ			
	DCET 21.507 R/L KHG	DCET 0702018 R/L KHG	1/4	.007										ⓇⓁ			
	DCET 21.508 R/L KHG	DCET 070202 R/L KHG	1/4	.008										ⓇⓁ			
	DCET 32.502 R/L KHG	DCET 11T3005 R/L KHG	3/8	.002									Ⓡ	ⓇⓁ			
	DCET 32.503 R/L KHG	DCET 11T3008 R/L KHG	3/8	.003									Ⓡ	ⓇⓁ			
	DCET 32.507 R/L KHG	DCET 11T3018 R/L KHG	3/8	.007									Ⓡ	ⓇⓁ			
	DCET 32.508 R/L KHG	DCET 11T302 R/L KHG	3/8	.008									Ⓡ	ⓇⓁ			
	DCET 21.503 UHG	DCET 0702008 R/L UHG	1/4	.003										Ⓡ			
	DCET 32.503 UHG	DCET 11T3008 R/L UHG	3/8	.003										Ⓡ			
	DCGW 21.500 V Ⓜ	DCGW 07020 V	1/4	0										○			
	DCGW 21.501 FN	DCGW 070200 FN	1/4	.001											○		
	DCGW 21.501 H Ⓜ	DCGW 070200 H	1/4	.001												●	
	DCGW 21.504 FN	DCGW 070201 FN	1/4	.004											○		
	DCGW 21.504 H Ⓜ	DCGW 070201 H	1/4	.004												●	
	DCGW 21.508 H Ⓜ	DCGW 070202 H	1/4	.008												●	
	DCGW 32.500 V Ⓜ	DCGW 11T30 V	3/8	0										○			
	DCGW 32.501 FN	DCGW 11T300 FN	3/8	.001											○		
	DCGW 32.501 H Ⓜ	DCGW 11T300 H	3/8	.001												●	
	DCGW 32.504 FN	DCGW 11T301 FN	3/8	.004											○		
	DCGW 32.504 H Ⓜ	DCGW 11T301 H	3/8	.004												●	
	DCGW 32.508 H Ⓜ	DCGW 11T302 H	3/8	.008												●	
	DCGW 21.502RH-WP* Ⓜ	TFD 07FR05H	1/4	.002												○	
wiper insert	DCGW 32.502RH-WP* Ⓜ	TFD 11FR05H	3/8	.006												○	

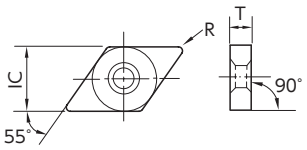


＊Note: NTK WP style inserts have a wiper facet design.
The insert has a 0.3mm (.012") flat on the cutting edge when the insert is set into the toolholder.
The flat on the cutting edge ensures a superior surface when feed rates are increased.
WP style inserts can be used in toolholders: SDJC, CH-SDUL and DS-SDUL.

Holders ➡ Q16 • Q17 • Q18 • Q19

55 degree Diamond Negative type (DN..)

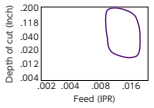
(inch)	IC	T
DN..43	1/2	3/16
DN..44	1/2	1/4



		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●	
Cast Iron	K	●	●		●	●								●
Non-Ferrous Material	N	●	●			●				●	●	●	●	
Heat Resistant Alloy	S						●	●	●	●				
Hardened Material	H						●	●	●					

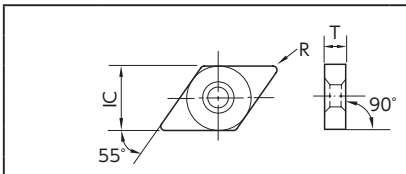
● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet			PVD Coated		Carbide PVD Coated							CVD
					XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
	DNMG 431 G	DNMG 150404 G	1/2	.016													○
	DNMG 432 G	DNMG 150408 G	1/2	.031													○
	DNMG 433 G	DNMG 150412 G	1/2	.047													○
	DNMG 431 G	DNMG 150404 ENBG	1/2	.016	●		●										
	DNMG 431 G	DNMG 150404 TNG	1/2	.016				○		○							
	DNMG 432 G	DNMG 150408 ENBG	1/2	.031	●		●										
	DNMG 432 G	DNMG 150408 TNG	1/2	.031				○									
	DNMG 433 G	DNMG 150412 ENBG	1/2	.047	●												
	DNMG 441 G	DNMG 150604 ENBG	1/2	.016			○										
	DNGG 432 R6	DNGG 150408 ENBR6	1/2	.031	●												
	DNGG 4304 R/L RN1	DNGG 150401 TR/L RN1	1/2	.004	R L												
	DNGG 431 R/L RN1	DNGG 150404 TR/L RN1	1/2	.016	R L												
	DNGG 432 R/L RN1	DNGG 150408 TR/L RN1	1/2	.031	R L												
	DNMG 431 WM	DNMG 150404 ENWM	1/2	.016		●			○								
	DNMG 432 WM	DNMG 150408 ENWM	1/2	.031		●			○								
	DNMG 432 WR	DNMG 150408 ENBWR	1/2	.031			○										
	DNMG 433 WR	DNMG 150412 ENBWR	1/2	.047			●										
	DNMG 432 WV	DNMG 150408 ENWV	1/2	.031		●			○								
	DNMG 432 Z5	DNMG 150408 TNBZ5	1/2	.031						○		○					
	DNMG 431 ZF1	DNMG 150404 ENBZF1	1/2	.016	●		●	○									
	DNMG 432 ZF1	DNMG 150408 ENBZF1	1/2	.031	●		●	○									
	DNMG 441 ZF1	DNMG 150604 ENBZF1	1/2	.016	○		○										
	DNMG 442 ZF1	DNMG 150608 ENBZF1	1/2	.031	●		○										



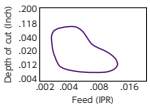
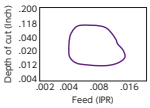
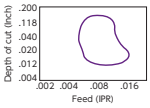
Holders ➡ F8 • F9 • Q38
Boring bars ➡ G5

● : Stock ○ : 1-2 week delivery



Steel	P
Stainless Steel	M
Cast Iron	K
Non-Ferrous Material	N
Heat Resistant Alloy	S
Hardened Material	H

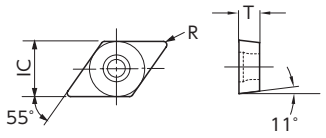
● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet					Carbide								
								PVD Coated		PVD Coated							CVD	
					XT3	C7X	XN4	Q15	C7Z	QM3	DM4	TM4	DT4	VM1	ZM3	KM1	CP1	
	**DNGG 4304 FNZF1**	DNGG 150401 FNZF1	1/2	.004	●													
	DNGG 4308 FNZF1	DNGG 150402 FNZF1	1/2	.008	●													
	DNGG 431 FNZF1	DNGG 150404 FNZF1	1/2	.016	●													
	DNGG 432 FNZF1	DNGG 150408 FNZF1	1/2	.031	●													
	**DNGG 431 FNZP**	DNGG 150404 FNZP	1/2	.016						●	●				●			
	DNGG 432 FNZP	DNGG 150408 FNZP	1/2	.031						●	●				●			
	**DNMG 431 ZW1**	DNMG 150404 ENBZW1	1/2	.016			○											
	DNMG 432 ZW1	DNMG 150408 ENBZW1	1/2	.031			●											
	DNMG 442 ZW1	DNMG 150608 ENBZW1	1/2	.031	○		○											
	**DNGA 431**	DNGA 150404 TN	1/2	.016	●													—
	DNGA 432	DNGA 150408 TN	1/2	.031	●													
	DNGA 433	DNGA 150412 TN	1/2	.047	○													

Holders ➡ F8 • F9 • Q38
Boring bars ➡ G5

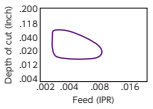
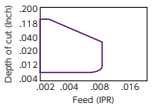
55 degree Diamond Positive type (DP..)

(inch)	IC	T
DP..21.5	1/4	3/32
DP..32.5	3/8	5/32



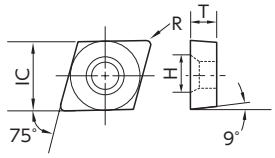
Steel	P	●
Stainless Steel	M	●
Cast Iron	K	●
Non-Ferrous Material	N	●
Heat Resistant Alloy	S	●
Hardened Material	H	●

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet					Carbide								
								PVD Coated		PVD Coated							CVD	
					XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1	
	DPGT 21.504 FNAM3	DPGT 070201 FNAM3	1/4	.004		●												
	DPGT 21.508 AM3	DPGT 070202 ENBAM3	1/4	.008	●													
	DPGT 21.508 FNAM3	DPGT 070202 FNAM3	1/4	.008		●												
	DPGT 21.51 AM3	DPGT 070204 ENBAM3	1/4	.016	●													
	DPGT 21.51 FNAM3	DPGT 070204 FNXAM3	1/4	.016		●												
	DPGT 32.504 FNAM3	DPGT 11T301 FNAM3	3/8	.004		●												
	DPGT 32.508 AF3	DPGT 11T302 ENBAF3	3/8	.008	●													
	DPGT 32.508 FNAM3	DPGT 11T302 FNAM3	3/8	.008		●												
	DPGT 32.51 AF3	DPGT 11T304 ENBAF3	3/8	.016	●													
	DPGT 32.51 FNAM3	DPGT 11T304 FNAM3	3/8	.016		●												
	DPGT 21.504 R/L S	DPGT 070201 R/L S	1/4	.004	R													

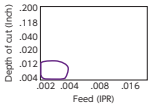
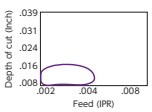
75 degree Diamond Positive type (ER..)

(inch)	IC	T
ER..52	5/32	.063



Steel	P	●
Stainless Steel	M	●
Cast Iron	K	●
Non-Ferrous Material	N	●
Heat Resistant Alloy	S	●
Hardened Material	H	●

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet					Carbide								
								PCD Coated		PVD Coated							CVD	
					XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1	
 L-hand shown	ERGP 52Y F R/L A2	ERGHT 30102 F R/L A2	5/32	.008	Ⓡ	Ⓛ	Ⓡ	Ⓛ					RⓁ	RⓁ	RⓁ			
	ERGP 521 F R/L A2	ERGHT 30104 F R/L A2	5/32	.016									R		Ⓛ			
 L-hand shown	ERGP 5204 F R/L F1	ERGHT 30101 F R/L F1	5/32	.004									R					
	ERGP 52Y F R/L F1	ERGHT 30102 F R/L F1	5/32	.008									R					
	ERGP 521 F R/L F1	ERGHT 30104 F R/L F1	5/32	.016									R					

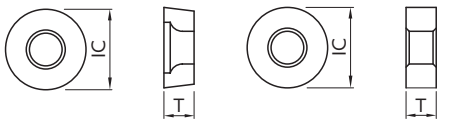
Holders ➡ V24

● : Stock ○ : 1-2 week delivery
R : Stock (Right-hand only) L : Stock (Left-hand only) Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)

Round type (RC.. / RN.. / RP..)

(inch)	IC	T
RC..43	1/2	3/16
RN..32	3/8	1/8
RN..43	1/2	1/4
RP..06	.236	3/32

(inch)	IC	T
RP..08	.315	3/32
RP..10	.394	7/64
RP..12	.472	1/8
RP..16	.630	3/16
RP..20	.787	3/16

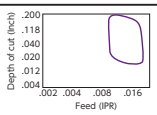


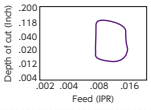
RC_ _, RP_ _ RN_ _

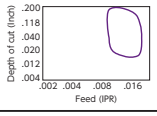
Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ● ● ●
Hardened Material	H	● ● ● ●

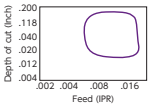
● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet XT3	Cermet C7X	Cermet XN4	Cermet (PVD Coated) Q15	Cermet (PVD Coated) C7Z	Carbide (PVD Coated) QM3	Carbide (PVD Coated) DT4	Carbide (PVD Coated) DM4	Carbide (PVD Coated) TM4	Carbide (PVD Coated) VM1	Carbide (PVD Coated) ZM3	Carbide KM1	Carbide (CVD) CP1
	RCMX 43M0 GM	RCMX 1204M0 ENBGM	1/2	—		○	○										
	RCMX 43M0 GB	RCMX 1204M0 GB	1/2	—		○	○										
	RNMG 32 F	RNMG 090300 ENBF	3/8	—			○										
	RNMG 43 G	RNMG 120400 ENBG	1/2	—			●										
	RPMT 0602M0 GB	RPMT 0602M0 GB	.236	—		○	○										
	RPMT 0802M0 GB	RPMT 0802M0 GB	.315	—		○	○										
	RPMT 10T2M0 GB	RPMT 10T2M0 GB	.394	—		○	○										
	RPMT 1203M0 GB	RPMT 1203M0 GB	.472	—		○	○										
	RPMT 1604M0 GB	RPMT 1604M0 GB	.630	—		○	●										
	RPMT 2004M0 GB	RPMT 2004M0 GB	.787	—		○	○										
	RPMX 1203M0 GB	RPMX 1203M0 GB	.472	—		○	○										





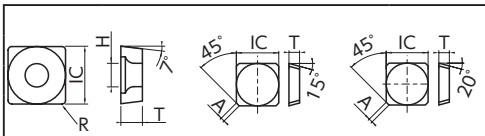




90 degree Square Positive type (SC.. / SD.. / SE..)

(inch)	IC	T	H
SC..32	3/8	5/32	.173
SD..42	1/2	1/8	—
SD..43	1/2	3/16	—

(inch)	IC	T	H
SD..53	5/8	3/16	—
SE..42	1/2	1/8	—
SE..53	5/8	3/16	—



SCMT_ _ SD_ _ SECN_ _

Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ● ● ●
Hardened Material	H	● ● ● ●

● : 1st Choice
● : Alternate choice

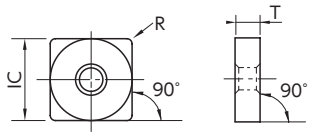
Shape	Item Number	ISO Item Number	IC	R [A]	Cermet XT3	Cermet C7X	Cermet XN4	Cermet (PVD Coated) Q15	Cermet (PVD Coated) C7Z	Carbide (PVD Coated) QM3	Carbide (PVD Coated) DT4	Carbide (PVD Coated) DM4	Carbide (PVD Coated) TM4	Carbide (PVD Coated) VM1	Carbide (PVD Coated) ZM3	Carbide KM1	Carbide (CVD) CP1
	SCMT 32.52 AM3	SCMT 09T308 ENBAM3	3/8	.031		●											
	SCMT 32.52 AM5	SCMT 09T308 ENBAM5	3/8	.031			○										
	SDKN 42 AEN	SDKN 1203 AEN	1/2	[.047]		○											—
	SDKN 53 A	SDKN 1504 AETN	5/8	[.047]		○											
	SDC 42 A3	SDCN 1203 AE	1/2	[.047]		●											—
	SEK 42 AFN	SEKN 1203 AFN	1/2	[.094]		○											
	SECN 42 AFTN	SECN 1203 AFTN	1/2	[.094]		●											
	SECN 53 AFTN	SECN 1504 AFTN	5/8	[.094]		●											
	SDCW 432 T0420		1/2	.031		●											—
	SDCW 433 T0420		1/2	.047		●											
	SDCW 434 T0420		1/2	.063		●											

※AE, EE, and PE come with wipers.

Cutters (SDCW) ➡ I 17 • I 18 • I 19

90 degree Square Negative type (SN..)

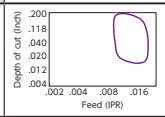
(inch)	IC	T
SN..32	3/8	1/8
SN..43	1/2	3/16



		Cermet					Carbide								
					PVD Coated		PVD Coated							CVD	
		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1	
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	●	
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●	●	
Cast Iron	K	●	●		●	●									●
Non-Ferrous Material	N	●	●			●				●	●	●	●		
Heat Resistant Alloy	S						●	●	●	●					
Hardened Material	H						●	●	●						

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
	SNMG 432 G	SNMG 120408 G	1/2	.031													○
	SNMG 433 G	SNMG 120412 G	1/2	.047													●
	SNMG 434 G	SNMG 120416 G	1/2	.063													○
	SNMG 322 K	SNMG 090308 K	3/8	.031			●										
	SNMG 322 G	SNMG 090308 ENBG	3/8	.031			○										
	SNMG 432 G	SNMG 120408 ENBG	1/2	.031	●		●										
	SNMG 432 G	SNMG 120408 TNG	1/2	.031				○									
	SNMG 433 G	SNMG 120412 ENBG	1/2	.047	●		●										
	SNMG 433 G	SNMG 120412 TNG	1/2	.047				○									
	SNMG 434 G	SNMG 120416 ENBG	1/2	.063			○										
	SNMG 432 WM	SNMG 120408 ENWM	1/2	.031		○			○								
	SNMG 432 WR	SNMG 120408 ENBWR	1/2	.031			●										
	SNMG 432 Z5	SNMG 120408 ENBZ5	1/2	.031			○										
	SNMG 433 Z5	SNMG 120412 TNBZ5	1/2	.047						○		○					
	SNMG 432 ZF1	SNMG 120408 ENBZF1	1/2	.031	●		●										
	SNMG 433 ZF1	SNMG 120412 ENBZF1	1/2	.047	●												
	SNMG 432 ZW1	SNMG 120408 ENBZW1	1/2	.031			●										
	SNMG 433 ZW1	SNMG 120412 ENBZW1	1/2	.047			●										
	SNGG 321 RLB	SNGG 090304 TRLB	3/8	.016	Ⓛ												
	SNGG 322 RLB	SNGG 090308 TRLB	3/8	.031	ⓇⓁ												
	SNGG 431 RLB	SNGG 120404 TRLB	1/2	.016	ⓇⓁ												
	SNGG 322 RLN1	SNGG 090308 RLN1	3/8	.031	R L												
	SNGG 432 RLN1	SNGG 120408 RLN1	1/2	.031	R												
	SNGG 432 RLC	SNGG 120408T RLC	1/2	.031	ⓇⓁ	Ⓡ											
	SNG 322	SNGN 090308 TN	3/8	.031	○												
	SNG 432 T0420	SNGN 120408 T01020	1/2	.031		●											
	SNG 432 T0425	SNGN 120408 T01025	1/2	.031	○	○											
	SNG 433 T0420	SNGN 120412 T01020	1/2	.047		●											
	SNG 434 T0420	SNGN 120416 T01020	1/2	.063		●											



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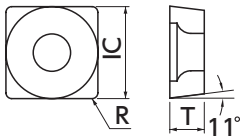
Holders	➡ F10 • F11
Boring bars	➡ G6
Cutters (SNG)	➡ I 10 • I 12 • I 14

● : Stock ○ : 1-2 week delivery
R : Stock (Right-hand only) L : Stock (Left-hand only) Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)

90 degree Square Positive type (SP..)

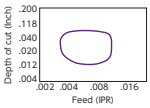
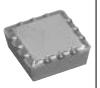
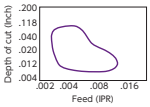
(inch)	IC	T
SP..22	1/4	1/8
SP..32	3/8	1/8
SP..42	1/2	1/8

(inch)	IC	T
SP..43	1/2	3/16
SP..53	5/8	3/16
SP..63	3/4	3/16
SP..73	7/32	3/32



Steel	P	● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ● ● ●
Hardened Material	H	● ● ●

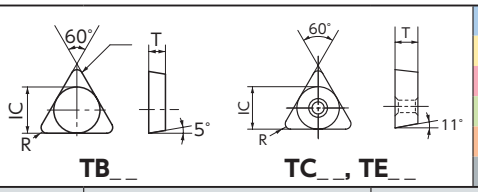
● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet XT3	Cermet C7X	Cermet XN4	Cermet PVD Coated Q15	Cermet PVD Coated C7Z	Carbide PVD Coated QM3	Carbide PVD Coated DT4	Carbide PVD Coated DM4	Carbide PVD Coated TM4	Carbide PVD Coated VM1	Carbide PVD Coated ZM3	Carbide KM1	Carbide CVD CP1	
	SPGR 322 AF1	SPGR 090308 ENBAF1	3/8	.031	●													
	SPGR 422 AF1	SPGR 120308 ENBAF1	1/2	.031	●													
	SPGR 322 QZ	SPGR 090308 ENBQZ	3/8	.031			○											
	SPMH 326 TR/LBH1	SPMH 090324 TR/LBH1	3/8	.094	Ⓛ													—
	SPMH 328 TR/LH1	SPMH 090332 TR/LAH1	3/8	.126	Ⓛ													
	SPMR 4310 R/LH2	SPMR 120440 TR/LH2	1/2	.157	Ⓛ													—
	SPG 321	SPGN 090304 TN	3/8	.016	○													—
	SPG 322	SPGN 090308 TN	3/8	.031	○													
	SPG 422	SPGN 120308 TN	1/2	.031	○	○												
	SPG 433	SPGN 120412	3/8	.047		●												
	SPC 422	SPCN 120308	1/2	.031		●												—
	SPC 433	SPCN 120412	1/2	.047		●												
	SPC 633	SPCN 190412	1/2	.047		●												
	SPC 634	SPCN 190416	1/2	.063		●												
	SPCE 732	SPCE 050208	7/32	.031	●													—
	SPCE 032	SPCE 070208	5/16	.031	●													
	SPEB 222	SPEB 060308	1/4	.031		●												—
	SPKN 42 EDTR/L	SPKN 1203 EDTR/L	1/2			R L												—
	SPKN 53 EDTR/L	SPKN 1504 EDTR/L	5/8			R												
	SPME 032	SPME 070208	1/4	.031			●											—
	SPM 322	SPMN 090308	3/8	.031			●											—
	SPM 422	SPMN 120308	1/2	.031			●											
	SPM 4310	SPMN 120440 TN	1/2	.157	○													
	SPM 632	SPMN 190408 TN	3/4	.031			○											

60 degree Triangle Positive type (TB.. / TC.. / TE..)

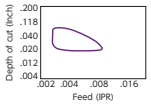
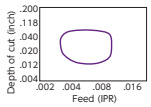
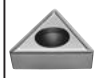
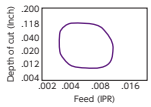
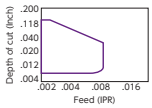
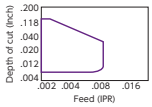
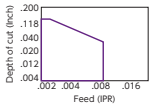
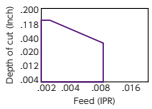
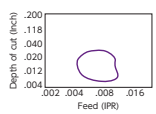
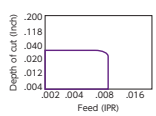
(inch)	IC	T
TB..52	5/32	1/16
TC..21	1/4	3/32
TC..32	3/8	5/32

(inch)	IC	T
TC..52	5/32	1/16
TC..73	7/32	3/32
TE..43	1/2	3/16

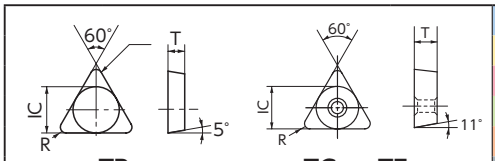


		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●	
Cast Iron	K	●	●		●	●								●
Non-Ferrous Material	N	●	●			●				●	●	●	●	
Heat Resistant Alloy	S						●	●	●	●				
Hardened Material	H						●	●	●					

● : 1st Choice
● : Alternate choice

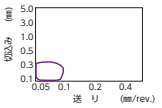
Shape	Item Number	ISO Item Number	IC	R	Cermet			PVD Coated		Carbide			PVD Coated				CVD	
					XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1	
	TBGE 521	TBGE 060104	5/32	.016	●													—
	TBGE 522	TBGE 060108	5/32	.031	○													
	TCGT 21.508 FNAM3	TCGT 110202 FNXAM3	1/4	.008		○												
	TCGT 32.508 AM3	TCGT 16T302 ENBAM3	3/32	.008	●													
	TCGT 32.51 AM3	TCGT 16T304 ENBAM3	3/32	.016	●													
	TCMT 21.51 AM3	TCMT 110204 ENBAM3	1/4	.016		○												
	TCGT 21.504 AF1	TCGT 110201 AF1	1/4	.004	●													
	TCGT 21.51 AF1	TCGT 110204 AF1	1/4	.016	●													
	TCGT 21.52 AF1	TCGT 110208 AF1	1/4	.031	●													
	TCMT 32.52 AM5	TCMT 16T308 ENBAM5	3/8	.031			○											
	TCGT 7304 R/L S	TCGT 090201 R/L S	7/32	.004		Ⓡ								ⓇⓁ	Ⓡ			
	TCGT 7308 R/L S	TCGT 090202 R/L S	7/32	.008		ⓇⓁ									Ⓡ			
	TCGT 21.504 R/L S	TCGT 110201 R/L S	1/4	.004										ⓇⓁ	Ⓡ			
 wiper insert	TCGT 7302 R/L S-WP*	TFT 09FR/L05	7/32	.002											Ⓡ			
	TCGT 7306 R/L S-WP*	TFT 09FR/L15	7/32	.006											Ⓡ			
	TCGT 21.502 R/L S-WP*	TFT 11FR/L05	1/4	.002											Ⓡ			
	TCGT 21.506 R/L S-WP*	TFT 11FR/L15	1/4	.006											Ⓡ			
	TCGT 7304 R/L U	TCGT 090201 R/L U	7/32	.004											Ⓡ			
	TCGT 7308 R/L U	TCGT 090202 R/L U	7/32	.008											Ⓡ			
 wiper insert	TCGT 7302 R/L U-WP*	TFT 09FR/L05U	7/32	.002											Ⓡ			
	TCGT 7306 R/L U-WP*	TFT 09FR/L15U	7/32	.006											Ⓡ			
	TCGT 21.502 R/L U1-WP*	TFT 11FR/L05U1	1/4	.002											Ⓡ			
	TCGT 21.506 R/L U1-WP*	TFT 11FR/L15U1	1/4	.006											Ⓡ			
	TCGH 5204 TR/L B1	TCGH 060101 TR/L B1	5/32	.004	L													
	TCGH 5208 FR/L B1	TCGH 060102 FR/L B1	5/32	.008									Ⓛ		Ⓛ			
	TCGH 5208 TR/L B1	TCGH 060102 TR/L B1	5/32	.008	ⓇⓁ													
	TCGH 521 FR/L B1	TCGH 060104 FR/L B1	5/32	.016									Ⓛ		Ⓛ			
	TCGH 521 TR/L B1	TCGH 060104 TR/L B1	5/32	.016	L													
	TCGP 5204 FR/L F05	TCGH 060101 FR/L F05	5/32	.004									R					
	TCGP 5208 FR/L F05	TCGH 060102 FR/L F05	5/32	.008									RⓁ	Ⓡ	ⓇⓁ			
	TCGP 5208 R/L F05	TCGH 060102 TR/L F05	5/32	.008		ⓇⓁ			Ⓡ									
	TCGP 521 FR/L F05	TCGH 060104 FR/L F05	5/32	.016									R	Ⓡ	Ⓡ			
	TCGP 521 R/L F05	TCGH 060104 TR/L F05	5/32	.016		ⓇⓁ			Ⓡ									

● : Stock ○ : 1-2 week delivery
R : Stock (Right-hand only) L : Stock (Left-hand only) Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)

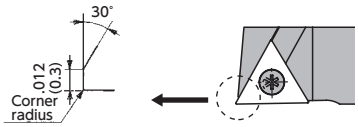


Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ● ● ● ●
Hardened Material	H	● ● ● ● ●

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet XT3	Cermet C7X	Cermet XN4	Cermet PVD Coated Q15	Cermet PVD Coated C7Z	Carbide PVD Coated QM3	Carbide PVD Coated DT4	Carbide PVD Coated DM4	Carbide PVD Coated TM4	Carbide PVD Coated VM1	Carbide PVD Coated ZM3	Carbide PVD Coated KM1	Carbide CVD CP1	
	TCGH 5208 F℞K	TCGH 060102 F℞K	5/32	.008									Ⓛ					
	TCGH 521 F℞K	TCGH 060104 F℞K	5/32	.016									Ⓛ					
	TCGD 52Y	TCGB 060102 TN	5/32	.008	○													—
	TCGD 521	TCGB 060104 TN	5/32	.016	●													
	TCGW 7301 FN	TCGW 090200 FN	7/32	.001											○			
	TCGW 7304 FN	TCGW 090201 FN	7/32	.004											○			
	TCGW 21.501 FN	TCGW 110200 FN	1/4	.001											○			
	TCGW 21.504 FN	TCGW 110201 FN	1/4	.004											○			
	TEEN 43 PR	TEEN 2204 PFTR	1/2	.016		○												—

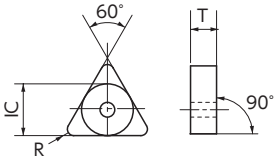
Holders (TC) ➡ V31



＊Note: NTK WP style inserts have a wiper facet design.
The insert has a 0.3mm (.012") flat on the cutting edge when the insert is set into the toolholder.
The flat on the cutting edge ensures a superior surface when feed rates are increased.
WP style inserts can be used in toolholders: STAC

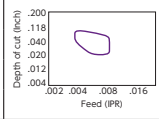
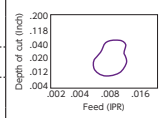
60 degree Triangle Negative type (TN..)

(inch)	IC	T	(inch)	IC	T
TN..22	1/4	1/8	TN..33	3/8	3/16
TN..32	3/8	1/8	TN..43	1/2	3/16



Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ● ● ● ●
Hardened Material	H	● ● ● ● ●

● : 1st Choice
● : Alternate choice

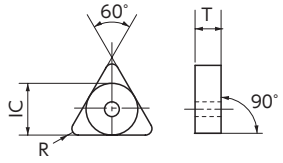
Shape	Item Number	ISO Item Number	IC	R	Cermet XT3	Cermet C7X	Cermet XN4	Cermet PVD Coated Q15	Cermet PVD Coated C7Z	Carbide PVD Coated QM3	Carbide PVD Coated DT4	Carbide PVD Coated DM4	Carbide PVD Coated TM4	Carbide PVD Coated VM1	Carbide PVD Coated ZM3	Carbide PVD Coated KM1	Carbide CVD CP1	
	TNEG 3304M F℞D1	TNEG 160401M F℞D1	3/8	.003					ⓇⓁ									
	TNEG 3308 F℞D1	TNEG 160402 F℞D1	3/8	.008					ⓇⓁ				ⓇⓁ					
	TNEG 331 F℞D1	TNEG 160404 F℞D1	3/8	.016					ⓇⓁ				ⓇⓁ					
	TNEG 332 F℞D1	TNEG 160408 F℞D1	3/8	.031					ⓇⓁ				ⓇⓁ					
	TNGA 222	TNGA 110308 TN	1/4	.031	○													—
	TNGA 322	TNGA 160308 TN	3/8	.031	●													
	TNMA 332	TNMA 160408 TN	3/8	.031			●											
	TNGA 332	TNGA 160408 TN	3/8	.031	○													
	TNGA 333	TNGA 160412 TN	3/8	.047	○													
	TNGA 432	TNGA 220408 TN	1/2	.031	○													
	TNGA 433	TNGA 220412 TN	1/2	.047	●													
	TNGG 221 ℞B	TNGG 110304 T℞B	1/4	.016	ⓇL													
	TNGG 222 ℞B	TNGG 110308 T℞B	1/4	.031	Ⓛ													
	TNGG 322 ℞B	TNGG 160308 T℞B	3/8	.031	Ⓛ													
	TNGG 331 ℞B	TNGG 160404 T℞B	3/8	.016	ⓇⓁ													
	TNGG 332 ℞B	TNGG 160408 T℞B	3/8	.031	ⓇⓁ													

Holders ➡ F14 • Q34

60 degree Triangle Negative type (TN..)

(inch)	IC	T
TN..22	1/4	1/8
TN..32	3/8	1/8

(inch)	IC	T
TN..33	3/8	3/16
TN..43	1/2	3/16



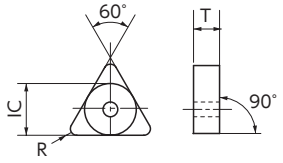
Steel	P	● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ● ● ● ●
Hardened Material	H	● ● ● ●

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet XT3	Cermet C7X	Cermet XN4	Cermet PVD Coated Q15	Cermet PVD Coated C7Z	Carbide PVD Coated QM3	Carbide PVD Coated DT4	Carbide PVD Coated DM4	Carbide PVD Coated TM4	Carbide PVD Coated VM1	Carbide PVD Coated ZM3	Carbide KM1	Carbide CVD CP1
	TNGG 3308 F℞C	TNGG 160402 F℞C	3/8	.008											Ⓡ		
	TNGG 332 T℞C	TNGG 160408 T℞C	3/8	.031	ⓇⓁ												
	TNGG 431 ℞C	TNGG 220404 T℞C	1/2	.016	R L												
	TNGG 432 ℞C	TNGG 220408 T℞C	1/2	.031	R L												
	TNMG 331 ℞C	TNMG 160404 T℞C	3/8	.016	ⓇⓁ		Ⓡ										
	TNMG 332 ℞C	TNMG 160408 T℞C	3/8	.031	ⓇⓁ												
	TNGG 3304 F℞DA	TNGG 160401 F℞DA	3/8	.004	Ⓡ									Ⓡ	Ⓡ		
	TNGG 331 ℞L2	TNGG 160404 ℞L2	3/8	.016	R												
	TNGG 332 ℞L2	TNGG 160408 ℞L2	3/8	.031	R												
	TNGG 321 ℞N1	TNGG 160304 ℞N1	3/8	.016	R L												
	TNGG 322 ℞N1	TNGG 160308 ℞N1	3/8	.031	L												
	TNGG 3308 ℞N1	TNGG 160402 T℞N1	3/8	.008	ⓇⓁ												
	TNGG 331 ℞N1	TNGG 160404 T℞N1	3/8	.016	R L												
	TNGG 332 ℞N1	TNGG 160408 T℞N1	3/8	.031	R L												
	TNGG 332 R1	TNGG 160408 ENBR1	3/8	.031	●												
	TNGG 3304 F℞U2	TNGG 160401 F℞U2	3/8	.004	Ⓡ									Ⓡ	Ⓡ		
	TNGG 3308 F℞U2	TNGG 160402 F℞U2	3/8	.008	ⓇⓁ							ⓇⓁ			RⓁ		
	TNGG 331 F℞U2	TNGG 160404 F℞U2	3/8	.016	ⓇⓁ							ⓇⓁ			RⓁ		
	TNGG 332 F℞U2	TNGG 160408 F℞U2	3/8	.031											RⓁ		
	TNGG 3304M FNUL	TNGG 160401M FNUL	3/8	.003								●	●				
	TNGG 3308M FNUL	TNGG 160402M FNUL	3/8	.007								●	●				
	TNGG 331M FNUL	TNGG 160404M FNUL	3/8	.015								●	●				
	TNGG 322 FNZF1	TNGG 160308 FNZF1	3/8	.031	●												
	TNGG 331 FNZF1	TNGG 160404 FNZF1	3/8	.016	●												
	TNGG 332 FNZF1	TNGG 160408 FNZF1	3/8	.031	●												
	TNGG 3308 FNZP	TNGG 160402 FNZP	3/8	.008						○		○		○	○		
	TNGG 331 FNZP	TNGG 160404 FNZP	3/8	.016						●		○		○	●		
	TNGG 332 FNZP	TNGG 160408 FNZP	3/8	.031						●		○		○	●		

Holders ➡ F14 • Q34

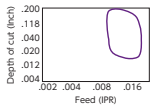
● : Stock ○ : 1-2 week delivery
R : Stock (Right-hand only) L : Stock (Left-hand only) Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)



Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ● ● ● ●
Hardened Material	H	● ● ● ●

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet					Carbide							
								PVD Coated		PVD Coated							CVD
					XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
	TNMG 332 G	TNMG 160408 G	3/8	.031													○
	TNMG 333 G	TNMG 160412 G	3/8	.047													●
	TNMG 221 F	TNMG 110304 ENBF	1/4	.016	●												
	TNMG 321 F	TNMG 160404 ENBF	3/8	.016	●												
	TNMG 322 F	TNMG 160408 ENBF	3/8	.031	●												
	TNMG 321 G	TNMG 160304 ENBG	3/8	.016			●										
	TNMG 322 G	TNMG 160308 ENBG	3/8	.031			●										
	TNMG 323 G	TNMG 160316 ENBG	3/8	.047			●										
	TNMG 331 G	TNMG 160404 ENBG	3/8	.016	●		●										
	TNMG 331 G	TNMG 160404 TNG	3/8	.016				○									
	TNMG 332 G	TNMG 160408 ENBG	3/8	.031	●		●										
	TNMG 332 G	TNMG 160408 TNG	3/8	.031				○									
	TNMG 333 G	TNMG 160412 ENBG	3/8	.047	●		○										
	TNMG 333 G	TNMG 160412 TNG	3/8	.047				○									
	TNMG 431 G	TNMG 220404 ENBG	1/2	.016	●												
	TNMG 432 G	TNMG 220408 ENBG	1/2	.031	●		●										
	TNMG 433 G	TNMG 220412 ENBG	1/2	.047	●		○										
	TNMG 331 WM	TNMG 160404 ENWM	3/8	.016		●			○								
	TNMG 332 WM	TNMG 160408 ENWM	3/8	.031		●			○								
	TNMG 332 WR	TNMG 160408 ENBWR	3/8	.031			●										
	TNMG 332 WV	TNMG 160408 ENWV	3/8	.031		●			○								
	TNMG 331 Z5	TNMG 160404 TNBZ5	3/8	.016						○		○					
	TNMG 332 Z5	TNMG 160408 ENBZ5	3/8	.031			○										
	TNMG 332 Z5	TNMG 160408 TNBZ5	3/8	.031						○		○					
	TNMG 322 ZF1	TNMG 160308 ENBZF1	3/8	.031	●												
	TNMG 323 ZF1	TNMG 160312 ENBZF1	3/8	.047	●												
	TNMG 331 ZF1	TNMG 160404 ENBZF1	3/8	.016	●		●	○									
	TNMG 332 ZF1	TNMG 160408 ENBZF1	3/8	.031	●		●	○									
	TNMG 333 ZF1	TNMG 160412 ENBZF1	3/8	.047	●												
	TNMG 432 ZF1	TNMG 220408 ENBZF1	1/2	.031	●												
	TNMP 331 ZP	TNMG 160404 ENBZP	3/8	.016	●												
	TNMP 332 ZP	TNMG 160408 ENBZP	3/8	.031	●												
	TNMP 432 ZP	TNMG 220408 ENBZP	1/2	.031	●												
	TNMG 321 ZW1	TNMG 160304 ENBZW1	3/8	.016			●										
	TNMG 322 ZW1	TNMG 160308 ENBZW1	3/8	.031	●		●										
	TNMG 331 ZW1	TNMG 160404 ENBZW1	3/8	.016			●										
	TNMG 332 ZW1	TNMG 160408 ENBZW1	3/8	.031	●		●										
	TNMG 432 ZW1	TNMG 220408 ENBZW1	1/2	.031			●										

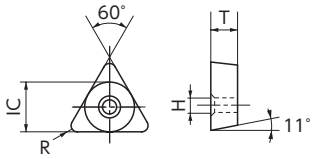


Holders ➡ F14 • Q34

60 degree Triangle Positive type (TP..)

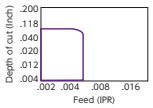
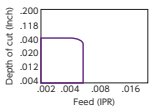
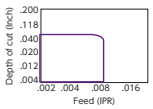
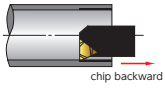
(inch)	IC	T
TP..22	1/4	1/8
TP..32	3/8	1/8
TP..43	1/2	3/16

(inch)	IC	T
TP..63	3/16	3/32
TP..73	7/32	3/32



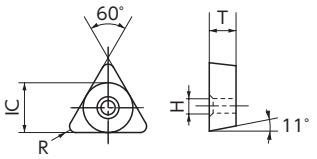
Steel	P	● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ● ● ● ● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ● ● ● ● ● ● ● ● ●
Hardened Material	H	● ● ● ● ● ● ● ● ● ● ● ●

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet XT3	Cermet C7X	Cermet XN4	Cermet PVD Coated Q15	Cermet PVD Coated C7Z	Carbide PVD Coated QM3	Carbide PVD Coated DT4	Carbide PVD Coated DM4	Carbide PVD Coated TM4	Carbide PVD Coated VM1	Carbide PVD Coated ZM3	Carbide KM1	Carbide CVD CP1	
	TP 404	TPGA 110201	1/4	.004	●													—
	TP 41	TPGA 110204	1/4	.016	●													
	TP 42	TPGA 110208	1/4	.031	●													
	TP 62	TPGA 160308	3/8	.031	●													
	TPC 2204	TPCN 110301	1/4	.004	●													—
	TPC 3204	TPCN 160301	3/8	.004	●													
	TPC 322	TPCN 160308	3/8	.016		●												
	TPC 432	TPCN 220408	1/2	.016		●												
	TPC 433	TPCN 220412	1/2	.047		●												
	TPG 221	TPGN 110304 TN	1/4	.016	●													—
	TPG 222	TPGN 110308 TN	1/4	.031	●	○												
	TPG 321 FN	TPGN 160304 FN	3/8	.016	●													
	TPG 321	TPGN 160304 TN	3/8	.016	●													
	TPG 322 FN	TPGN 160308 FN	3/8	.031	●													
	TPG 322	TPGN 160308 TN	3/8	.031	○	●												
	TPG 431	TPGN 220404 TN	1/2	.016	●													
	TPG 432	TPGN 220408 TN	1/2	.031	●													
	TPG 433	TPGN 220412 TN	1/2	.047	●													
	TPG 435	TPGN 220420 TN	1/2	.079	○													
	TPGE 731	TPGE 090204	7/32	.016	●													
	TPGE 732	TPGE 090208	7/32	.031	●													
	TPGD 63Y	TPGB 080202 TN	3/16	.008	○													—
	TPGD 631	TPGB 080204 TN	3/16	.016	○													
	TPGD 73Y	TPGB 090202 TN	7/32	.008	○													
	TPGD 731	TPGB 090204 TN	7/32	.016	○													
	TPGH 6308 F R/L B3	TPGH 080202 F R/L B3	3/16	.008									Ⓛ		Ⓛ			
	TPGH 631 F R/L B3	TPGH 080204 F R/L B3	3/16	.016									Ⓛ		Ⓛ			
	TPGH 631 R/L B3	TPGH 080204 T R/L B3	3/16	.016	L													
	TPGH 7308 F R/L B2	TPGH 090202 F R/L B2	7/32	.008									Ⓛ		Ⓛ			
	TPGH 731 F R/L B2	TPGH 090204 F R/L B2	7/32	.016									Ⓛ		Ⓛ			
	TPGH 731 R/L B2	TPGH 090204 T R/L B2	7/32	.016	R L													
	TPGH 732 R/L B2	TPGH 090208 F R/L B2	7/32	.031									Ⓛ		Ⓛ			
	TPGH 2204 R/L B3	TPGH 110301 T R/L B3	1/4	.004	L													
	TPGH 221 R/L B3	TPGH 110304 T R/L B3	1/4	.016	L													
	TPGH 222 R/L B3	TPGH 110308 T R/L B3	1/4	.031	L													
	TPGH 6308 F R/L F1	TPGH 080202 F R/L F1	3/16	.008									Ⓡ	Ⓡ	Ⓡ			
	TPGH 631 F R/L F1	TPGH 080204 F R/L F1	3/16	.016									Ⓡ	Ⓡ	Ⓡ			
	TPGH 7304 F R/L F1	TPGH 090201 F R/L F1	7/32	.004									Ⓡ					
	TPGH 7308 F R/L F1	TPGH 090202 F R/L F1	7/32	.008									Ⓡ	Ⓡ	Ⓡ			
	TPGH 731 F R/L F1	TPGH 090204 F R/L F1	7/32	.016									Ⓡ	Ⓡ	Ⓡ			
	TPGH 732 F R/L F1	TPGH 090208 F R/L F1	7/32	.031									Ⓡ		Ⓡ			
	TPGH 2208 F R/L F1	TPGH 110302 F R/L F1	1/4	.008									Ⓡ	Ⓡ	Ⓡ			
	TPGH 221 F R/L F1	TPGH 110304 F R/L F1	1/4	.016									Ⓡ	Ⓡ	Ⓡ			
	TPGH 222 F R/L F1	TPGH 110308 F R/L F1	1/4	.031									Ⓡ		Ⓡ			

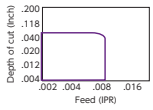
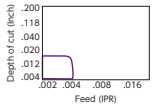
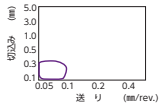
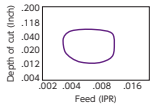
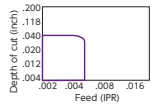
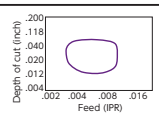
Holders ➡ V30

● : Stock ○ : 1-2 week delivery
R : Stock (Right-hand only) L : Stock (Left-hand only) Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)



Steel	P	● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ● ● ● ●
Hardened Material	H	● ● ● ● ●

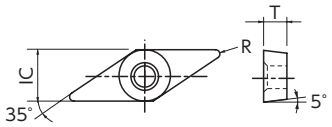
● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Cermet XT3	Cermet C7X	Cermet XN4	PVD Coated Q15	PVD Coated C7Z	Carbide PVD Coated QM3	Carbide PVD Coated DT4	Carbide PVD Coated DM4	Carbide PVD Coated TM4	Carbide PVD Coated VM1	Carbide PVD Coated ZM3	Carbide KM1	CVD CP1	
	TPGH 6308 R/L F1	TPGH 080202 T R/L F1	3/16	.008		Ⓡ			Ⓡ									
	TPGH 631 R/L F1	TPGH 080204 T R/L F1	3/16	.016		Ⓡ			Ⓡ									
	TPGP 7308 R/L F1	TPGH 090202 T R/L F1	7/32	.008		Ⓡ			Ⓡ									
	TPGP 731 R/L F1	TPGHP 090204 T R/L F1	7/32	.016		Ⓡ			Ⓡ									
	TPGP 2208 R/L F1	TPGH 110302 T R/L F1	1/4	.008		Ⓡ			Ⓡ									
	TPGP 221 R/L F1	TPGH 110304 T R/L F1	1/4	.016		Ⓡ			Ⓡ									
	TPGP 222 R/L F1	TPGH 110308 T R/L F1	1/4	.031		Ⓡ			Ⓡ									
	TPGP 7308 R/L FG	TPGH 090202 R/L FG	7/32	.008					Ⓡ				R					
	TPGP 731 R/L FG	TPGH 090204 R/L FG	7/32	.016					Ⓡ				R					
	TPGH 2208 R/L FG	TPGH 110302 R/L FG	1/4	.008					Ⓡ				R					
	TPGH 221 R/L FG	TPGH 110304 R/L FG	1/4	.016					Ⓡ				R					
	TPGP 7308 F R/L K	TPGH 090202 F R/L K	1/4	.008									Ⓛ					
	TPGP 7318 F R/L K	TPGH 090204 F R/L K	1/4	.016									Ⓛ					
	TPGP 7328 F R/L K	TPGH 090208 F R/L K	1/4	.031									Ⓛ					
	TPGR 221 AF1	TPGR 110304 ENBAF1	1/4	.016	●													
	TPGR 221 FNAF1	TPGR 110304 FNAF1	1/4	.016	●													
	TPGR 222 AF1	TPGR 110308 ENBAF1	1/4	.031	●													
	TPGR 321 AF1	TPGR 160304 ENBAF1	3/8	.016	●													
	TPGR 321 FNAF1	TPGR 160304 FNAF1	3/8	.016	●													
	TPGR 322 AF1	TPGR 160308 ENBAF1	3/8	.031	●													
	TPGR 322 FNAF1	TPGR 160308 FNAF1	3/8	.031	●													
	TPGR 431 AF1	TPGR 220404 ENBAF1	1/2	.016	●													
	TPGR 432 AF1	TPGR 220408 ENBAF1	1/2	.031	●													
	TPGS 731 R/L P1	TPGS 090204 R/L P1	7/32	.016	R L													
	TPGR 221 R/L P1	TPGR 110304 R/L P1	1/4	.016	R L													
	TPGR 321 R/L P1	TPGR 160304 R/L P1	3/8	.016	R L													
	TPGR 322 R/L P1	TPGR 160308 R/L P1	3/8	.031	R L													
	TPKN 32 PDTR	TPKN 1603 PDTR	3/8	.012		●												—
	TPKN 43 PDTR	TPKN 2204 PDTR	1/2	.016		●												
	TPM 221	TPMN 110304	1/4	.016			●											—
	TPM 222	TPMN 110308	1/4	.031			●											
	TPM 321	TPMN 160304	3/8	.016			●											
	TPM 322	TPMN 160308	3/8	.031			●											
	TPMR 221 A283	TPMR 110304 A283	1/4	.016			●											
	TPMR 321 A283	TPMR 160304 A283	3/8	.016			●											
	TPMR 322 A305	TPMR 160308 A305	3/8	.031			●											

Holders ➡ V30

35 degree Diamond Positive type (VB..)

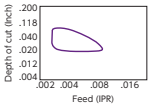
(inch)	IC	T
VB..21	1/4	3/32
VB..22	1/4	1/8
VB..33	3/8	3/16

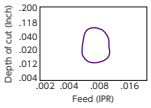


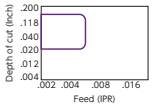
		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●	
Cast Iron	K	●	●		●	●								●
Non-Ferrous Material	N	●	●			●				●	●	●	●	
Heat Resistant Alloy	S						●	●	●	●				
Hardened Material	H						●	●	●					

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
	VBGT 21.508 FNAM3	VBGT 110202 FNXAM3	1/4	.008		●											
	VBGT 21.51 FNAM3	VBGT 110204 FNXAM3	1/4	.016		●											
	VBGT 2208 FNAM3	VBGT 110302 FNXAM3	1/4	.008		●											
	VBGT 221 FNAM3	VBGT 110304 FNXAM3	1/4	.016		●											
	VBGT 3304 AM3	VBGT 160401 AM3	3/8	.004	●												
	VBGT 3308 AM3	VBGT 160402 AM3	3/8	.008	●												
	VBMT 331 AM3	VBMT 160404 ENBAM3	3/8	.016			○										
	VBGT 331 GA	VBGT 160404 ENBGA	3/8	.016	●												
	VBGT 332 GA	VBGT 160408 ENBGA	1/32	.031	●												
	VBGT 333 GA	VBGT 160412 ENBGA	3/8	.047	●												
NEW 	VBGT 3308 FNYL*	VBGT 160402 FNYL	3/8	.008						●		●	○				
	VBGT 331 FNYL	VBGT 160404 FNYL	3/8	.016						●		●	○				
	VBGT 332 FNYL*	VBGT 160408 FNYL	3/8	.031						●		●	○				







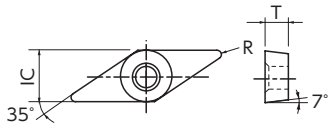
*To be released in August 2015.

Holders ➡ Q24

● : Stock ○ : 1-2 week delivery ■ : While stock lasts Ⓜ : Mirror finish
R : Stock (Right-hand only) L : Stock (Left-hand only) Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)

35 degree Diamond Positive type (VC..)

(inch)	IC	T
VC..21	1/4	3/32
VC..22	1/4	1/8

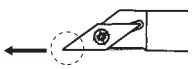


		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●	
Cast Iron	K	●	●		●	●								●
Non-Ferrous Material	N	●	●			●				●	●	●	●	
Heat Resistant Alloy	S						●	●	●	●				
Hardened Material	H						●	●	●					

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
	VCGT 21.508 MCL	VCGT 110202 MCL	1/4	.007						○	○	○	○				
	VCET 2203 ℝUHG	VCET 1103008 ℝUHG	1/4	.003										Ⓡ			
	VCGT 2201 FNAM3	VCGT 110300 FNAM3	1/4	.001						●	●			●	■		
	VCGT 2204M FNAM3	VCGT 110301M FNAM3	1/4	.003						●	●		○	○			
	VCGT 2204 FNAM3	VCGT 110301 FNAM3	1/4	.004										●	○		
	VCGT 2208M FNAM3	VCGT 110302M FNAM3	1/4	.007						●	●		○	○			
	VCGT 2208 FNAM3	VCGT 110302 FNAM3	1/4	.008										●	○		
	VCGT 2208 FNAM3	VCGT 110302 FNXAM3	1/4	.008		○											
	VCGT 221M FNAM3	VCGT 110304M FNAM3	1/4	.015						●	●		○				
	VCGT 221 FNAM3	VCGT 110304 FNAM3	1/4	.016		○											
	VCMT 2208 FNAM3	VCMT 110302 FNAM3	1/4	.008								○					
	VCMT 221 FNAM3	VCMT 110304 FNAM3	1/4	.016								○					
NEW	VCGT 2204M YL	VCGT 110301M YL	1/4	.003								●	○				
	VCGT 2208M YL	VCGT 110302M YL	1/4	.007								●	○				
	VCGT 221M YL	VCGT 110304M YL	1/4	.015								●	○				
	VCGT 2204M CL	VCGT 110301M CL	1/4	.003							●	○	●				
	VCGT 2208M CL	VCGT 110302M CL	1/4	.007							●	○	●				
	VCGT 2201 AZ7**	VCGT 110300 AZ7	1/4	.001						●					○		
	VCGT 2204M AZ7**	VCGT 110301M AZ7	1/4	.003						●					○		
	VCGT 2208M AZ7**	VCGT 110302M AZ7	1/4	.007						●					○		
	VCGT 221M AZ7**	VCGT 110304M AZ7	1/4	.015						●					○		
	VCMT 2204 TℝAS	VCMT 110301 TℝAS	1/4	.004		ⓇⓁ			ⓇⓁ								
	VCMT 2208 TℝAS	VCMT 110302 TℝAS	1/4	.008		ⓇⓁ			ⓇⓁ								
	VCMT 221 TℝAS	VCMT 110304 TℝAS	1/4	.016		ⓇⓁ			ⓇⓁ								
wiper insert	VCGT 2202 ℝS-WP*	TFV 11F ℝ05SX	1/4	.002										R	Ⓡ		
wiper insert	VCGT 2204 ℝS-WP*	TFV 11F ℝ10SX	1/4	.004										R	Ⓡ		
	VCGT 2201 ℝU	VCGT 110300 ℝU	1/4	.001										Ⓡ	Ⓡ		
	VCGT 2204M ℝU	VCGT 110301M ℝU	1/4	.003							Ⓡ						
	VCGT 2204 ℝU	VCGT 110301 ℝU	1/4	.004										Ⓡ	Ⓡ		
	VCGT 2208M ℝU	VCGT 110302M ℝU	1/4	.007							Ⓡ						
	VCGT 2208 ℝU	VCGT 110302 ℝU	1/4	.008										Ⓡ	Ⓡ		
wiper insert	VCGT 2202 ℝU-WP*	TFV 11FℝU05U	1/4	.002										Ⓡ	Ⓡ		
wiper insert	VCGT 2204 ℝU-WP*	TFV 11FℝU10U	1/4	.004										Ⓡ	Ⓡ		
	VCGW 2201 H Ⓜ	VCGW 110300 H	1/4	.001												●	
	VCGW 2204 H Ⓜ	VCGW 110301 H	1/4	.004												●	
	VCGW 2208 H Ⓜ	VCGW 110302 H	1/4	.008												●	





＊Note: NTK WP style inserts have a wiper facet design.
The insert has a 0.2mm (.008") flat on the cutting edge when the insert is set into the toolholder.
The flat on the cutting edge ensures a superior surface when feed rates are increased.
WP style inserts can be used in toolholders: SVAC

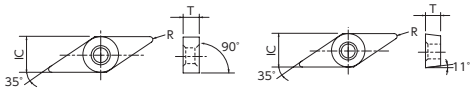
＊＊To be replaced by version which has 0.2mm higher edge.

Holders ➡ Q26 • Q27 • Q28

35 degree Diamond type (VN.. / VP..)

(inch)	IC	T
VN..33	3/8	3/16
VN..43	1/2	3/16

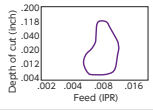
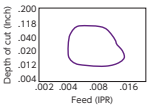
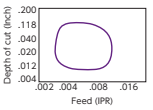
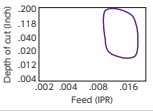
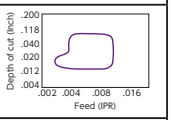
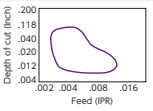
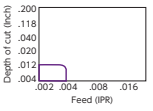
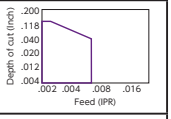
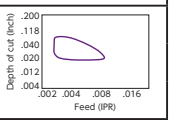
(inch)	IC	T
VP..08	3/16	3/32
VP..22	1/4	1/8



VN_ _ VP_ _

Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ● ●
Hardened Material	H	● ● ●

● : 1st Choice
● : Alternate choice

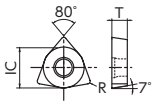
Shape	Item Number	ISO Item Number	IC	R	Cermet XT3	Cermet C7X	Cermet XN4	Cermet PVD Coated Q15	Cermet PVD Coated C7Z	Carbide PVD Coated QM3	Carbide PVD Coated DT4	Carbide PVD Coated DM4	Carbide PVD Coated TM4	Carbide PVD Coated VM1	Carbide PVD Coated ZM3	Carbide KM1	Carbide CVD CP1	
	VNGA 332	VNGA 160408	3/8	.031	●													—
	VNGG 3304 R/L N1	VNGG 160401 R/L N1	3/8	.004	R L													
	VNGG 331 R/L N1	VNGG 160404 R/L N1	3/8	.016	R L													
	VNGG 332 R/L N1	VNGG 160408 R/L N1	3/8	.031	R L													
	VNGG 3308 FNZP	VNGG 160402 FNZP	3/8	.008						●		○						
	VNMP 331 ZP	VNMM 160404 ENBZP	3/8	.016	●													
	VNGG 331 FNZP	VNGG 160404 FNZP	3/8	.016						●		○						
	VNGG 332 FNZP	VNGG 160408 FNZP	3/8	.031						●		○						
	VNMG 331 GE	VNMG 160404 GE	3/8	.016			●											
	VNMG 331 AM1	VNMG 160404 ENAM1	3/8	.016		●			○									
	VNMG 331 AM1	VNMG 160404 ENBAM1	3/8	.016	●		○	○										
	VNMG 331 AM1	VNMG 160404 TNBAM1	3/8	.016						○		○						
	VNMG 332 AM1	VNMG 160408 ENAM1	3/8	.031		●			○									
	VNMG 332 AM1	VNMG 160408 ENBAM1	3/8	.031	●		○	○										
	VNMG 332 AM1	VNMG 160408 TNBAM1	3/8	.031						○		○						
	VNMG 333 AM1	VNMG 160412 ENBAM1	3/8	.047	●													
	VNMG 431 AM1	VNMG 220404 AM1	1/2	.016	●													
	VNMG 432 AM1	VNMG 220408 AM1	1/2	.031	●													
	VNMG 331 G	VNMG 160404 G	3/8	.016													○	
	VNMG 332 G	VNMG 160408 G	3/8	.031													○	
	VNMG 333 G	VNMG 160412 G	3/8	.047													○	
	VNMG 332 WM	VNMG 160408 ENWM	3/8	.031		●			○									
	VNMG 331 ZF1	VNMG 160404 ENBZF1	3/8	.016			●											
	VPET 0802005 R/L KHG	VPET 0802005 R/L KHG	.187	.002									Ⓡ	Ⓡ Ⓛ				
	VPET 0802008 R/L KHG	VPET 0802008 R/L KHG	.187	.003							Ⓡ		Ⓡ	Ⓡ Ⓛ				
	VPET 0802018 R/L KHG	VPET 0802018 R/L KHG	.187	.007									Ⓡ	Ⓡ Ⓛ				
	VPET 080202 R/L KHG	VPET 080202 R/L KHG	.187	.008									Ⓡ	Ⓡ Ⓛ				
	VPET 2202 R/L KHG	VPET 1103005 R/L KHG	1/4	.002									Ⓡ	Ⓡ Ⓛ				
	VPET 2203 R/L KHG	VPET 1103008 R/L KHG	1/4	.003									Ⓡ	Ⓡ Ⓛ				
	VPET 2207 R/L KHG	VPET 1103018 R/L KHG	1/4	.007									Ⓡ	Ⓡ Ⓛ				
	VPET 2208 R/L KHG	VPET 110302 R/L KHG	1/4	.008									Ⓡ	Ⓡ Ⓛ				
	VPET 0802008 R/L UHG	VPET 0802008 R/L UHG	.187	.003							Ⓡ Ⓛ							
	VPGT 2201 FNAM3	VPGT 110300 FNAM3	1/4	.001							●		○					
	VPGT 2204M FNAM3	VPGT 110301M FNAM3	1/4	.003						●	●		○					
	VPGT 2208M FNAM3	VPGT 110302M FNAM3	1/4	.007						●	●		○					

Holders (VN) ➡ F12 • F13
Holders (VP) ➡ Q30 • Q31

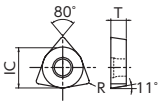
● : Stock ○ : 1-2 week delivery
R : Stock (Right-hand only) L : Stock (Left-hand only) Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)

80 degree Hexagon type (WC.. / WP.. / WN..)

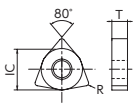
(inch)	IC	T
WC..52	5/32	1/16
WC..21	1/4	3/32
WN..43	1/2	3/16
WP..21	1/4	3/32



WC_ _



WP_ _



WN_ _

		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●	
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●	
Cast Iron	K	●	●		●	●								●
Non-Ferrous Material	N	●	●			●				●	●	●	●	
Heat Resistant Alloy	S						●	●	●	●				
Hardened Material	H						●	●	●					

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	CP1
	WCGT 521 QB	WCGT 020104 QB	5/32	.016		○											
	WCGT 21.504 FNAM3	WCGT 040201 FNXAM3	1/4	.004		●											
	WCGT 21.508 FNAM3	WCGT 040202 FNXAM3	1/4	.008		●											
	WCGT 21.51 FNAM3	WCGT 040204 FNXAM3	1/4	.016		●											
	WNMG 432 G	WNMG 080408 G	1/2	.031													○
	WNMG 433 G	WNMG 080412 G	1/2	.047													○
	WNMG 432 WR	WNMG 080408 ENWR	1/2	.031		●	●		○								
	WNMG 432 WV	WNMG 080408 ENWV	1/2	.031		●			○								
	WNMG 432 Z5	WNMG 080408 TNBZ5	1/2	.031						○		○					
	WNMG 433 Z5	WNMG 080412 TNBZ5	1/2	.047						○		○					
	WNGG 431 FNZP	WNGG 080404 FNZP	1/2	.016						●		●			○		
	WNGG 432 FNZP	WNGG 080408 FNZP	1/2	.031						●		●			○		
NEW 	WNGG 431 FNUL	WNGG 080404 FNUL	1/2	.016								●	○				
	WNGG 432 FNUL	WNGG 080408 FNUL	1/2	.031								●	○				
	WPGT 21.504 FNAM3	WPGT 040201 FNXAM3	1/4	.004		●											
	WPGT 21.508 FNAM3	WPGT 040202 FNXAM3	1/4	.008		●											
	WPGT 21.51 FNAM3	WPGT 040204 FNXAM3	1/4	.016		●											

Holders (WN) ➡ F15
Boring bars (WN) ➡ G6

MEMO

F



General Turning Toolholders

- Holder Identification System····· F2
- Selection Guide ····· F4
- For CN.. Inserts ····· F6
- For DN.. Inserts ····· F8
- For SN.. Inserts ·····F10
- For VN.. Inserts ·····F12
- For TN.. Inserts ·····F14
- For WN.. Inserts·····F15
- For RN.. Inserts ·····F16
- For RCGX / RPGX.. Inserts ·····F17
- For CDH.. Inserts ·····F20

General Turning Toolholders

Holder Identification System

① Clamping System

B, C, V	Clamp-on
W	Multi-clamp
P	Lever-lock
H	Bolt-clamp
S	Screw-on

② Insert Shape

C	D	R	S
80° Diamond	55° Diamond	Round	Square

T	V	W
Triangluar	35° Diamond	Trigon

③ Approach Angle

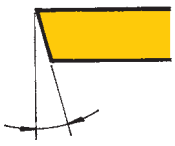
A	B	D	F	G
91°	75°	45°	91°	91°

H	J	K	L	N
107° 30′	93°	75°	95°	62° 30′

P	R	S	V	X
117° 30′	75°	45°	72° 30′	Special Design

①	②	③	④	⑤	⑥	⑦	⑧
C	C	L	N	R	16	– 5	D

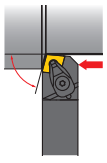
④ Insert Relief Angle



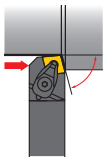
N	0°
B	5°
C	7°
P	11°
D	15°
E	20°

⑤ Hand of Tool

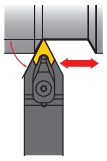
R



L

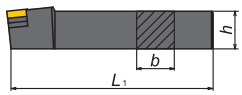


N



⑥ Shank Size [Height (*h*) and Width (*b*)] (inch)

	06	08	10	12	16	20	24	85
h	.375	.500	.625	.750	1.000	1.250	1.500	1.250
b	.375	.500	.625	.750	1.000	1.250	1.500	1.000



In case of $b = h$, the number will represent the number of sixteeths of b and h.

In case of $b \neq h$, the first digit represents the number of eighths of b, and the second digit represents the number of quarters of h.

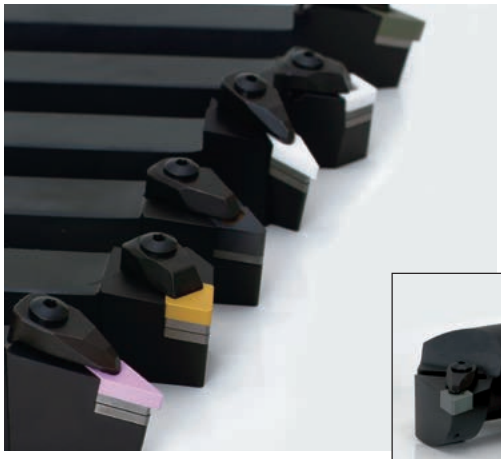
⑦ Insert Size

IC (inch)	1/4	3/8	1/2	5/8	3/4	1
T	2	3	4	5	6	8
S R	2	3	4	5	6	8
W	2	3	4	5	6	
80° C		3	4	5	6	8
55° D		3	4	5	6	8
35° V	2	3				

⑧ Length of toolholder (L_1) (inch)

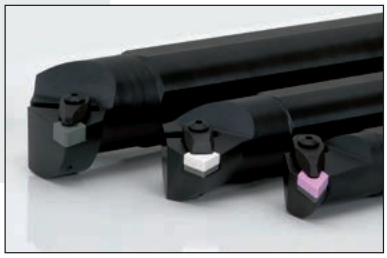
B	C	D	E
4.500	5.000	6.000	7.000

Multi Clamp Toolholders

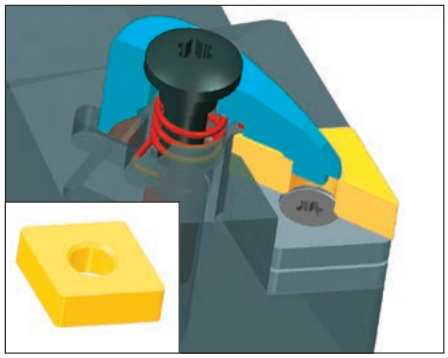


Features

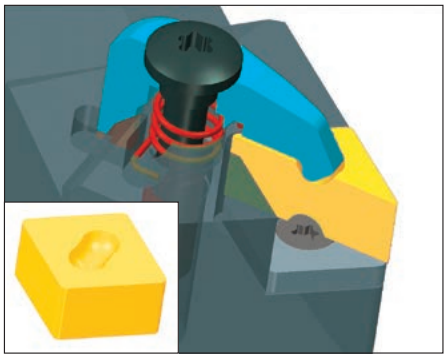
- *Three clamping configurations available with one toolholder just by changing a clamp*
- *Clamp screw also accessible from bottom of the toolholder Dramatically improved accessibility when using toolholder up-side down*



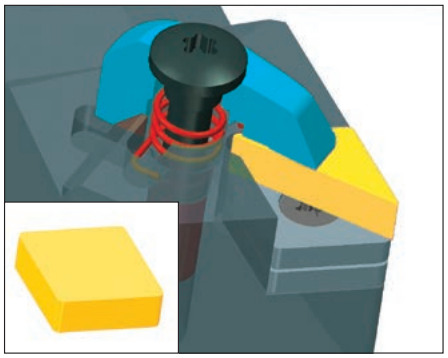
■ Double-clamp type



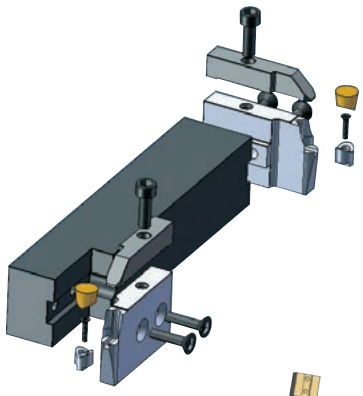
■ Dimple-clamp type



■ Clamp-on type



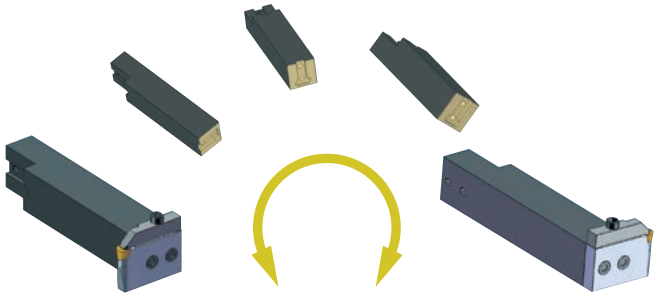
BRV Toolholder System



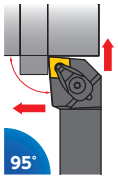
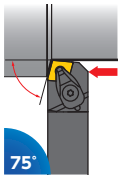
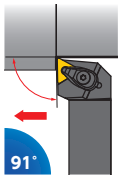
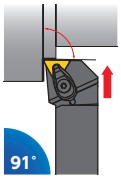
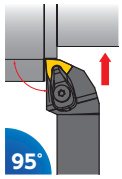
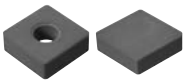
Features

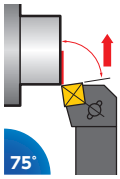
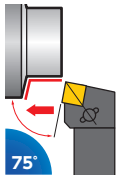
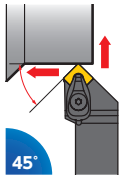
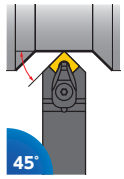
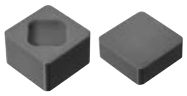
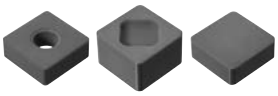
- *BRV toolholder is a modular tooling system designed for ceramic V-bottom inserts for profiling*
  This system provides excellent index repeatability and rigid clamping
- *The BRV toolholder can be used in four configurations to cut the cost for preparing separate toolholders*

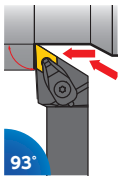
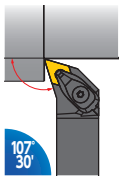
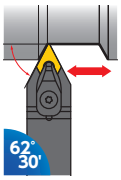
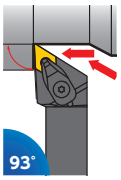
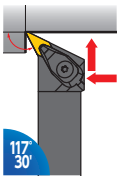
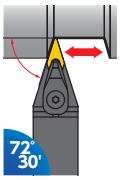
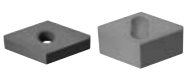


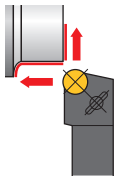
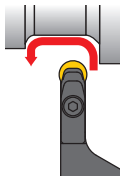
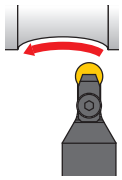
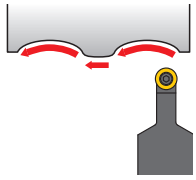


For General Turning

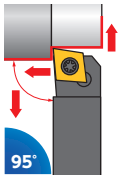
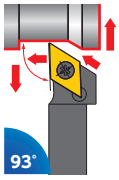
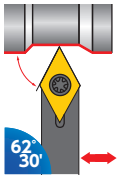
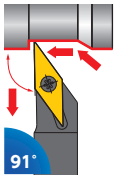
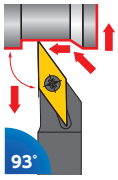
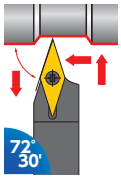
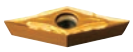
Lead Angle		95°	75° (Using 100° Corner)	91°	91°	95°
Tooling						
Insert shape		CNG / CNGX / CNGA	CNG / CNGA	TNG / TNGA		WNGA
						
Perfect for Ceramic Insert	Multi Clamp	WCLN ➡F6	WCBN ➡F7	WTGN ➡F14	WTFN ➡F14	WWLN WWLN-2 ➡F15
	Clamp On	CCLN ➡F6				
For Insert in General	Lever Lock	PCLN ➡Q37				

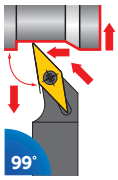
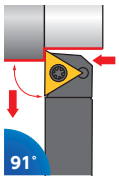
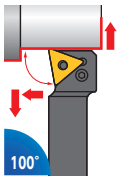
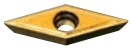
Lead Angle		75°	75°	45°	45°
Tooling					
Insert shape		SNG / SNGX		SNG / SNGX / SNGA	
					
Perfect for Ceramic Insert	Multi Clamp			WSSN ➡F11	WSDN ➡F11
	Clamp On	CSKN ➡F10	CSRN ➡F10	CSSN ➡F10	CSDN ➡F11

Lead Angle		93°	107° 30'	62° 30'	93°	117° 30'	72° 30'
Tooling							
Insert shape		DNGA / DNGX			VNGA / VNGX		
							
Perfect for Ceramic Insert	Multi Clamp	WDJN ➡F8	WDHN ➡F8	WDNN ➡F9	WVJN ➡F12	WVPN ➡F12	WVVN ➡F13

Lead Angle		–	–	–	–
Tooling					
Insert shape		RNG 	RCGX / RPGX 		CDH 
Perfect for Ceramic Insert	Clamp On	CRGN ➡F16	VRAO ➡F18	VRAON ➡F19	
	BRV		BRV ➡F17		
	Screw On				HRCD ➡F20

For Swiss-type Lathes (With no offset)

Lead Angle		95°	93°	62° 30'	91°	93°	72° 30'
Tooling							
Insert shape		CC.T / CC.W 	DC.T / DC.W 	DC.T / DC.W	VC.T / VC.W	VB.T / VC.T / VC.W 	VC.T / VC.W
No offset	Screw On	SCLC ➡Q10	SDJC ➡Q16	SDNCN ➡Q16	SVAC-N ➡Q25・26	SVJC ➡Q26 SVJB ➡Q24	SVVCR-N ➡Q27

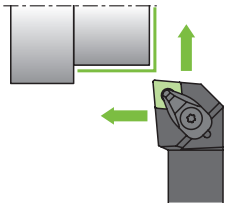
Lead Angle		99°	91°	100°
Tooling				
Insert shape		VP.T 	TC.T / TC.W 	TN.. 
No offset	Screw On	SVXP-N ➡Q31	STAC-N ➡Q33	PTXN ➡Q34

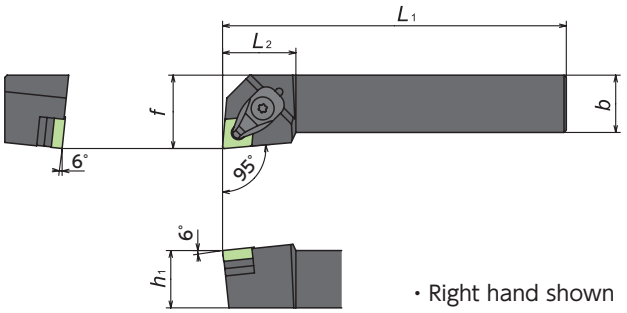
● *Coolant through, Y-axis and DS-holders are also available!*



CN.. Inserts

WCLN





・Right hand shown

● Inch / Metric Holders

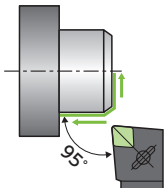
Item Number	Stock		h		b		L_1		h_1		f		L_2		Insert*
	R	L	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	
WCLNR/L 16-4D	●	●	1.00	—	1.00	—	6.00	—	1.00	—	1.25	—	1.25	—	CNGA 43 (CNGA 45) (CNG 43) (CNG 45) (CNGX 43) (CNGX 45)
WCLNR/L 20-4D	●	●	1.25	—	1.25	—	6.00	—	1.25	—	1.50	—	1.25	—	
WCLNR/L 2525M12	○	○	—	25	—	25	—	150	—	25	—	32	—	32	
WCLNR/L 3225P12	○	○	—	32	—	25	—	170	—	32	—	32	—	32	

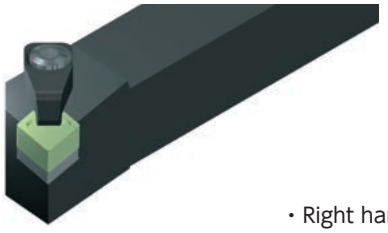
● Spare Parts

	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	CNGA 43	DC6CN	ACN423×2	AOS-6*30W	LLR-T20	FSS15-3.0*12	LLR-T10	ASGL6-D
	CNGA 45		ACN423×1					
	CNG 43	TC6CN (OP)	ACN423×2					
	CNG 45		ACN423×1					
	CNGX 43	HC6CN (OP)	ACN423×2					
	CNGX 45		ACN423×1					

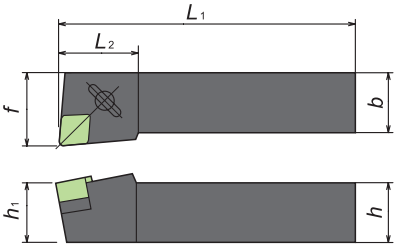
Inserts (CNG) ➡ E3
Inserts (CNGA) ➡ E4・E5・E23・E31
Inserts (CNGX) ➡ E6

CCLN





・Right hand shown



● Inch Holders

Item Number	Stock		Dimensions (inch)						Insert*
	R	L	h	b	L_1	h_1	f	L_2	
CCLNR/L 164 CX	●	●	1.00	1.00	6.00	1.00	1.25	1.34	CNGX 45 (CNGX 43) (CNG 45) (CNG 43)
CCLNR/L 204 CX	●	●	1.25	1.25	6.00	1.25	1.50	1.34	

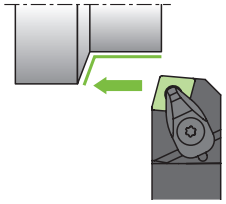
● Spare Parts

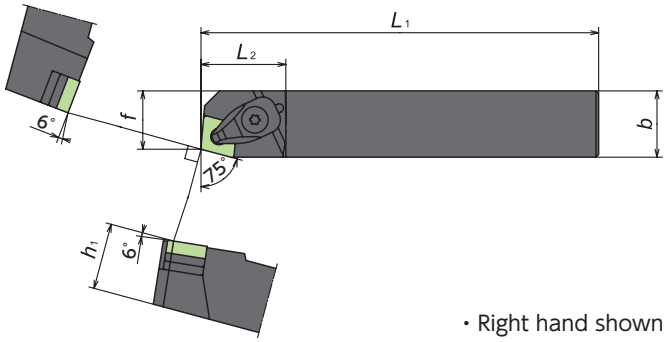
	Insert	Clamp	Blade	Shim	Shim Screw	Wrench
						
	CNGX 43	2415	—	ICSN454 (OP)	1160	LW-4
Standard	CNGX 45			ICSN434		
	CNG 43	2417 (OP)	9414 (OP)	ICSN454 (OP)		
	CNG 45			INSN434		

● : Stock　○ : 1-2 week delivery　OP : Optional parts

Inserts (CNG) ➡ E3
Inserts (CNGX) ➡ E6

WCBN





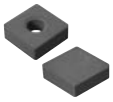
・Right hand shown

Inch / Metric Holders

Item Number	Stock R	Stock L	h (inch)	h (mm)	b (inch)	b (mm)	L_1 (inch)	L_1 (mm)	h_1 (inch)	h_1 (mm)	f (inch)	f (mm)	L_2 (inch)	L_2 (mm)	Insert*
WCBNR/L 16-4D	●*	●*	1.00	—	1.00	—	6.00	—	1.00	—	.88	—	1.25	—	CNGA 43 (CNGA 45) (CNG 43) (CNG 45)
WCBNR/L 20-4D			1.25	—	1.25	—	6.00	—	1.25	—	1.13	—	1.25	—	
WCBNR/L 2525M12	○	○	—	25	—	25	—	150	—	25	—	22	—	32	

＊To be released in September 2015.

Spare Parts

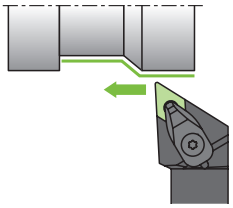
	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	CNGA 43	DC6CN	ACN423×2	AOS-6*30W	LLR-T20	FSS15-3.0*12	LLR-T10	ASGL6-D
	CNGA 45		ACN423×1					
	CNG 43	TC6CN (OP)	ACN423×2					
	CNG 45		ACN423×1					

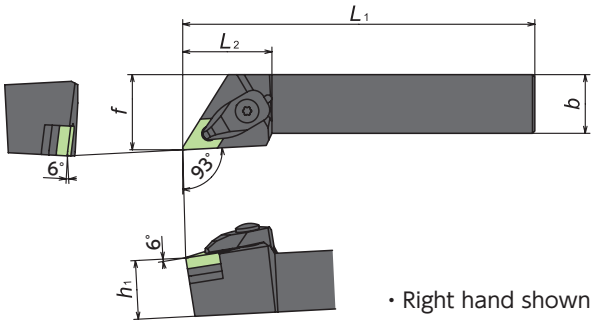
Inserts (CNG) ➡ E3
Inserts (CNGA) ➡ E4・E5・E23・E31

＊ Optional spare parts are required to use the inserts in parentheses. See spare parts lists for detail.

DN.. Inserts

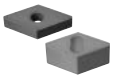
WDJN



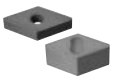
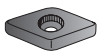


・Right hand shown

● Inch / Metric Holders

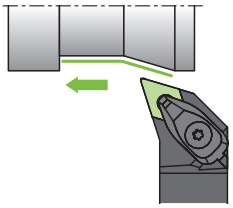
Item Number	Stock		h		b		L_1		h_1		f		L_2		Insert*
	R	L	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	
WDJNR/L 16-4D	●	●	1.00	—	1.00	—	6.00	—	1.00	—	1.25	—	1.50	—	DNGA 43 (DNGA 45) (DNGX 45) 
WDJNR/L 20-4D	●	●	1.25	—	1.25	—	6.00	—	1.25	—	1.50	—	1.50	—	
WDJNR/L 2525M15	○	○	—	25	—	25	—	150	—	25	—	32	—	38	
WDJNR/L 3225P15	○	○	—	32	—	25	—	170	—	32	—	32	—	38	

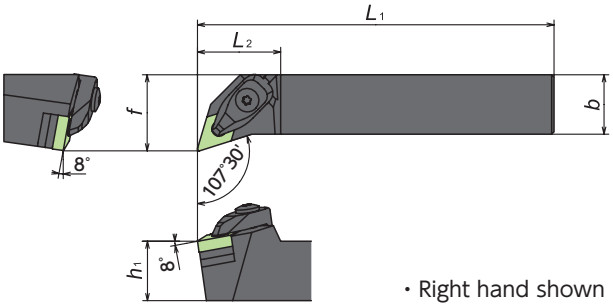
● Spare Parts

	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	DNGA 43	DC6DN	ADN423×2	AOS-6*30W	LLR-T20	FSS15-3.0*12	LLR-T10	ASGL6-D
	DNGA 45		ADN423×1					
	DNGX 45	HC6DN (OP)	ADN423×1					

Inserts (DNGA) ➡ E7・E24
Inserts (DNGX) ➡ E8・E36・E37

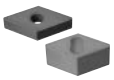
WDHN





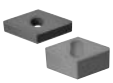
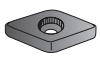
・Right hand shown

● Inch / Metric Holders

Item Number	Stock		h		b		L_1		h_1		f		L_2		Insert*
	R	L	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	
WDHNR/L 16-4D	●*	●*	1.00	—	1.25	—	6.00	—	1.00	—	1.25	—	1.38	—	DNGA 43 (DNGA 45) (DNGX 45) 
WDHNR/L 20-4D			1.00	—	1.25	—	6.00	—	1.25	—	1.50	—	1.38	—	
WDHNR/L 2525M15	○	○	—	25	—	25	—	150	—	25	—	32	—	35	

＊To be released in September 2015.

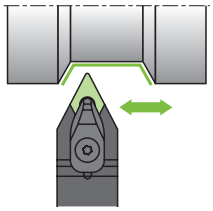
● Spare Parts

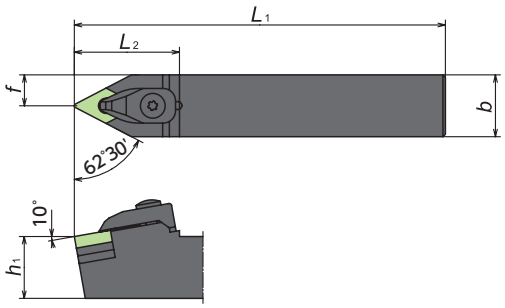
	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	DNGA 43	DC6DN	ADN423×2	AOS-6*30W	LLR-T20	FSS15-3.0*12	LLR-T10	ASGL6-D
	DNGA 45		ADN423×1					
	DNGX 45	HC6DN (OP)	ADN423×1					

● : Stock　○ : 1-2 week delivery　OP : Optional parts

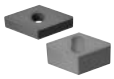
Inserts (DNGA) ➡ E7・E24
Inserts (DNGX) ➡ E8・E36・E37

WDNN



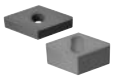


Inch / Metric Holders

Item Number	Stock	h (inch)	h (mm)	b (inch)	b (mm)	L_1 (inch)	L_1 (mm)	h_1 (inch)	h_1 (mm)	f (inch)	f (mm)	L_2 (inch)	L_2 (mm)	Insert*
WDNNN 16-4D	●*	1.00	—	1.00	—	6.00	—	1.00	—	.500	—	1.67	—	DNGA 43 (DNGA 45) (DNGX 45) 
WDNNN 20-4D		1.25	—	1.25	—	6.00	—	1.25	—	.625	—	1.67	—	
WDNNN 2525M15	○	—	25	—	25	—	150	—	25	—	12.5	—	42.5	

＊To be released in September 2015.

Spare Parts

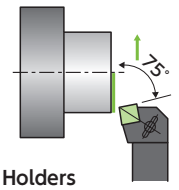
	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	**DNGA 43**	DC6DN	ADN423×2	AOS-6*30W	LLR-T20	FSS15-3.0*12	LLR-T10	ASGL6-D
	DNGA 45		ADN423×1					
	DNGX 45	HC6DN (OP)	ADN423×1					

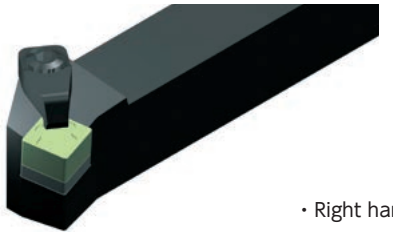
Inserts (DNGA) ➡ E7・E24
Inserts (DNGX) ➡ E8・E36・E37

＊ Optional spare parts are required to use the inserts in parentheses. See spare parts lists for detail.

SN.. Inserts

CSKN





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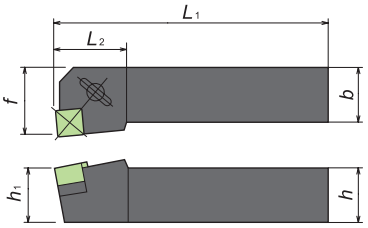
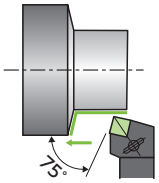
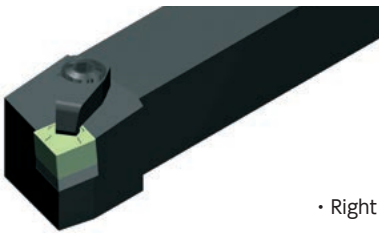


● Inch Holders

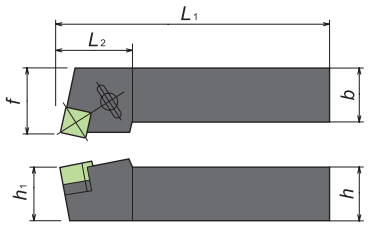
Item Number	Stock		Dimensions (inch)						Insert*
	R	L	h	b	L_1	h_1	f	L_2	
CSKNR/L 164 CX	●	●	1.00	1.00	6.00	1.00	1.25	1.34	SNGX 45 (SNG 43) (SNG 45)
CSKNR/L 204 CX	●	●	1.25	1.25	6.00	1.25	1.50	1.34	
CSKNR/L 165 CX	●	●	1.00	1.00	6.00	1.00	1.25	1.34	SNGX 55 (SNG 55)
CSKNR/L 205 CX	●	●	1.25	1.25	6.00	1.25	1.50	1.34	

CSRN





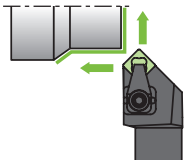
・Right hand shown



● Inch Holders

Item Number	Stock		Dimensions (inch)						Insert*
	R	L	h	b	L_1	h_1	f	L_2	
CSRNR/L 164 CX	●	●	1.00	1.00	6.00	1.00	1.13	1.34	SNGX 45 (SNG 43) (SNG 45)
CSRNR/L 204 CX	●	●	1.25	1.25	6.00	1.25	1.38	1.34	
CSRNR/L 165 CX	●	●	1.00	1.00	6.00	1.00	1.10	1.50	SNGX 55 (SNG 55)
CSRNR/L 205 CX	●	●	1.25	1.25	6.00	1.25	1.35	1.50	
CSRNR/L 245 CX	●	●	1.50	1.50	8.00	1.50	1.75	1.65	

CSSN





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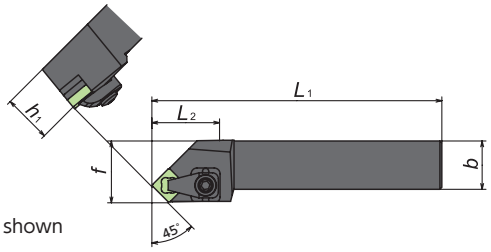
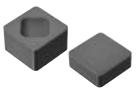


● Inch Holders

Item Number	Stock		Dimensions (inch)						Insert*
	R	L	h	b	L_1	h_1	L_2	f	
CSSNR/L 245 CD	●	●	1.50	1.50	6.00	1.50	2.00	1.653	SNGX 55 (SNG 55)

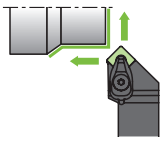
● Spare Parts

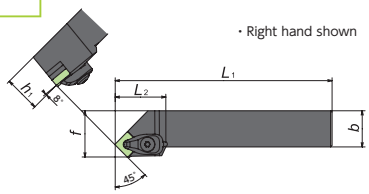
	Insert	Clamp	Blade	Shim	Shim Screw	Wrench
						
Standard	SNGX 45	2415	—	ISSN 434	1160	LW-4
	SNG 43	2417 (OP)	9414 (OP)	ISSN 454 (OP)		
	SNG 45			ISSN 434		
Standard	SNGX 55	2415	—	ISSN534	1180	
	SNG 55	2417 (OP)	9414 (OP)			

● : Stock ○ : 1-2 week delivery OP : Optional parts

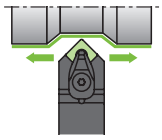
Inserts (SNG) ➡ E13・E40
Inserts (SNGX) ➡ E15

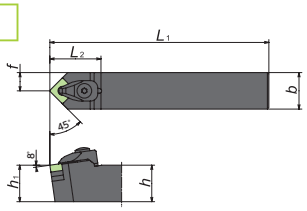
WSSN





WSDN





● Inch / Metric Holders

Item Number	Stock		h		b		L_1		h_1		f		L_2		Insert*
	R	L	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
WSSN[R/L] 16-4D	●*	●*	1.00	—	1.00	—	6.00	—	1.00	—	1.25	—	1.38	—	SNGA 43 (SNGA 45) (SNG 43) (SNG 45) (SNGX 45)
WSSN[R/L] 20-4D			1.25	—	1.25	—	6.00	—	1.25	—	1.50	—	1.38	—	
WSSN[R/L] 2525M12	○	○	—	25	—	25	—	150	—	25	—	32	—	35	

Item Number	Stock	h		b		L_1		h_1		f		L_2		Insert*
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
WSDNN 16-4D	●*	1.00	—	1.00	—	6.00	—	1.00	—	.500	—	1.42	—	SNGA 43 (SNGA 45) (SNG 43) (SNG 45) (SNGX 45)
WSDNN 20-4D		1.25	—	1.25	—	6.00	—	1.25	—	.625	—	1.42	—	
WSDNN 2525M12	○	—	25	—	25	—	150	—	25	—	12.5	—	35	
WSDNN 3225P12	○	—	32	—	25	—	170	—	32	—	12.5	—	35	

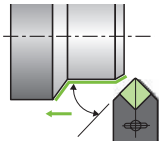
● Spare Parts

	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	SNGA 43	DC6CN	ASN423×2	AOS-6*30W	LLR-T20	FSS15-3.0*12	LLR-T10	ASGL6-D
	SNGA 45		ASN423×1					
	SNG 43	TC6CN (OP)	ASN423×2					
	SNG 45		ASN423×1					
	SNGX 45	HC6SN (OP)	ASN423×1					

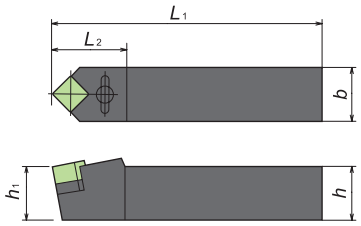
*To be released in September 2015.

Inserts (SNG) ➡ E13・E40
Inserts (SNGA) ➡ E14・E25・E40
Inserts (SNGX) ➡ E15

CSDN



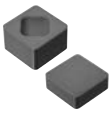




● Inch Holders

Item Number	Stock	Dimensions (inch)					Insert*
		h	b	L_1	h_1	L_2	
CSDNN 164 CX	●	1.00	1.00	6.00	1.00	1.65	SNGX 45 (SNG 43) (SNG 45)
CSDNN 204 CX	●	1.25	1.25	6.00	1.25	1.65	
CSDNN 165 CX	●	1.00	1.00	6.00	1.00	1.65	SNGX 55 (SNG 55)
CSDNN 205 CX	●	1.25	1.25	6.00	1.25	1.65	

● Spare Parts

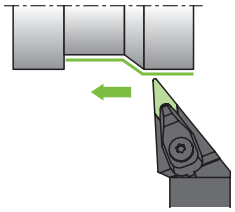
	Insert	Clamp	Blade	Shim	Shim Screw	Wrench
						
Standard	SNGX 45	2415	—	ISSN 434	1160	LW-4
	SNG 43	2417 (OP)	9414 (OP)	ISSN 454 (OP)		
	SNG 45			ISSN 434		
Standard	SNGX 55	2415	—	ISSN534	1180	
	SNG 55	2417 (OP)	9414 (OP)			

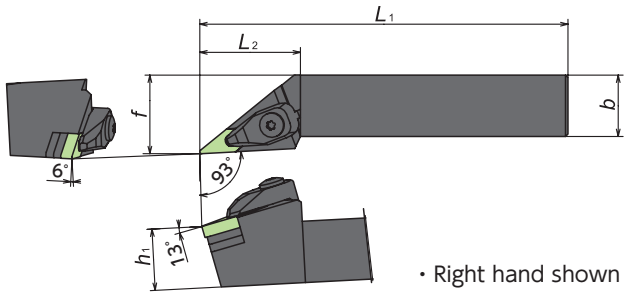
Inserts (SNG) ➡ E13・E40
Inserts (SNGX) ➡ E15

* Optional spare parts are required to use the inserts in parentheses. See spare parts lists for detail.

VN.. Inserts

WVJN



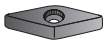


・Right hand shown

● Inch / Metric Holders

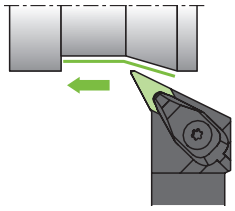
Item Number	Stock		h		b		L_1		h_1		f		L_2		Insert*
	R	L	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
WVJNR/L 16-3D	●	●	1.00	—	1.00	—	6.00	—	1.00	—	1.25	—	1.61	—	VNGA 33 (VNGA 35) (VNGX 35)
WVJNR/L 20-3D	●	●	1.25	—	1.25	—	6.00	—	1.25	—	1.50	—	1.61	—	
WVJNR/L 2525M16	○	○	—	25	—	25	—	150	—	25	—	32	—	41	
WVJNR/L 3225P16	○	○	—	32	—	25	—	170	—	32	—	32	—	41	

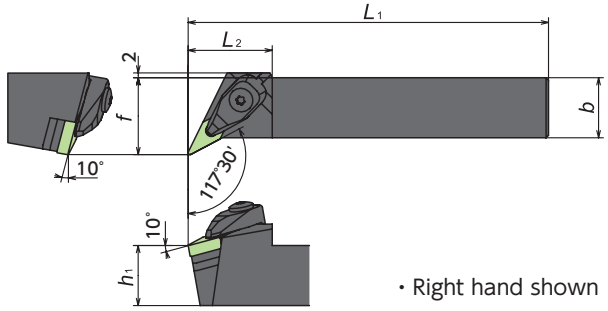
● Spare Parts

	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	VNGA 33	DC6VN	AVN323×2	AOS-6*30W	LLR-T20	FSS15-3.0*12	LLR-T10	ASGL6-D
	VNGA 35		AVN323×1					
	VNGX 35	HC6VN (OP)	AVN323×1					

Inserts (VNGA) ➡ E20・E27・E50

WVPN





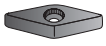
・Right hand shown

● Inch / Metric Holders

Item Number	Stock		h		b		L_1		h_1		f		L_2		Insert*
	R	L	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
WVPNR/L 16-3D	●*	●*	1.00	—	1.00	—	6.00	—	1.00	—	1.25	—	1.38	—	VNGA 33 (VNGA 35) (VNGX 35)
WVPNR/L 20-3D			1.25	—	1.25	—	6.00	—	1.25	—	1.50	—	1.38	—	
WVPNR/L 2525M16	○	○	—	25	—	25	—	150	—	25	—	32	—	35	

＊To be released in September 2015.

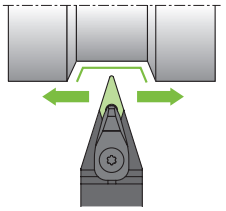
● Spare Parts

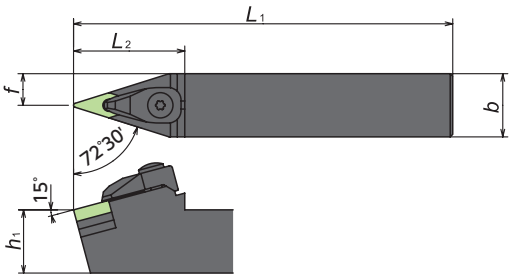
	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	VNGA 33	DC6VN	AVN323×2	AOS-6*30W	LLR-T20	FSS15-3.0*12	LLR-T10	ASGL6-D
	VNGA 35		AVN323×1					
	VNGX 35	HC6VN (OP)	AVN323×1					

● : Stock　○ : 1-2 week delivery　OP : Optional parts

Inserts (VNGA) ➡ E20・E27・E50

WVVN



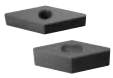
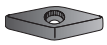


● Inch / Metric Holders

Item Number	Stock	h inch	h mm	b inch	b mm	L_1 inch	L_1 mm	h_1 inch	h_1 mm	f inch	f mm	L_2 inch	L_2 mm	Insert*
WVVNN 16-3D	●*	1.00	—	1.00	—	6.00	—	1.00	—	.500	—	1.73	—	VNGA 33 (VNGA 35) (VNGX 35) 
WVVNN 20-3D		1.25	—	1.25	—	6.00	—	1.25	—	.625	—	1.73	—	
WVVNN 2525M16	○	—	25	—	25	—	150	—	25	—	12.5	—	44	

＊To be released in September 2015.

● Spare Parts

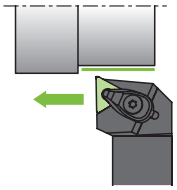
	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	**VNGA 33**	DC6VN	AVN323×2	AOS-6*30W	LLR-T20	FSS15-3.0*12	LLR-T10	ASGL6-D
	VNGA 35		AVN323×1					
	VNGX 35	HC6VN (OP)	AVN323×1					

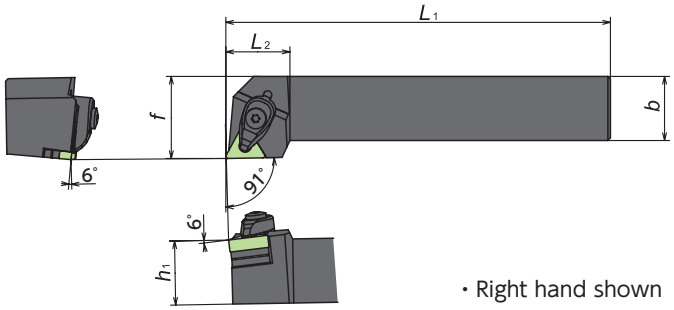
Inserts (VNGA) ➡ **E20 • E27 • E50**

＊ Optional spare parts are required to use the inserts in parentheses. See spare parts lists for detail.

TN.. Inserts

WTGN





・Right hand shown

● Inch / Metric Holders

Item Number	Stock		h		b		L_1		h_1		f		L_2		Insert*
	R	L	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
WTGNR/L 16-3D	●*	●*	1.00	—	1.00	—	6.00	—	1.00	—	1.25	—	1.00	—	TNGA 33 (TNGA 35) (TNG 33) (TNG 35)
WTGNR/L 20-3D			1.25	—	1.25	—	6.00	—	1.25	—	1.50	—	1.00	—	
WTGNR/L 2525M16	○	○	—	25	—	25	—	150	—	25	—	32	—	25	

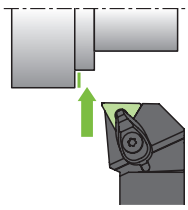
＊To be released in September 2015.

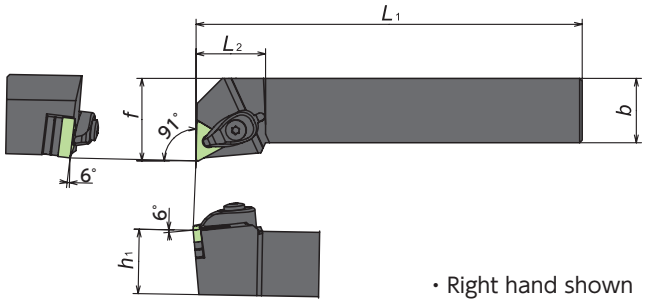
● Spare Parts

	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	TNGA 33	DC5TN	ATN323×2	AOS-5*26W	LLR-T15	FSS15-3.0*12	LLR-T10	ASGL6-D
	TNGA 35		ATN323×1					
	TNG 33	TC5TN (OP)	ATN323×2					
	TNG 35		ATN323×1					

Inserts (TNG) ➡ E16
Inserts (TNGA) ➡ E18・E26・E43・E44・E45

WTFN





・Right hand shown

● Inch / Metric Holders

Item Number	Stock		h		b		L_1		h_1		f		L_2		Insert*
	R	L	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
WTFNR/L 16-3D	●*	●*	1.00	—	1.00	—	6.00	—	1.00	—	1.25	—	1.06	—	TNGA 33 (TNGA 35) (TNG 33) (TNG 35)
WTFNR/L 20-3D			1.25	—	1.25	—	6.00	—	1.25	—	1.50	—	1.06	—	
WTFNR/L 2525M16	○	○	—	25	—	25	—	150	—	25	—	32	—	27	

＊To be released in September 2015.

● Spare Parts

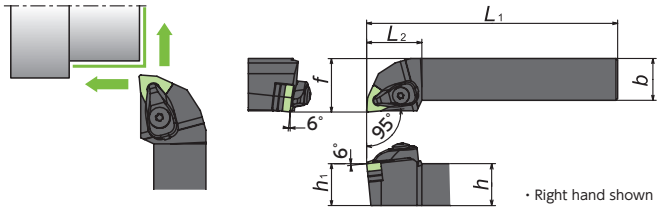
	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	TNGA 33	DC5TN	ATN323×2	AOS-5*26W	LLR-T15	FSS15-3.0*12	LLR-T10	ASGL6-D
	TNGA 35		ATN323×1					
	TNG 33	TC5TN (OP)	ATN323×2					
	TNG 35		ATN323×1					

Inserts (TNG) ➡ E16
Inserts (TNGA) ➡ E18・E26・E43・E44・E45

● : Stock ○ : 1-2 week delivery OP : Optional parts

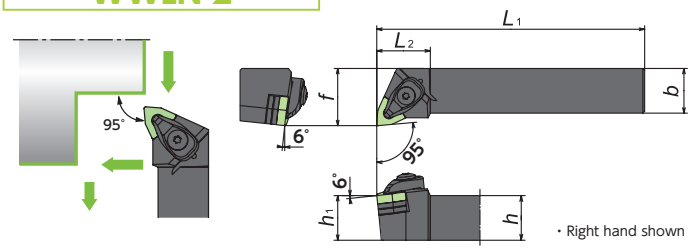
WN.. Inserts

WWLN



・Right hand shown

WWLN-2



・Right hand shown

● Inch / Metric Holders

Item Number	Stock		h		b		L_1		h_1		f		L_2		Insert
	R	L	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
WWLNR/L 16-4D	●*	●*	1.00	—	1.00	—	6.00	—	1.00	—	1.25	—	1.30	—	WNGA 43 (WNGA 45) 
WWLNR/L 20-4D			1.25	—	1.25	—	6.00	—	1.25	—	1.50	—	1.30	—	
WWLNR/L 2525M08	○	○	—	25	—	25	—	150	—	25	—	32	—	33	

Item Number	Stock		h		b		L_1		h_1		f		L_2		Insert
	R	L	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
WWLNR/L 16-4D-2	●*	●*	1.00	—	1.00	—	6.00	—	1.00	—	1.25	—	1.18	—	WNGA 43 (WNGA 45) 
WWLNR/L 20-4D-2			1.25	—	1.25	—	6.00	—	1.25	—	1.50	—	1.18	—	
WWLNR/L 2525M08-2	○	○	—	25	—	25	—	150	—	25	—	32	—	30	

＊To be released in September 2015.

● Spare Parts

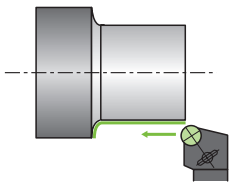
	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	**WNGA 43**	DC6CN	AWN423-W×2	AOS-6*30W	LLR-T20	FSS15-3.0*12	LLR-T10	ASGL6-D
	WNGA 45		AWN423-W×1					

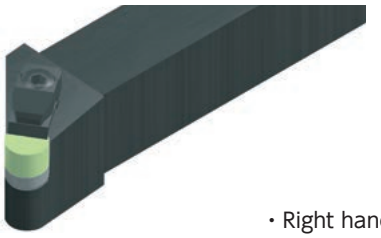
Inserts ➡ E21・E51

＊Optional spare parts are required to use the inserts in parentheses. See spare parts lists for detail.

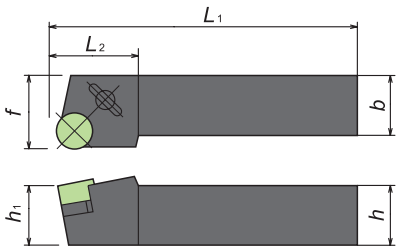
RN.. Inserts

CRGN





・Right hand shown



● Inch Holders

Item Number	Stock		Dimensions (inch)						Insert*
	R	L	*h*	*b*	L_1	h_1	*f*	L_2	
CRGNR/L 164 CD	●	●	1.00	1.00	6.00	1.00	1.25	1.34	RNG 45 (RNG 43)
CRGNR/L 204 CD	●	●	1.25	1.25	6.00	1.25	1.50	1.34	
CRGNR/L 165 CD	●	●	1.00	1.00	6.00	1.00	1.25	1.34	RNG 55
CRGNR/L 205 CD	●	●	1.25	1.25	6.00	1.25	1.50	1.34	
CRGNR/L 206 CD	●	●	1.25	1.25	6.00	1.25	1.50	1.65	RNG 65



● Spare Parts

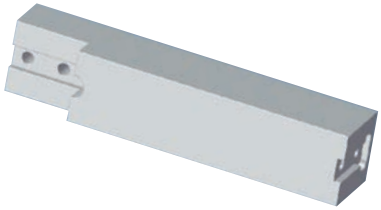
	Insert	Clamp	Blade	Shim	Shim Screw	Wrench
						
Standard	**RNG 45**	2413	9414	IRSN 43	1160	LW-4
	RNG 43			IRSN 45 (OP)		
Standard	**RNG 55**			IRSN 53	1180	
Standard	**RNG 65**	2417		3919	1182	

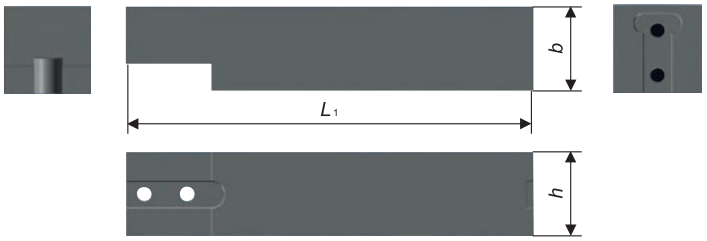
Inserts ➡ E10・E25

● : Stock ○ : 1-2 week delivery OP : Optional parts

RC.. / RP.. Inserts

BRV

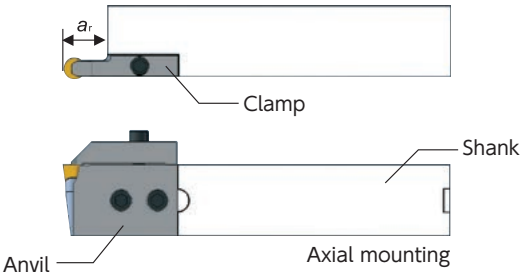


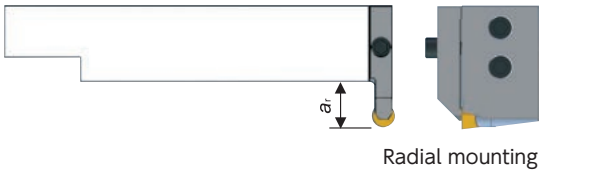


Toolholder body

Item Number	Stock	Dimensions (inch)			Anvil Screw	Stock
		h	*b*	L_1		
BS 20	●	1.25	1.38	5.5	BAS 20	●

Note: Shank comes with anvil screws. - Order anvil separately.





・Right hand shown

Anvils and Parts (Order each part separately)

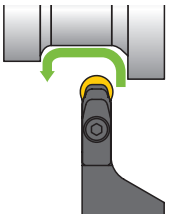
Shank	Anvil	Stock		Dimensions (inch)	Insert		Clamp	Shim	Clamp Screw	Shim Screw
		R	L	a_r						
BS 20	BRVR 6020-2V	●		.750	**RCGX 23** **RPGX 23**		BRCR-2V	BN-2V	BRCS 2V	BNS-2V
	BRVR 8020-3V	●		1.000	**RCGX 35** **RPGX 35**		BRCN-3V	BN-3V	BRCS 3V	BNS-3V
	BRVR 9020-4V	●		1.125	**RCGX 45** **RPGX 45**		BRCN-4V	BN-4V	BRCS 4V	BNS-4V
	BRVL 6020-2V		○	.750	**RCGX 23** **RPGX 23**		BRCL-2V	BN-2V	BRCS 2V	BNS-2V
	BRVL 8020-3V		●	1.000	**RCGX 35** **RPGX 35**		BRCN-3V	BN-3V	BRCS 3V	BNS-3V
	BRVL 9020-4V		●	1.125	**RCGX 45** **RPGX 45**		BRCN-4V	BN-4V	BRCS 4V	BNS-4V

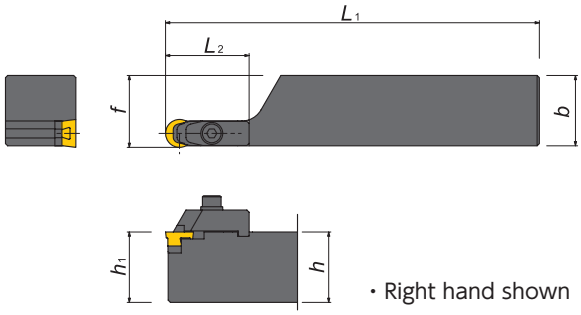
Inserts (RCGX) ➡ E9
Inserts (RPGX) ➡ E11

* Optional spare parts are required to use the inserts in parentheses. See spare parts lists for detail.

RC.. / RP.. Inserts

VRAOR/L





・Right hand shown

● Inch Holders

Item Number	Stock		Dimensions (inch)					Insert
	R	L	*h*	*b*	L_1	h_1	L_2	
VRAOR/L 16-2D	●	●	1.00	1.00	6.00	1.00	1.00	RCGX 102 RCGX 23 RCGX 25 RPGX 23 RPGX 25
VRAOR/L 20-2D	●	●	1.25	1.25	6.00	1.25	1.00	
VRAOR/L 16-3D	●	●	1.00	1.00	6.00	1.00	1.25	RCGX 103 RCGX 35 RPGX 35
VRAOR/L 20-3D	●	●	1.25	1.25	6.00	1.25	1.25	
VRAOR/L 24-3E	●	●	1.50	1.50	7.00	1.50	1.25	
VRAOR/L 16-4D	●	●	1.00	1.00	6.00	1.00	1.50	RCGX 104 RCGX 45 RPGX 45
VRAOR/L 20-4D	●	●	1.25	1.25	6.00	1.25	1.50	
VRAOR/L 24-4E	●	●	1.50	1.50	7.00	1.50	1.50	



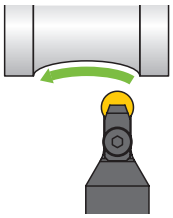
● Spare Parts

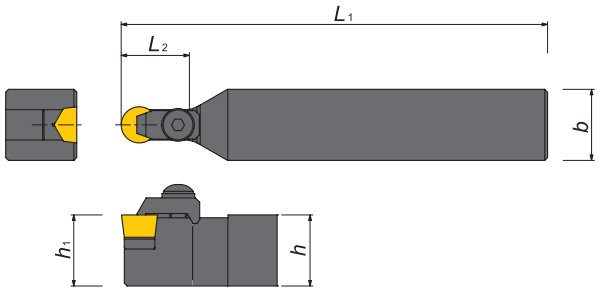
Parts / Toolholder	Clamp	Shim	Clamp Screw	Shim Screw
				
VRAOR/L 16-2D	CL2RV	SM2RV(RCGX10. / R.GX.5) SM2RVS(R.GX23) (OP)	SC40F-16	SC02C-08
VRAOR/L 20-2D				
VRAOR/L 16-3D	CL3RV	SM3RV	SC10F-10	SC05C-08
VRAOR/L 20-3D				SC05C-10
VRAOR/L 24-3E				
VRAOR/L 16-4D	CL4RV	SM4RV	SC40F-12	SC06C-08
VRAOR/L 20-4D				SC06C-10
VRAOR/L 24-4E				

Inserts(RCGX) ➡ E9
Inserts(RPGX) ➡ E11

● : Stock ○ : 1-2 week delivery OP : Optional parts

VRAON





Inch Holders

Item Number	Stock	Dimensions (inch)				Insert
		h	b	L_1	L_2	
VRAON 16-2D	●	1.00	1.00	6.00	1.00	RCGX 102 RCGX 23 RCGX 25 RPGX 23 RPGX 25
VRAON 20-2D	●	1.25	1.25	6.00	1.00	
VRAON 16-3D	●	1.00	1.00	6.00	1.25	RCGX 103 RCGX 35 RPGX 35
VRAON 20-3D	●	1.25	1.25	6.00	1.25	
VRAON 24-3E	●	1.50	1.50	7.00	1.25	
VRAON 16-4D	●	1.00	1.00	6.00	1.50	RCGX 104 RCGX 45 RPGX 45
VRAON 20-4D	●	1.25	1.25	6.00	1.50	
VRAON 24-4E	●	1.50	1.50	7.00	1.50	
VRAON 20-5D	●	1.25	1.25	6.00	1.50	RCGX 105
VRAON 24-5E	●	1.50	1.50	7.00	1.50	
VRAON 20-6F	●	1.25	1.25	8.00	1.75	RCGX 106
VRAON 24-6F	●	1.50	1.50	8.00	1.75	
VRAON 20-8F	●	1.25	1.25	8.00	2.00	RCGX 108
VRAON 24-8F	●	1.50	1.50	8.00	2.00	





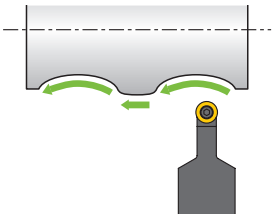
Spare Parts

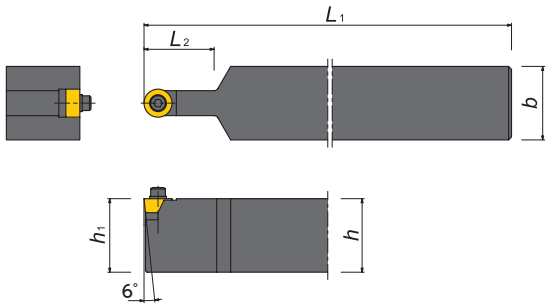
Parts / Toolholder	Clamp	Shim	Clamp Screw	Shim Screw
				
VRAON 16-2D	CL2RV	SM2RV (RCGX10. / R.GX.5) SM2RVS (R.GX23) (OP)	SC40F-16	SC02C-08
VRAON 20-2D				
VRAON 16-3D	CL3RV	SM3RV	SC10F-10	SC05C-08
VRAON 20-3D				SC05C-10
VRAON 24-3E				
VRAON 16-4D	CL4RV	SM4RV	SC40F-12	SC06C-08
VRAON 20-4D				SC06C-10
VRAON 24-4E				
VRAON 20-5D	CL5RV	SM5RV	SC50F-16	SC08C-10
VRAON 24-5E				
VRAON 20-6F	CL6RV	SM6RV	SC50F-16	SC10C-10
VRAON 24-6F				
VRAON 20-8F	CL8RV	SM8RV	SC60F-16	SC40C-10
VRAON 24-8F				

Inserts (RCGX) ➡ E9
Inserts (RPGX) ➡ E11

CDH.. Inserts

HRCD





● Inch Holders

Item Number	Stock	Dimensions (inch)					Insert
	R	*h*	*b*	L_1	h_1	L_2	
HRCD-22-IN	●	2.0	2.0	12.0	2.0	1.0	CDH 22
HRCD-33-IN	●	2.0	2.0	12.0	2.0	1.0	CDH 33
HRCD-42-IN	●	2.0	2.0	12.0	2.0	1.0	CDH 42
HRCD-43-IN	●	2.0	2.0	12.0	2.0	1.0	CDH 43
HRCD-53-IN	●	2.0	2.0	12.0	2.0	1.0	CDH 53 / CDH 515



● Metric Holders

Item Number	Stock	Dimensions (㎜)					Insert
	R	*h*	*b*	L_1	h_1	L_2	
HRCD-22	○	50	50	300	50	30	CDH 22
HRCD-33	○	50	50	300	50	30	CDH 33
HRCD-42		50	50	300	50	30	CDH 42
HRCD-43		50	50	300	50	30	CDH 43
HRCD-53		50	50	300	50	30	CDH 53 / CDH 515



● Spare Parts

Parts / Toolholder	Clamp Screw	Washer	Shim	Wrench
				
HRCD-22-IN / HRCD-22	CS0316	W120	HACDH22	LW-2.5
HRCD-33-IN / HRCD-33	CS0625	W110	HACDH33	LW-5
HRCD-42-IN / HRCD-42	1/4-20UNC×1-1/4	W106	HACDH42	LWU-4
HRCD-43-IN / HRCD-43	1/4-20UNC×1-1/2		HACDH43	
HRCD-53-IN / HRCD-53	3/8-16UNC×1-1/2	W107	HACDH53 [CDH53] HACDH515 [CDH515] (OP)	LWU-5

Inserts ➡ E2

● : Stock ○ : 1-2 week delivery

G



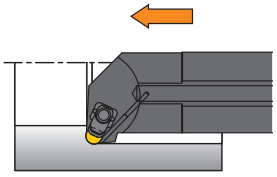
ID Tooling

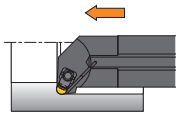
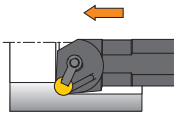
- Product Lines ····· G2
- For RN.. Inserts ····· G4
- For RP.. Inserts ····· G4
- For CN.. Inserts ····· G5
- For DN.. Inserts ····· G5
- For SN.. Inserts ····· G6
- For WN.. Inserts ····· G6

NTK ID Tooling-Product Lines

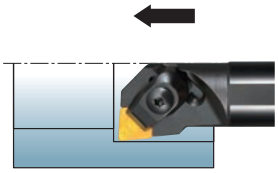
For Conventional Lathes

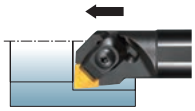
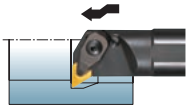
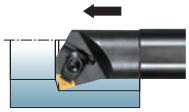
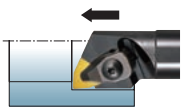
For round inserts



Insert	RN..	RP..
Holder	S50-CRGN	S12-CRGP
	 ➡G4	 ➡G4
Min. Bore Dia.	ϕ5.0"	ϕ1.25"

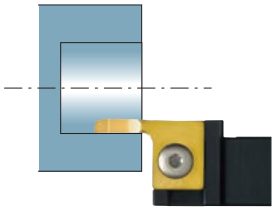
Multi-clamp series



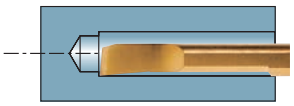
Insert	CN..	DN..	SN..	WN..
Holder	S-WCLN	S-WDUN	S-WSKN	S-WWLN
	 ➡G5	 ➡G5	 ➡G6	 ➡G6
Min. Bore Dia.	ϕ1.299"~ (33㎜~)	ϕ1.654"~ (42㎜~)	ϕ.969" (50㎜)	ϕ1.299"~ (33㎜~)

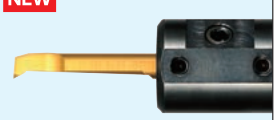
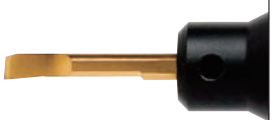
For Swiss Type Lathes

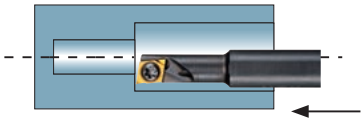
ID Boring



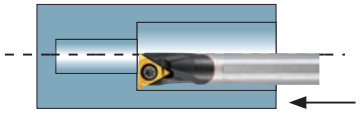
Insert	LBM ➡V7		
Holder	LBMA	DS-LBMB	CH-LBM
	 ➡V6	 ➡V6	 ➡V6
Min. Bore Dia.	ϕ.039" (1.0㎜)		



Insert	SHFS • SHFB • SBFS • SBFB ➡V12 • V16		
Holder	HY-NBH-OH	HY-NBH	NBH
	NEW  ➡V9 STICK DUO HYPER with Coolant through	 ➡V11 STICK DUO HYPER	 ➡V14
Min. Bore Dia.	ϕ.079" (2.0㎜)		

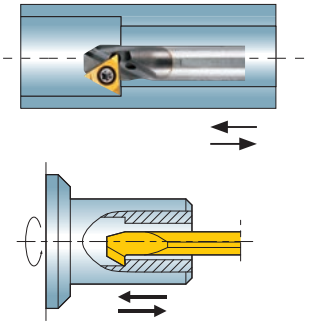


Insert	MBL ➡V23		ERGP ➡V24	
Holder	C-MBR (Carbide shank)	S-MBR (Steel shank)	C-SEXR (Carbide shank)	S-SEXR (Steel shank)
	 ➡V23 Coolant through	 ➡V23 Coolant through	 ➡V24 Coolant through	 ➡V24 Coolant through
Min. Bore Dia.	ϕ.197" (5.0㎜)		ϕ.236" (6.0㎜)	



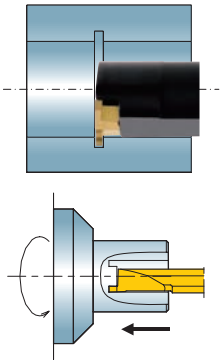
Insert	CC/CP ➡V25・26		TC/TP ➡V30	
Holder	C-SCLC/P (Carbide shank)	S-SCLC/P (Steel shank)	C-STUC/P (Carbide shank)	S-STUC/P (Steel shank)
	Coolant through ➡V25・26	Coolant through ➡V25・26	➡V30 Coolant through	➡V30 Coolant through
Min. Bore Dia.	ϕ.276"(7.0mm)		ϕ.315"(8.0mm)	

ID Back Turning



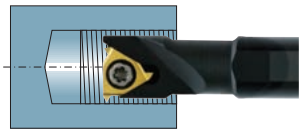
Insert	NEW SBB ➡V17		TC/TP ➡V30
Holder	HY-NBH-OH	NBH	C-STZP/C (Carbide shank)
	NEW ➡V9 Coolant through	➡V14	➡V30
Min. Bore Dia.	ϕ.118"(3.0mm)		ϕ.394"(10mm)

ID Grooving



Insert	SBG ➡V18		SFG ➡V18	GTG ➡V19
Holder	HY-NBH-OH	NBH	NBH	S-BGR/BGR
	NEW ➡V9 Coolant through	➡V14	➡V14	➡V19
Min. Bore Dia.	ϕ.118"(3.0mm)		ϕ.118"(3.0mm)	ϕ.394"(10mm)

ID Threading

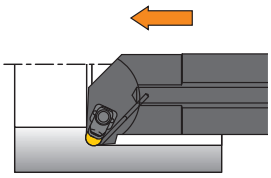


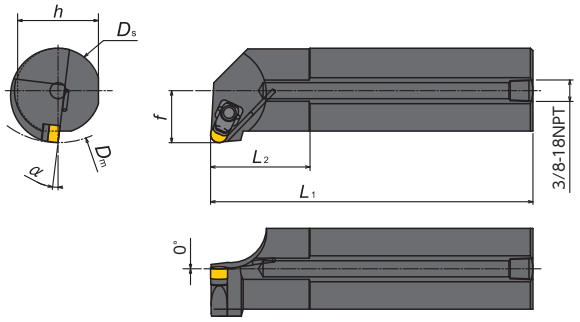
Insert	SBT ➡V20		TMN ➡V22
Holder	HY-NBH-OH	NBH	TGC/HN
	NEW ➡V9 Coolant through	➡V14	➡V22
Min. Bore Dia.	ϕ.118"(3.0mm)		ϕ.315"(8.0mm)

RN.. Inserts

S-CRGN (Coolant through)

Min. Bore Diameter ϕ5.0" -





● Inch Holders

Item Number	Stock R	Stock L	Min. Bore Dia. D_m (inch)	Dimensions (inch) D_s	h	L_1	f	L_2	α	Insert*
S50-CRGNR/L-32-4	●		5.0	2.0	1.87	16.0	1.281	2.362	7	RNG 45 (RNG 43)
S50-CRGNR/L-40-4	●		5.0	2.5	2.38	16.0	1.531	2.950	7	

● Spare Parts

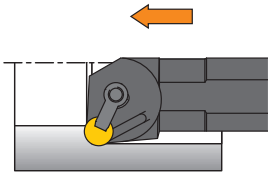
	Insert	Clamp	Blade	Shim	Shim Screw	Wrench
Standard	**RNG 45** / **RNG 43**	2413	9414	IRSN 43 / IRSN 45 (OP)	1161	5104

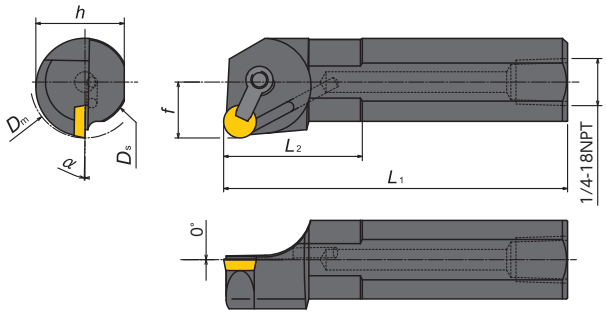
Inserts ➡ E10 • E25

RP.. Inserts

S-CRGP (Coolant through)

Min. Bore Diameter ϕ1.25" -





● Inch Holders

Item Number	Stock R	Stock L	Min. Bore Dia. D_m (inch)	Dimensions (inch) D_s	h	L_1	f	L_2	α	Insert
S12-CRGPR/L-16-3	●		1.25	1.0	0.89	12.0	.640	1.574	1	RPG 32

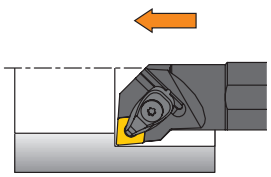
● Spare Parts

	Insert	Clamp	Diff Screw	Wrench
Standard	**RPG 32**	CL-7	XNS-36	5124

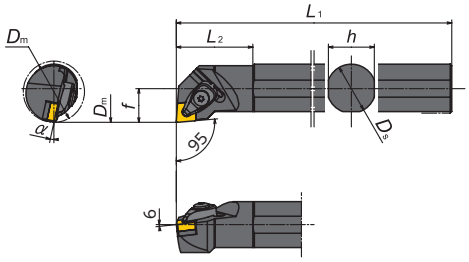
Inserts ➡ E11

CN.. Inserts

S-WCLN



Min. Bore Diameter ϕ1.299" -



・Right hand shown

● Metric Holders

Item Number	Stock R	Stock L	Min. Bore Dia. D_m (mm)	Dimensions (mm) D_s	h	L_1	f	L_2	α	Insert*
S25R-WCLNR/L12	○	○	33	25	24	200	17	40	14	CNGA 43 (CNGA 45) (CNG 43) (CNG 45) (CNGX 43) (CNGX 45)
S32S-WCLNR/L12	○	○	40	32	30	250	22	50	12	
S40T-WCLNR/L12	○	○	50	40	38	300	27	60	10	
S50U-WCLNR/L12	○	○	63	50	47	350	35	65	8	

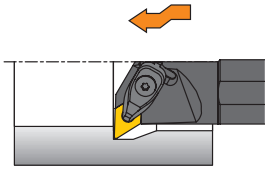
● Spare Parts

	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	CNGA 43	DC6CN	ACN423×1	AOS-6*26W (S25R-WCLNR/L12) AOS-6*30W (Others)	LLR-T20	FSS16-3.0*8	LLR-T10	ASGL6-D
	CNGA 45		—			—	—	
	CNG 43	TC6CN (OP)	ACN423×1			FSS16-3.0*8	LLR-T10	
	CNG 45		—			—	—	
	CNGX 43	HC6CN (OP)	ACN423×1			FSS16-3.0*8	LLR-T10	
	CNGX 45		—			—	—	

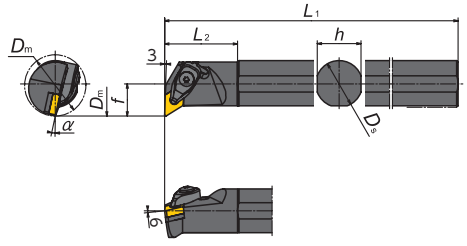
Inserts (CNG) ➡ E3
Inserts (CNGA) ➡ E4・E5・E23・E31
Inserts (CNGX) ➡ E6

DN.. Inserts

S-WDUN



Min. Bore Diameter ϕ1.654" -

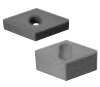


・Right hand shown

● Metric Holders

Item Number	Stock R	Stock L	Min. Bore Dia. D_m (mm)	Dimensions (mm) D_s	h	L_1	f	L_2	α	Insert*
S32S-WDUNR/L15	○	○	42	32	30	250	22	50	12	DNGA 43 (DNGA 45) (DNGX 45)
S40T-WDUNR/L15	○	○	50	40	38	300	27	60	10	

● Spare Parts

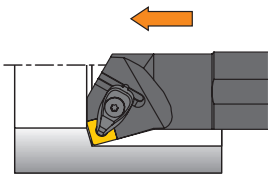
	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	DNGA 43	DC6DN	ADN423×1	AOS-6*26W (S32S-WDUNR/L15) AOS-6*30W (S40T-WDUNR/L15)	LLR-T20	FSS16-3.0*8	LLR-T10	ASGL6-D
	DNGA 45		—			—	—	
	DNGX 45	HC6DN (OP)	—			—	—	

● : Stock ○ : 1-2 week delivery OP : Optional parts

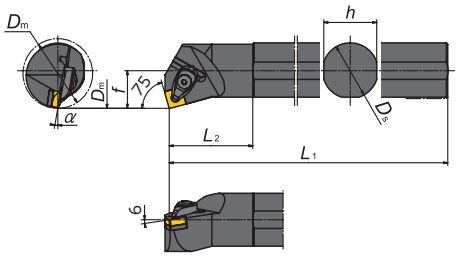
Inserts (DNGA) ➡ E7・E24
Inserts (DNGX) ➡ E8・E36・E37

SN.. Inserts

S-WSKN



Min. Bore Diameter ϕ1.969" -



・Right hand shown

● Metric Holder

Item Number	Stock		Min. Bore Dia.	Dimensions (mm)						Insert*
	R	L	D_m (mm)	D_s	h	L_1	f	L_2	α	
S40T-WSKNR/L12	○	○	50	40	38	300	27	60	10	SNGA 43 (SNGA 45) (SNG 43) (SNG 45) (SNGX 45)

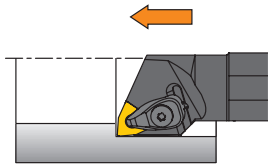
● Spare Parts

	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	SNGA 43	DC6CN	ASN423×1	AOS-6*30W	LLR-T20	FSS16-3.0*8	LLR-T10	ASGL6-D
	SNGA 45		—			—	—	
	SNG 43	TC6CN (OP)	ASN423×1			FSS16-3.0*8	LLR-T10	
	SNG 45		—			—	—	
	SNGX 45	HC6CN (OP)	—			—	—	

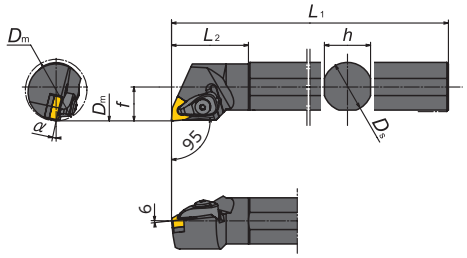
Inserts (SNG) ➡ E13・E40
Inserts (SNGA) ➡ E14・E25・E40
Inserts (SNGX) ➡ E15

WN.. Inserts

S-WWLN



Min. Bore Diameter ϕ1.299" -



・Right hand shown

● Metric Holders

Item Number	Stock		Min. Bore Dia.	Dimensions (mm)						Insert
	R	L	D_m (mm)	D_s	h	L_1	f	L_2	α	
S25R-WWLNR/L08	○	○	33	25	24	200	17	40	14	WNGA 43 (WNGA 45)
S32S-WWLNR/L08	○	○	40	32	30	250	22	50	12	
S40T-WWLNR/L08	○	○	50	40	38	300	27	60	10	

● Spare Parts

	Insert	Clamp	Shim	Clamp Screw	Wrench (for Clamp Screw)	Shim Screw	Wrench (for Shim Screw)	Spring
								
Standard	WNGA 43	DC6CN	AWN423-W×1	AOS-6*30W	LLR-T20	FSS16-3.0*8	LLR-T10	ASGL6-D
	WNGA 45		—			—	—	

Inserts ➡ E21・E51

* Optional spare parts are required to use the inserts in parentheses. See spare parts lists for detail.

H

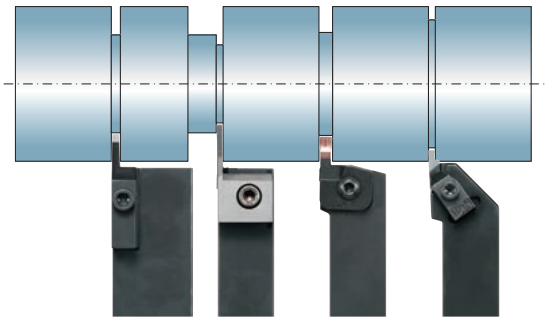


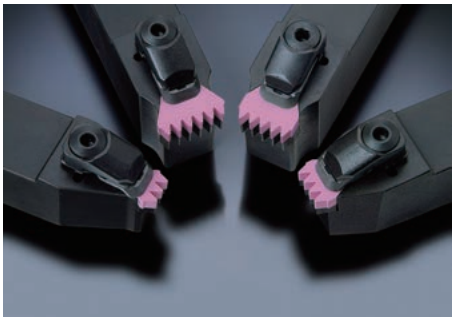
Grooving / Side Turning

- Product Lines ····· H2
- Guideline for Grooving Heat Resistant Alloys ····· H3
- Product Lines for Swiss Style Lathes ····· H4
- For VGW Inserts ····· H6
- For VDB Inserts ····· H8
- For GKN / GKP / RKN Inserts ··· H11
- Groove Duo ····· H12
- For VGE Inserts ····· H18
- Poly-V grooving ····· H19

Grooving / Side Turning

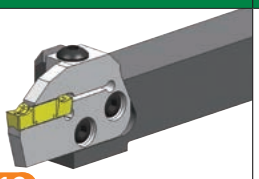
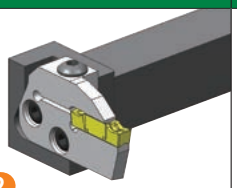
OD Grooving



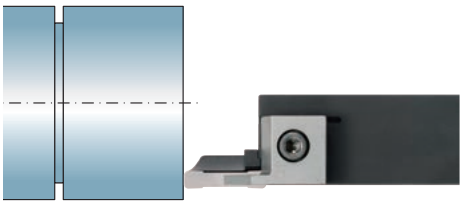


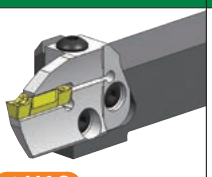
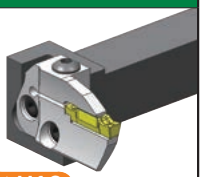
Insert	Ceramic insert
	PTM.. ➡H19
Holder	POLY-V
	NEW  ➡H19

Insert	Ceramic insert		Ceramic / Cermet / Carbide insert	Cermet insert
	VGW / VGW..R ➡H7	VDB / VDB..R ➡H10	GKN / GKP / PKN ➡H11	VGE ➡H18
Holder	BGV	DB	NS	VGT
	 ➡H6	 ➡H8	 ➡H11	 ➡H18
Blade width	.125" - .375"	.125" - .375"	.031" - .189"	.115" - .398"
Depth of cut	~1.125"	.750"	.210"	.470"

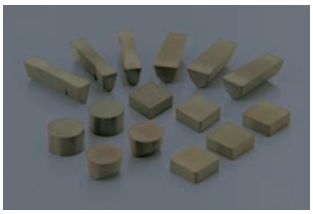
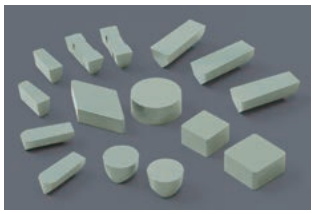
Insert	Carbide insert			
	GWPG / GWPM ➡H15			
Holder	GTWP-H	GKWP-H	GTWP	GKWP
	 ➡H12	 ➡H12	 ➡H16・17	 ➡H16
Blade width	.118" - .236"			
Depth of cut	~.984"			

Face Grooving

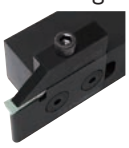


Insert	Ceramic insert	Carbide insert	
	VDB ➡H9	GWPFG / GWPG / GWPM ➡H15	
Holder	DB	GTWP-H	GKWP-H
	 ➡H9	 ➡H12	 ➡H12
Blade width	.156" - .375"	.118" - .236"	
Depth of cut	.750"	~.984"	
Min diameter	3"	1.142"	

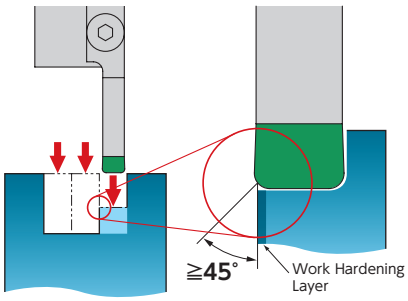
Guideline for grooving heat resistant alloys

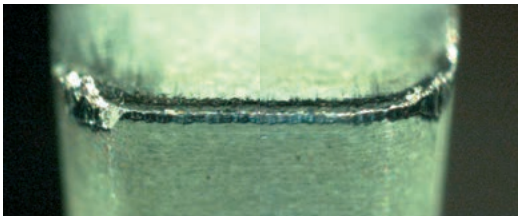
	SiAlON Ceramic		Whisker Ceramic
	SX5 	SX7 	WA1 
Toughness	better		
Flank wear resistance			better
Notching resistance		better	

When using SX7 / SX5, increase feed rates 100% vs. Whisker Ceramics

Application	Grade	Coolant	Cutting speed	Feed
Grooving 	SX7 SX5	WET	700 (500-900) SFM	.005 (.003-.006) IPR
	WA1		850 (600-1100) SFM	.002 (.002-.004) IPR

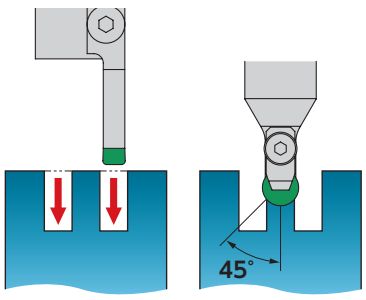
Application Information

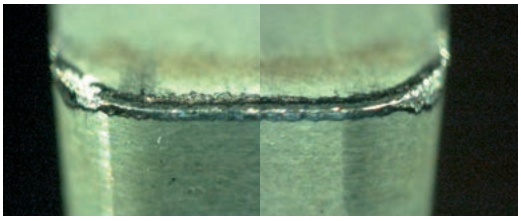




When machining a grooved area with multiple passes, during the last remaining plunge the insert radius engages a potentially work hardened area. This programming procedure sets up the potential of corner radius chipping or notching.

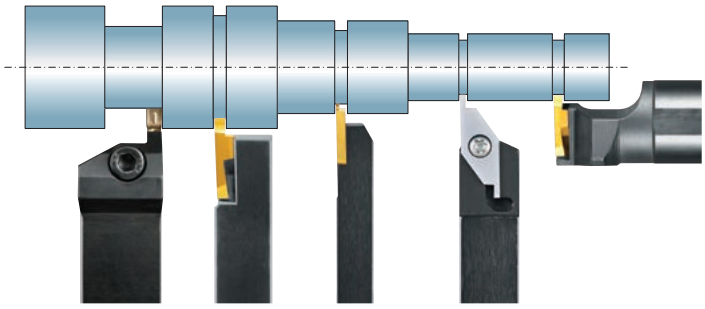
Change to



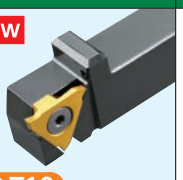


The grooving insert is plunged down both outside walls thus maintaining a good finish. The remaining material can be removed by using a stronger insert shape such as a RCGX style.

For Swiss Type Lathes

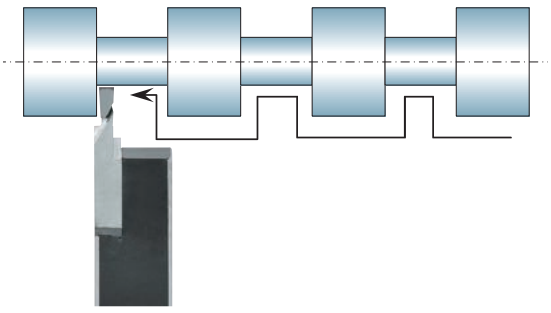


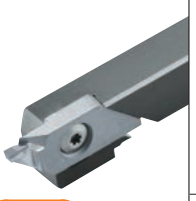
Insert	CSVG ➡T7		GTPS ➡T8
Holder	CSV	DS-CSV	CTPS
	 ➡T6	 ➡T6	 ➡T8
Blade width	.010" - .059" (0.25 - 1.50mm)		.030" - .079" (0.75 - 2.0mm)
Depth of cut	~.102" (~2.59mm)		~.098" (~2.50mm)

Insert	GTMH32 / GTMX32 / GTM32 / TMG32 ➡T12					
Holder	GTT	GTT-OH	Y-GTT	Y-GTT-OH	DS-GTT	CH-GTT
	 ➡T10	NEW  ➡T10 Coolant Through	 ➡T10 Y-axis	NEW  ➡T10 Y-axis w/ Coolant through	 ➡T10	 ➡T10
Blade width	.012" - .118" (0.3 - 3.0mm)					
Depth of cut	~.106" (~2.69mm)					

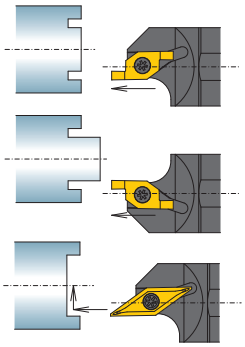
Insert	GWP ➡T9	GTM43 / GTMA43 / GTMT43 ➡T19		TWG ➡T17
Holder	GTWP	NGTN	NGTB	TWG
	NEW  ➡T9	 ➡T18	 ➡T18	 ➡T17
Blade width	.118" - .236" (3.0 - 5.9mm)	.039" - .216" (1.0 - 5.49mm)		.079" - .118" (2.0 - 3.0mm)
Depth of cut	~.354" (~9.0mm)	.177" (4.50mm)		~.118" (~3.0mm)

Multifunctional Grooving for non-ferrous material



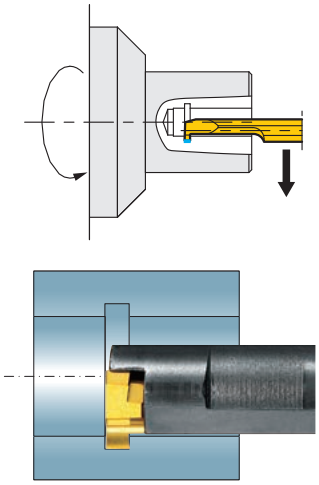
Insert	GTPA ➡T24		
Holder	GTPA	Y-GTPA	Y-GTPA-OH
	 ➡T24	 ➡T24 Y-axis	NEW  ➡T24 Y-axis w/ Coolant through
Blade width	.079" - .098" (2.0 - 2.50mm)		
Depth of cut	~.236" (~6.0mm)		

Face Grooving



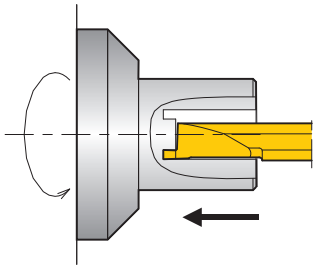
Insert	FGV ➡T23	FBV ➡T23	
Holder	FGV	DS-FGV	CH-FGV
	 ➡T22	 ➡T22	 ➡T22
Blade width	.039" - .079" (1.0㎜ - 2.0㎜)		
Depth of cut	~.118" (~3.0㎜)	FGV : ~.118" (~3.0㎜)	
		FBV : ~.157" (~4.0㎜)	

ID Grooving



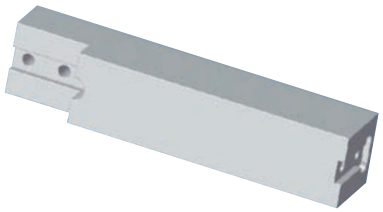
Insert	SBG ➡V18	GTG ➡V19
Holder	NBH	S-BG / BG
	 ➡V14	 ➡V19
Blade width	.020" - .079" (0.5 - 2.0㎜)	.020" - .079" (0.5 - 2.0㎜)
Depth of cut	~.079" (~2.0㎜)	~.118" (~3.0㎜)

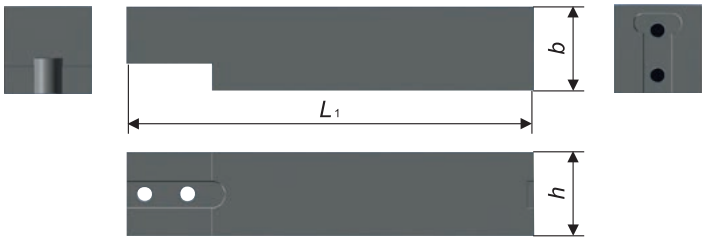
ID Face Grooving



Insert	SFG ➡V18
Holder	NBH
	 ➡V14
Blade width	.039" - .118" (1.0 - 3.0㎜)
Depth of cut	~.110" (~2.79㎜)

BGV

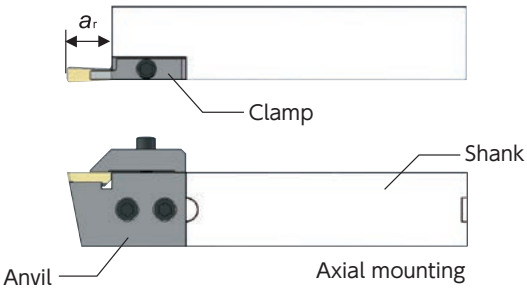


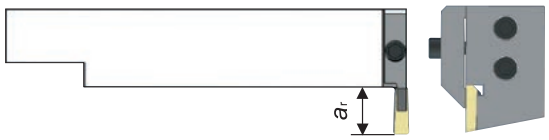


● Toolholder Body

Item Number	Stock	Dimensions (inch)			Insert	Anvil Screw	Stock
		h	*b*	L_1			
BS 20	●	1.25	1.38	5.5	VGW VGW..R 	BAS 20	●

Note: The holder body comes with anvil screws. Anvils sold separately





Radial mounting

・Right-hand shown

● Anvils (Anvil comes with clamp & clamp screw)

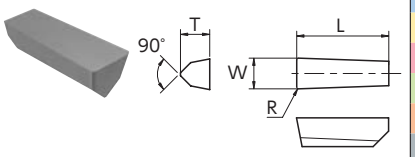
Right hand

Shank	Item Number	Stock		Dimensions (inch)	Insert	Clamp	Stock	Clamp Screw	Stock
		R	L	a_r					
BS 20	**BGVR 043020**	●	—	.375	**VGW 4125 VGW 4156**	BGCR 04	●	BRCS 2V	●
	BGVR 054520	●	—	.562	**VGW 4156 VGW 4187**	BGCR 05	●		
	BGVR 074520	●	—	.562	**VGW 6218 VGW 6250**	BGCR 07	●		
	BGVR 086020	●	—	.750	**VGW 6250 VGW 6281**	BGCR 08	●		
	BGVR 106020	●	—	.750	**VGW 8312 VGW 8344**	BGCR 10	●		
	BGVR 119020	●	—	1.125	**VGW 8344 VGW 8375**	BGCR 11	●		

Left hand

Shank	Item Number	Stock		Dimensions (inch)	Insert	Clamp	Stock	Clamp Screw	Stock
		R	L	a_r					
BS 20	**BGVL 043020**	—	●	.375	**VGW4125 VGW4156**	BGCL 04	●	BRCS 2V	●
	BGVL 054520	—	●	.562	**VGW4156 VGW4187**	BGCL 05	●		
	BGVL 074520	—	●	.562	**VGW6218 VGW6250**	BGCL 07	●		
	BGVL 086020	—	●	.750	**VGW6250 VGW6281**	BGCL 08	●		
	BGVL 106020	—	●	.750	**VGW8312 VGW8344**	BGCL 10	●		
	BGVL 119020	—	●	1.125	**VGW8344 VGW8375**	BGCL 11	●		

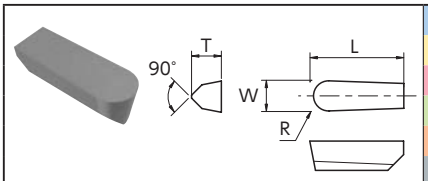
VGW



		SiAlON			Whisker
Steel	P				
Stainless Steel	M				
Cast Iron	K	●	●	●	●
Non-Ferrous Material	N				
Heat Resistant Alloy	S	●	●	●	●
Hardened Material	H				●

Item Number	W	R	T	L	SX7	SX9	SX5	WA1
VGW 41251 EX001	.125	.015	.187	.500				●
VGW 41251 T0220	.125	.015	.187	.500	●			
VGW 41252 EX001	.125	.031	.187	.500				●
VGW 41252 T0220	.125	.031	.187	.500	●			
VGW 41561 EX001	.156	.015	.187	.500				●
VGW 41561 T0220	.156	.015	.187	.500	●			
VGW 41562 EX001	.156	.031	.187	.500				●
VGW 41562 T0220	.156	.031	.187	.500	●			
VGW 41871 EX001	.187	.015	.187	.500				●
VGW 41871 T0220	.187	.015	.187	.500	●		●	
VGW 41872 EX001	.187	.031	.187	.500				●
VGW 41872 T0220	.187	.031	.187	.500	●		●	
VGW 62501 T0220	.250	.015	.250	.750	●			●
VGW 62501 T0420	.250	.015	.250	.750				●
VGW 62501 Z0420	.250	.015	.250	.750				●
VGW 62502 EX001	.250	.031	.250	.750				●
VGW 62502 T0220	.250	.031	.250	.750	●		●	
VGW 62503 T0220	.250	.046	.250	.750	●		●	
VGW 62814 T0220	.250	.062	.250	.750	●			
VGW 83122 EX001	.312	.031	.337	1.000				●
VGW 83122 T0220	.312	.031	.337	1.000	●			
VGW 83124 EX001	.312	.062	.337	1.000				●
VGW 83124 T0220	.312	.062	.337	1.000	●		●	
VGW 83752 EX001	.375	.031	.337	1.000				●
VGW 83752 T0220	.375	.031	.337	1.000	●		●	
VGW 83754 EX001	.375	.062	.337	1.000				●
VGW 83754 T0220	.375	.062	.337	1.000	●		●	●

VGW..R

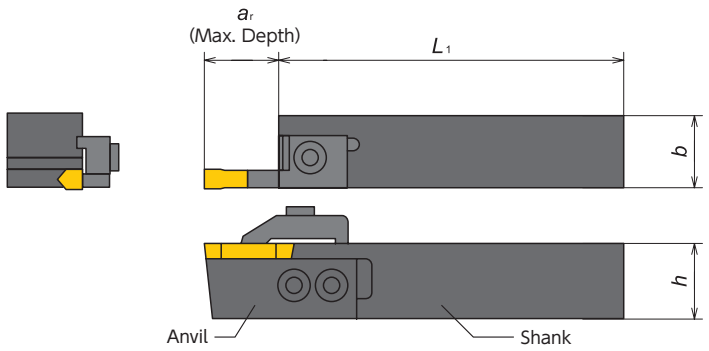


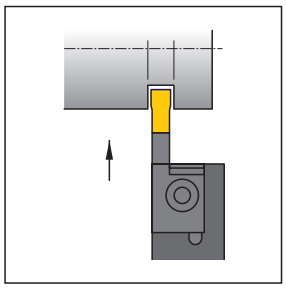
		SiAlON			Whisker
Steel	P				
Stainless Steel	M				
Cast Iron	K	●	●	●	●
Non-Ferrous Material	N				
Heat Resistant Alloy	S	●	●	●	●
Hardened Material	H				●

Item Number	W	R	T	L	SX7	SX9	SX5	WA1
VGW 4125R EX001	.125	.063	.187	.500				●
VGW 4125R T0220	.125	.063	.187	.500	●			
VGW 4156R EX001	.156	.078	.187	.500				●
VGW 4156R T0220	.156	.078	.187	.500	●			●
VGW 4156R Z0820	.156	.078	.187	.500				●
VGW 4187R EX001	.187	.094	.187	.500				●
VGW 4187R T0220	.187	.094	.187	.500	●		●	
VGW 6218R EX001	.218	.109	.250	.750				●
VGW 6218R T0220	.218	.109	.250	.750	●			
VGW 6250R T0220	.250	.125	.250	.750	●		●	
VGW 8312R EX001	.312	.156	.337	1.000				●
VGW 8312R T0220	.312	.156	.337	1.000	●		●	
VGW 8375R EX001	.375	.188	.337	1.000				●
VGW 8375R T0220	.375	.188	.337	1.000	●		●	

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery

DB Straight OD turning





・Right-hand shown

Toolholder Body

Item Number	Stock		Dimensions (inch)				Insert	Anvil Screw	Stock	Clamp Screw	Stock
	R	L	*h*	*b*	L_1	a_r					
DB1-1-16	●	●	1.00	1.00	6.00	.750	VDB VDB..R	DAS41	●	SC40F10	●
DB1-1-20	●	●	1.25	1.25	7.00	.750					

Note: Toolholder body comes with anvil screw and clamp screw. Anvils and Clamps are sold separately

Anvils and Clamps

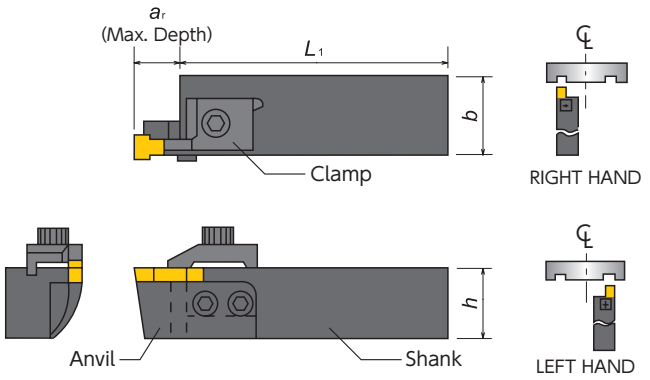
Insert	DB-1-16R (Right hand)				DB-1-16L (Left hand)			
	Anvil	Stock	Clamp	Stock	Anvil	Stock	Clamp	Stock
VDB125	R1E04	●	CR1-1-E04	●	L1E04	●	CL1-1-E04	●
VDB156	R1E05	●	CR1-1-E06	●	L1E05	●	CL1-1-E06	●
VDB188 / VDB218	R1E06	●	CR1-1-E06	●	L1E06	●	CL1-1-E06	●
VDB250	R1E07	●	CR1-1-E07	●	L1E07	●	CL1-1-E07	●
VDB281 / VDB312	R1E09	●	CR1-1-E09	●	L1E09	●	CL1-1-E09	●
VDB344 / VDB375	R1E11	●	CR1-1-E11	●	L1E11	●	CL1-1-E11	●

Insert	DB-1-20R (Right hand)				DB-1-20L (Left hand)			
	Anvil	Stock	Clamp	Stock	Anvil	Stock	Clamp	Stock
VDB125	R2E04	●	CR1-1-E04	●	L2E04	●	CL1-1-E04	●
VDB156	R2E05	●	CR1-1-E06	●	L2E05	○	CL1-1-E06	●
VDB188 / VDB218	R2E06	●	CR1-1-E06	●	L2E06	●	CL1-1-E06	●
VDB250	R2E07	●	CR1-1-E07	●	L2E07	●	CL1-1-E07	●
VDB281 / VDB312	R2E09	●	CR1-1-E09	●	L2E09	●	CL1-1-E09	●
VDB344 / VDB375	R2E11	●	CR1-1-E11	●	L2E11	●	CL1-1-E11	●

Inserts ➡ H10

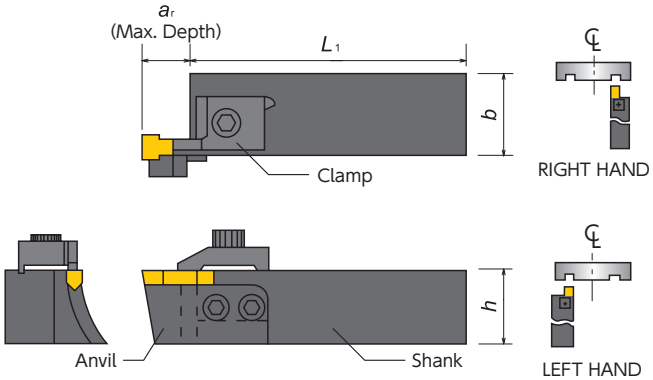
DB Face Grooving

Curve In



・Right-hand shown

Curve Out



・Right-hand shown

● Toolholder Body

Item Number	Stock		Dimensions (inch)				Insert	Anvil Screw	Stock	Clamp Screw	Stock
	R	L	*h*	*b*	L_1	a_r					
DB7-1-7-16R/L	○	●	1.00	1.00	6.00	.750	VDB VDB..R 	DAS41	●	SC40F10	●
DB7-1-7-20R/L	●	●	1.25	1.25	7.00	.750					

Note: Toolholder body comes with anvil screw and clamp screw. Anvils and Clamps are soid separately

● Anvils and Clamps

Curve In

Shank	Insert	O.D. range								Clamp	Stock
		3" - 4 1/2"		4 1/2" - 7"		7" - 14"		14" and over			
DB7-1-7-16R DB7-1-7-20R	VDB156 / VDB188	DBA-3305	○	DBA-3405	○	DBA-3505	○	DBA-3605	○	CR1-1-E06A	○
	VDB250	DBA-3307	○	DBA-3407	○	DBA-3507	○	DBA-3607	○	CR1-1-E07A	●
	VDB281 / VDB312	DBA-3309	○	DBA-3309	○	DBA-3509	○	DBA-3509	○	CR1-1-E09A	○
	VDB344 / VDB375	DBA-3311	○	DBA-3311	○	DBA-3511	○	DBA-3511	○	CR1-1-E11A	●
DB7-1-7-16L DB7-1-7-20L	VDB156 / VDB188	DBA-7305	○	DBA-7405	○	DBA-7505	○	DBA-7605	○	CL1-1-E06A	○
	VDB250	DBA-7307	○	DBA-7407	○	DBA-7507	○	DBA-7607	○	CL1-1-E07A	●
	VDB281 / VDB312	DBA-7309	○	DBA-7309	○	DBA-7509	○	DBA-7509	○	CL1-1-E09A	○
	VDB344 / VDB375	DBA-7311	○	DBA-7311	○	DBA-7511	○	DBA-7511	○	CL1-1-E11A	○

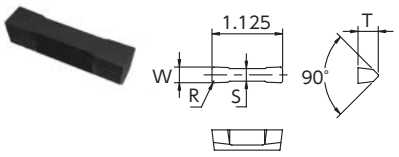
Curve Out

Shank	Insert	O.D. range								Clamp	Stock
		3" - 4 1/2"		4 1/2" - 7"		7" - 14"		14" and over			
DB7-1-7-16R DB7-1-7-20R	VDB156 / VDB188	DBA-4305	○	DBA-4405	○	DBA-4505	○	DBA-4605	○	CR1-1-E06A	○
	VDB250	DBA-4307	○	DBA-4407	○	DBA-4507	○	DBA-4607	○	CR1-1-E07A	●
	VDB281 / VDB312	DBA-4309	○	DBA-4309	○	DBA-4509	○	DBA-4509	○	CR1-1-E09A	○
	VDB344 / VDB375	DBA-4311	○	DBA-4311	○	DBA-4511	○	DBA-4511	○	CR1-1-E11A	●
DB7-1-7-16L DB7-1-7-20L	VDB156 / VDB188	DBA-8305	○	DBA-8405	○	DBA-8505	○	DBA-8605	○	CL1-1-E06A	○
	VDB250	DBA-8307	○	DBA-8407	○	DBA-8507	○	DBA-8607	○	CL1-1-E07A	●
	VDB281 / VDB312	DBA-8309	○	DBA-8309	○	DBA-8509	○	DBA-8509	○	CL1-1-E09A	○
	VDB344 / VDB375	DBA-8311	○	DBA-8311	○	DBA-8511	○	DBA-8511	○	CL1-1-E11A	○

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery

Inserts ➡ H10

VDB

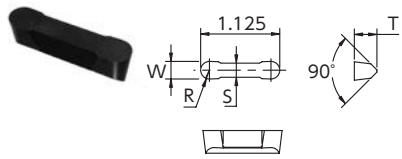


		SiAlON			Whisker	Alumina - TiC					
Steel	P										
Stainless Steel	M										
Cast Iron	K	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N										
Heat Resistant Alloy	S	●	●	●	●						
Hardened Material	H				●		●	●	●	●	●

Item Number	W	R	S	T	SX7	SX9	SX5	WA1	HC6	HC2	HC5	HC7	ZC7	ZC4
VDB 125 A015 T0225	.125	.015	.106	.250						●				
VDB 156 A015 T0225	.156	.015	.106	.250						●				
VDB 188 A015 T0225	.188	.015	.144	.250						●				
VDB 218 A015 T0225	.218	.015	.144	.250						●				
VDB 250 B015 T0225	.250	.015	.202	.337						●				
VDB 250 B031 T0220	.250	.031	.202	.337		●	●	●						
VDB 250 B062 T0220	.250	.062	.202	.337		●								
VDB 281 B015 T0225	.281	.015	.202	.337						●				
VDB 312 B015 T0225	.312	.015	.202	.337						●				
VDB 312 B031 EX001	.312	.031	.202	.337				●						
VDB 312 B031 T0220	.312	.031	.202	.337			●							
VDB 312 B062 EX001	.312	.062	.202	.337				●						
VDB 312 B062 T0220	.312	.062	.202	.337			●							
VDB 344 B015 T0225	.344	.015	.275	.337						●				
VDB 375 B015 T0225	.375	.015	.275	.337						●				
VDB 375 B031 EX001	.375	.031	.275	.337				●						
VDB 375 B031 T0220	.375	.031	.275	.337			●							
VDB 375 B046 E02	.375	.046	.275	.337		●								
VDB 375 B046 T0220	.375	.046	.275	.337		●								
VDB 375 B062 E02	.375	.062	.275	.337		●								
VDB 375 B062 T0220	.375	.062	.275	.337		●	●							

Holders ➡ H8 • H9

VDB..R



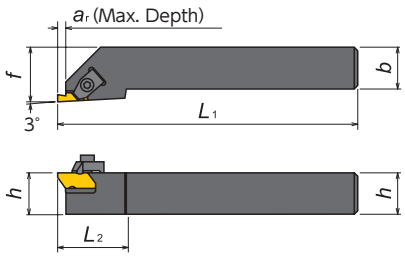
		SiAlON			Whisker	Alumina - TiC					
Steel	P										
Stainless Steel	M										
Cast Iron	K	●	●	●	●	●	●	●	●	●	●
Non-Ferrous Material	N										
Heat Resistant Alloy	S	●	●	●	●						
Hardened Material	H				●		●	●	●	●	●

Item Number	W	R	S	T	SX7	SX9	SX5	WA1	HC6	HC2	HC5	HC7	ZC7	ZC4
VDB 125 RA T0225	.125	.063	.106	.250						●				
VDB 156 RA T0225	.156	.078	.106	.250						●				
VDB 188 RA T0225	.188	.094	.144	.250						●				
VDB 218 RA T0225	.218	.109	.144	.250						●				
VDB 250 RB T0220	.250	.125	.202	.337			●	●						
VDB 250 RB T0225	.250	.125	.202	.337						●				
VDB 281 RB T0225	.281	.141	.202	.337						●				
VDB 312 RB T0225	.312	.156	.202	.337						●				
VDB 344 RB T0225	.344	.172	.275	.337						●				
VDB 375 RB T0225	.375	.188	.275	.337						●				

Holders ➡ H8 • H9

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery R : Stock (Right-hand only) L : Stock (Left-hand only)

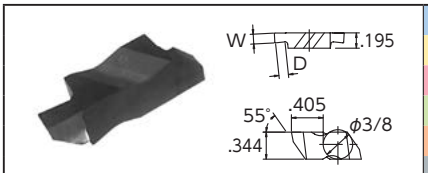
NS



● Toolholders

Item Number	Stock	Dimensions (inch)						Insert		Clamp	Stock	Clamp Screw	Stock
		h	*b*	L_1	L_2	*f*	a_r						
NSR16-3D	●	1.00	1.00	6.00	1.25	1.25	0.210	GKN3..R RKN3..R GKP3..R		CM-72		S-412	
NSL16-3D	●	1.00	1.00	6.00	1.25	1.25	0.210	GKN3..L RKN3..L GKP3..L		CM-73		S-412	

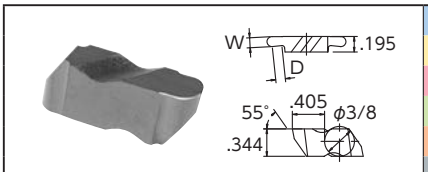
GKN / GKP



Steel	P									●	●
Stainless Steel	M									●	●
Cast Iron	K	●	●	●	●	●	●	●		●	
Non-Ferrous Material	N									●	
Heat Resistant Alloy	S										●
Hardened Material	H		●	●	●	●	●				●

Item Number	W	R	D	Alumina - TiC						Cermet	PVD-Carbide
				HC6	HC2	HC5	HC7	ZC7	ZC4	C7X	QM3
GKP 3031 R/L	.031	.004	.050							R L	R L
GKP 3047 R/L	.047	.008	.075							R L	
GKN 3062 R/L	.062	.008	.094		R L				R L		
GKP 3062 R/L	.062	.008	.094							R L	R L
GKP 3088 R/L	.088	.008	.094							R L	
GKN 3094 R/L	.094	.008	.150		R L				R L		
GKP 3094 R/L	.094	.008	.150							R L	R L
GKN 3125 R/L	.125	.012	.150		R L				R L		
GKP 3125 R/L	.125	.008	.150							R L	R L
GKN 3156 R/L	.156	.012	.150		R L						
GKP 3156 R/L	.156	.008	.150							R L	R L
GKN 3189 R/L	.189	.012	.150		R L						
GKP 3189 R/L	.189	.012	.150							R L	R L

RKN



Steel	P									●	●
Stainless Steel	M									●	●
Cast Iron	K	●	●	●	●	●	●	●		●	
Non-Ferrous Material	N									●	
Heat Resistant Alloy	S										●
Hardened Material	H		●	●	●	●	●				●

Item Number	W	R	D	Alumina - TiC						Cermet	PVD-Carbide
				HC6	HC2	HC5	HC7	ZC7	ZC4	C7X	QM3
RKN 3078 R/L	.078	.039	.150						R L		
RKN 3094 R/L	.094	.047	.150						R L		
RKN 3125 R/L	.125	.063	.150						R L		
RKN 3156 R/L	.156	.078	.150						R L		
RKN 3189 R/L	.189	.095	.150						R		

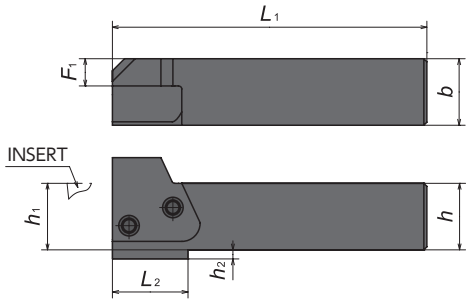
* Inserts with special width and R in both GKN and GKP are available upon requests.

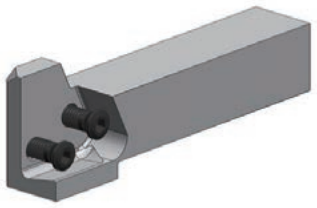
Groove DUO

Modular system

To be released in 2016

GTWP-H Straight style toolholder



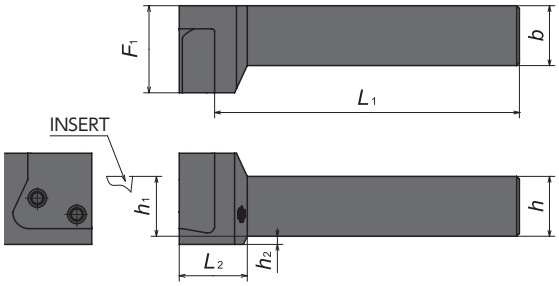


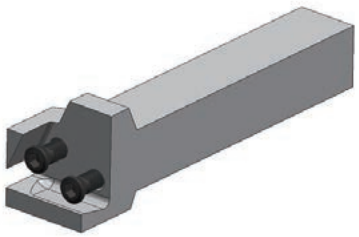
・Right-hand shown

● Toolholder Body

Item Number	Stock		Dimensions										Applicable Blade	Clamp Screw	Wrench
			h		b		h_1		L_1		F_1		h_2		L_2				
	R	L	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)			
GTWP R/L 16-IN-H	●	●	1.00		1.00		1.00		5.311	134.9	0.567	14.4	0.260	6.6	0.965	24.5	GBWP R/L GBWPF R/L	FSI28-6.0*18	LW-4
GTWP R/L 20-IN-H	●	●	1.25		1.25		1.25		6.311	160.3	0.817	20.75	–	–	–	–	GBWP R/L GBWPF R/L	FSI28-6.0*18	LW-4
GTWP R/L 2020-H	○	○	.787	20	.787	20	.787	20	4.232	107.5	0.354	9	0.472	12	0.965	24.5	GBWP R/L GBWPF R/L	FSI28-6.0*18	LW-4
GTWP R/L 2525-H	○	○	.984	25	.984	25	.984	25	5.217	132.5	0.551	14	0.276	7	0.965	24.5	GBWP R/L GBWPF R/L	FSI28-6.0*18	LW-4
GTWP R/L 3232-H	○	○	1.26	32	1.26	32	1.26	32	6.004	152.5	0.827	21	–	–	–	–	GBWP R/L GBWPF R/L	FSI28-6.0*18	LW-4

GKWP-H L-style toolholder



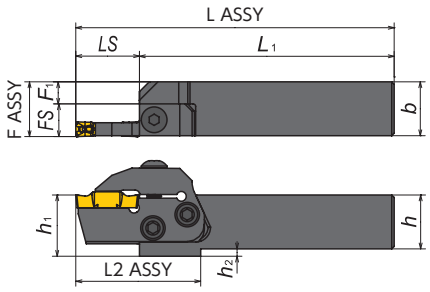


・Right-hand shown

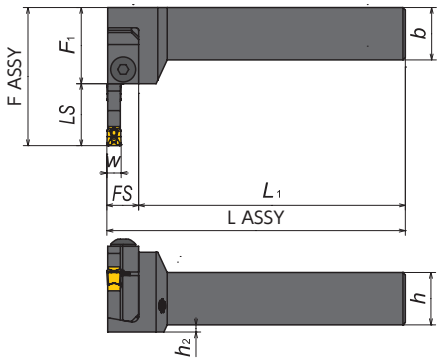
● Toolholder Body

Item Number	Stock		Dimensions										Applicable Blade	Clamp Screw	Wrench
			h		b		h_1		L_1		F_1		h_2		L_2				
	R	L	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)			
GKWP R/L 16-IN-H	●	●	1.00		1.00		1.00		5.449	138.4	1.26	32	0.260	6.6	0.965	24.5	GBWP R/L GBWPF R/L	FSI28-6.0*18	LW-4
GKWP R/L 20-IN-H	●	●	1.25		1.25		1.25		6.449	163.8	1.26	32	–	–	–	–	GBWP R/L GBWPF R/L	FSI28-6.0*18	LW-4
GKWP R/L 2020-H	○	○	.787	20	.787	20	.787	20	4.370	111	1.26	32	0.472	12	0.965	24.5	GBWP R/L GBWPF R/L	FSI28-6.0*18	LW-4
GKWP R/L 2525-H	○	○	.984	25	.984	25	.984	25	5.354	136	1.26	32	0.276	7	0.965	24.5	GBWP R/L GBWPF R/L	FSI28-6.0*18	LW-4
GKWP R/L 3232-H	○	○	.984	25	.984	25	.984	25	6.142	156	1.26	32	–	–	–	–	GBWP R/L GBWPF R/L	FSI28-6.0*18	LW-4

〔Combination dimentions〕

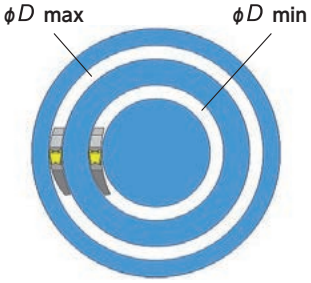


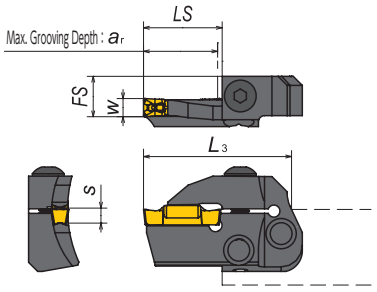
L ASSY = L1 (toolholder body) + LS (blade)
F ASSY = F1 (toolholder body) + FS (blade)
L2 ASSY = L2 (toolholder body) + LS (blade)

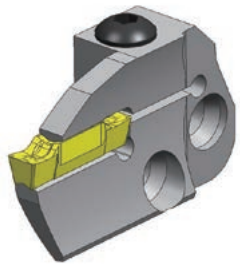


L ASSY = L1 (toolholder body) + FS (blade)
F ASSY = F1 (toolholder body) + LS (blade)

GBWPF Blade for Face Grooving







・Right-hand shown

● Toolholder Body

Item Number	Stock		Groove Width w		Max. Grooving Depth ar		ϕD min		ϕD max		Dimensions LS		FS		L3		Seat Size s	Applicable Insert *
	R	L	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)		
GBWPFR/L-3T13-029035	○	○	.118	3	.512	13	1.142	29	1.378	35	.571	14.5	.551	14	1.535	39	C	GWPFM300
GBWPFR/L-3T13-035045	○	○	.118	3	.512	13	1.378	35	1.772	45	.571	14.5	.551	14	1.535	39	C	GWPFM300
GBWPFR/L-3T15-045060	○	○	.118	3	.591	15	1.772	45	2.362	60	.650	16.5	.551	14	1.614	41	C	GWPFM300
GBWPFR/L-3T15-060100	○	○	.118	3	.591	15	2.362	60	3.937	100	.650	16.5	.551	14	1.614	41	C	GWPFM300
GBWPFR/L-3T15-100250	○	○	.118	3	.591	15	3.937	100	9.843	250	.650	16.5	.551	14	1.614	41	C	GWPFM300
GBWPFR/L-4T15-030040	○	○	.157	4	.591	15	1.181	30	1.575	40	.650	16.5	.551	14	1.614	41	C	GWPFM400
GBWPFR/L-4T15-040060	○	○	.157	4	.591	15	1.575	40	2.362	60	.650	16.5	.551	14	1.614	41	C	GWPFM400
GBWPFR/L-4T15-060120	○	○	.157	4	.591	15	2.362	60	4.724	120	.650	16.5	.551	14	1.614	41	C	GWPFM400
GBWPFR/L-4T15-120300	○	○	.157	4	.591	15	4.724	120	11.811	300	.650	16.5	.551	14	1.614	41	C	GWPFM400
GBWPFR/L-5T15-030050	○	○	.197	5	.591	15	1.181	30	1.969	50	.650	16.5	.551	14	1.614	41	C	GWPFM500
GBWPFR/L-5T15-050120	○	○	.197	5	.591	15	1.969	50	4.724	120	.650	16.5	.551	14	1.614	41	C	GWPFM500
GBWPFR/L-5T15-120999	○	○	.197	5	.591	15	4.724	120	∞	∞	.650	16.5	.551	14	1.614	41	C	GWPFM500
GBWPFR/L-6T15-035080	○	○	.236	6	.591	15	1.378	35	3.150	80	.650	16.5	.551	14	1.614	41	C	GWPFM600
GBWPFR/L-6T15-080999	○	○	.236	6	.591	15	3.150	80	∞	∞	.650	16.5	.551	14	1.614	41	C	GWPFM600

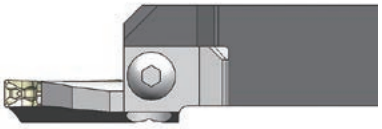
* Min. diameter depends on insert.

Inserts ➡ H15

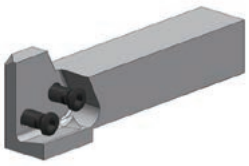
Combination of toolholder and blade for Face Grooving

GTWP-H Straight style toolholder

Right-hand system

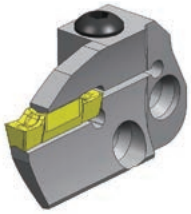


Toolholder



GTWP R-H

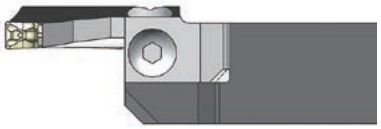
Blade



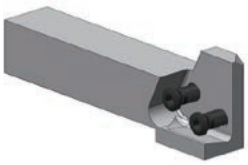
GBWP R
GBWPF R

* Right-hand toolholder takes Right-hand blade.

Left-hand system

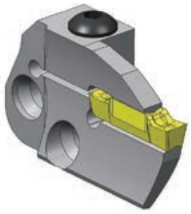


Toolholder



GTWP L-H

Blade

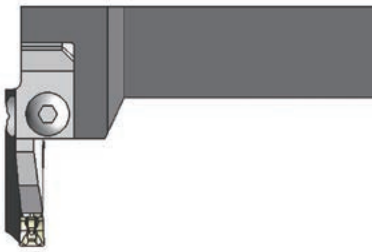


GBWP L
GBWPF L

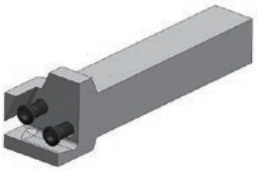
* Left-hand toolholder takes Left-hand blade.

GKWP-H L-style toolholder

Right-hand system

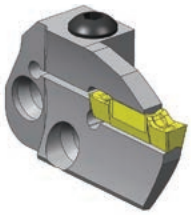


Toolholder



GKWP R-H

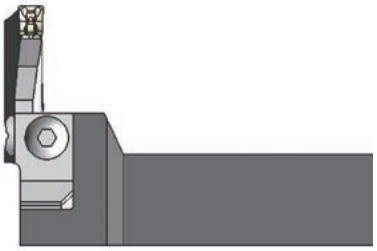
Blade



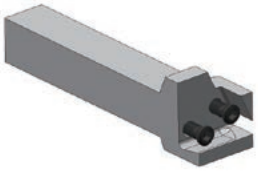
GBWP L
GBWPF L

* Right-hand toolholder takes Left-hand blade.

Left-hand system

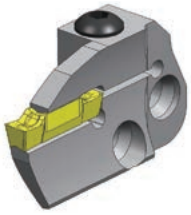


Toolholder



GKWP L-H

Blade

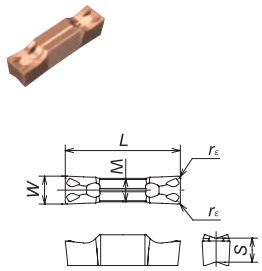
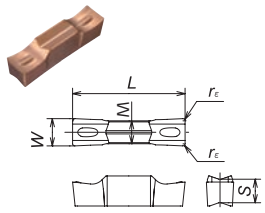


GBWP R
GBWPF R

* Left-hand toolholder takes Right-hand blade.

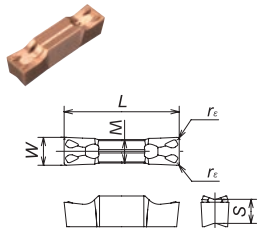
Groove DUO Series - Inserts

OD Grooving Inserts

Shape	Item Number	W Groove Width (Inch)	W Groove Width (mm)	W Width Tolerance (Inch)	W Width Tolerance (mm)	r_ε (Inch)	r_ε (mm)	M (Inch)	M (mm)	L (Inch)	L (mm)	Seat Size S	Coated Carbide DM4
	GWPG300N02D-GW	.118	3.0	.001	± 0.025	.008	0.2	.098	2.5	.811	20.6	D	●
	GWPG300N04D-GW	.118	3.0	.001	± 0.025	.016	0.4	.098	2.5	.811	20.6	D	●
	GWPG400N02E-GW	.157	4.0	.001	± 0.025	.008	0.2	.134	3.4	.811	20.6	E	●
	GWPG400N04E-GW	.157	4.0	.001	± 0.025	.016	0.4	.134	3.4	.811	20.6	E	●
	GWPG400N08E-GW	.157	4.0	.001	± 0.025	.031	0.8	.134	3.4	.811	20.6	E	●
	GWPG500N02F-GW	.197	5.0	.001	± 0.025	.008	0.2	.169	4.3	.811	20.6	F	○
	GWPG500N04F-GW	.197	5.0	.001	± 0.025	.016	0.4	.169	4.3	.811	20.6	F	○
	GWPG500N08F-GW	.197	5.0	.001	± 0.025	.031	0.8	.169	4.3	.811	20.6	F	○
	GWPG600N02G-GW	.236	6.0	.001	± 0.025	.008	0.2	.205	5.2	1.008	25.6	G	○
	GWPG600N04G-GW	.236	6.0	.001	± 0.025	.016	0.4	.205	5.2	1.008	25.6	G	○
	GWPG600N08G-GW	.236	6.0	.001	± 0.025	.031	0.8	.205	5.2	1.008	25.6	G	○
	GWPM300N04D-GW	.118	3.0	.002	± 0.05	.016	0.4	.098	2.5	.811	20.6	D	○
GWPG: Outside ground GWPM: Full-molded ●Excellent chip control ●Best for side turning	GWPM400N04E-GW	.157	4.0	.002	± 0.05	.016	0.4	.134	3.4	.811	20.6	E	○
	GWPM500N04F-GW	.197	5.0	.002	± 0.05	.016	0.4	.169	4.3	.811	20.6	F	○
	GWPM600N04G-GW	.236	6.0	.002	± 0.05	.016	0.4	.205	5.2	1.008	25.6	G	○
	GWPG300N02D-GV	.118	3.0	.001	± 0.025	.008	0.2	.205	2.5	.811	20.6	D	●
	GWPG300N04D-GV	.118	3.0	.001	± 0.025	.016	0.4	.205	2.5	.811	20.6	D	●
	GWPG400N02E-GV	.157	4.0	.001	± 0.025	.008	0.2	.169	4.3	.811	20.6	E	●
	GWPG400N04E-GV	.157	4.0	.001	± 0.025	.016	0.4	.169	4.3	.811	20.6	E	●
	GWPG500N02F-GV	.197	5.0	.001	± 0.025	.008	0.2	.169	4.3	.811	20.6	F	○
	GWPG500N04F-GV	.197	5.0	.001	± 0.025	.016	0.4	.169	4.3	.811	20.6	F	○
	GWPG600N02G-GV	.236	6.0	.001	± 0.025	.008	0.2	.169	4.3	1.008	25.6	G	○
●Less tool pressure design	GWPG600N04G-GV	.236	6.0	.001	± 0.025	.016	0.4	.169	4.3	1.008	25.6	G	○

Face Grooving Insert

To be released in 2016

Shape	Item Number	W Groove Width (Inch)	W Groove Width (mm)	W Width Tolerance (Inch)	W Width Tolerance (mm)	r_ε (Inch)	r_ε (mm)	M (Inch)	M (mm)	L (Inch)	L (mm)	Seat Size S	Coated Carbide DM4
	GWPFM300N02-GT	.118	3.0	± .002	± 0.05	.008	0.2	0.087	2.2	.965	24.5	C	●
	GWPFM300N04-GT	.118	3.0	± .002	± 0.05	.016	0.4	0.087	2.2	.965	24.5	C	●
	GWPFM400N04-GT	.157	4.0	± .002	± 0.05	.016	0.4	0.126	3.2	1.043	26.5	C	●
	GWPFM400N08-GT	.157	4.0	± .002	± 0.05	.031	0.8	0.126	3.2	1.043	26.5	C	●
	GWPFM500N04-GT	.197	5.0	± .002	± 0.05	.016	0.4	0.146	3.7	1.043	26.5	C	●
	GWPFM500N08-GT	.197	5.0	± .002	± 0.05	.031	0.8	0.146	3.7	1.043	26.5	C	●
	GWPFM600N04-GT	.236	6.0	± .002	± 0.05	.016	0.4	0.185	4.7	1.043	26.5	C	●
	GWPFM600N08-GT	.236	6.0	± .002	± 0.05	.031	0.8	0.185	4.7	1.043	26.5	C	●

Minimum Diameter for Face Grooving

		GWPFG	GWPM	GWPG
Groove Width (inch)	.118	φ1.142" (φ29mm)	φ5.827" (φ148mm)	φ11.220" (φ285mm)
	.157	φ1.299" (φ33mm)	φ3.583" (φ91mm)	φ9.843" (φ250mm)
	.197	φ1.378" (φ35mm)	φ3.543" (φ90mm)	φ9.449" (φ240mm)
	.236	φ1.575" (φ40mm)	φ4.094" (φ104mm)	φ8.661" (φ220mm)

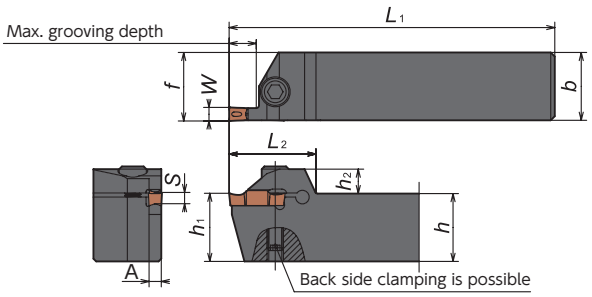
● : Stock ○ : 1-2 week delivery

Holders➡ H13

Groove DUO

Mono-shank style

GTWP





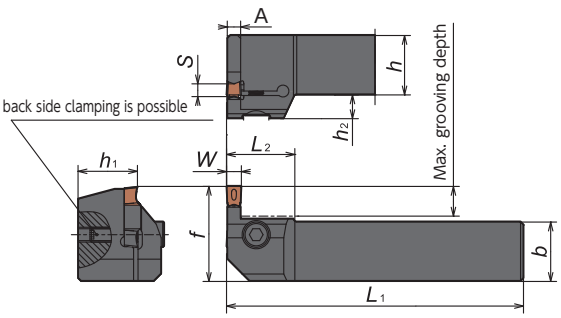
Recommended tightening torque 7.0[N・m]

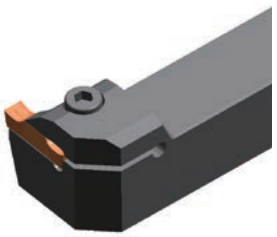
・Right-hand shown

● Toolholder Body

Holder Number	Stock		Width w		Max. Grooving Depth a_r		Dimensions										Seat Size s	Applicable Insert	Spare Parts	
							h		b		h_1		h_2		f		L_1		L_2		A				Bolt	Wrench
	R	L	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)				
GTWP□2020K-3D10	○	○	.118	3	.394	10	.787	20	.787	20	.787	20	.315	8	.795	20.2	4.921	125	1.142	29	.102	2.6	D	GWP○300	CS0520W	LW-4
GTWP□2525M-3D10	○	○	.118	3	.394	10	.984	25	.984	25	.984	25	.354	9	.992	25.2	5.906	150	1.260	32	.102	2.6	D	GWP○300	CS0625W	LW-5
GTWP□2020K-3D20	○	○	.118	3	.787	20	.787	20	.787	20	.787	20	.315	8	.795	20.2	4.921	125	1.614	41	.102	2.6	D	GWP○300	CS0520W	LW-4
GTWP□2525M-3D20	○	○	.118	3	.787	20	.984	25	.984	25	.984	25	.354	9	.992	25.2	5.906	150	1.732	44	.102	2.6	D	GWP○300	CS0625W	LW-5
GTWP□2020K-4E10	○	○	.157	4	.394	10	.787	20	.787	20	.787	20	.315	8	.799	20.3	4.921	125	1.142	29	.138	3.5	E	GWP○400	CS0520W	LW-4
GTWP□2525M-4E10	○	○	.157	4	.394	10	.984	25	.984	25	.984	25	.354	9	.996	25.3	5.906	150	1.260	32	.138	3.5	E	GWP○400	CS0625W	LW-5
GTWP□2020K-4E20	○	○	.157	4	.787	20	.787	20	.787	20	.787	20	.315	8	.799	20.3	4.921	125	1.614	41	.138	3.5	E	GWP○400	CS0520W	LW-4
GTWP□2525M-4E20	○	○	.157	4	.787	20	.984	25	.984	25	.984	25	.354	9	.996	25.3	5.906	150	1.732	44	.138	3.5	E	GWP○400	CS0625W	LW-5
GTWP□2020K-5F10	○	○	.197	5	.394	10	.787	20	.787	20	.787	20	.315	8	.799	20.3	4.921	125	1.142	29	.177	4.5	F	GWP○500	CS0520W	LW-4
GTWP□2525M-5F10	○	○	.197	5	.394	10	.984	25	.984	25	.984	25	.354	9	.996	25.3	5.906	150	1.260	32	.177	4.5	F	GWP○500	CS0625W	LW-5
GTWP□2020K-5F20	○	○	.197	5	.787	20	.787	20	.787	20	.787	20	.315	8	.799	20.3	4.921	125	1.614	41	.177	4.5	F	GWP○500	CS0520W	LW-4
GTWP□2525M-5F20	○	○	.197	5	.787	20	.984	25	.984	25	.984	25	.354	9	.996	25.3	5.906	150	1.732	44	.177	4.5	F	GWP○500	CS0625W	LW-5
GTWP□2020K-6G12	○	○	.236	6	.472	12	.787	20	.787	20	.787	20	.315	8	.801	20.35	4.921	125	1.339	34	.209	5.3	G	GWP○600	CS0520W	LW-4
GTWP□2525M-6G12	○	○	.236	6	.472	12	.984	25	.984	25	.984	25	.354	9	.998	25.35	5.906	150	1.457	37	.209	5.3	G	GWP○600	CS0625W	LW-5
GTWP□2020K-6G25	○	○	.236	6	.984	25	.787	20	.787	20	.787	20	.315	8	.801	20.35	4.921	125	1.929	49	.209	5.3	G	GWP○600	CS0520W	LW-4
GTWP□2525M-6G25	○	○	.236	6	.984	25	.984	25	.984	25	.984	25	.354	9	.998	25.35	5.906	150	2.047	52	.209	5.3	G	GWP○600	CS0625W	LW-5

GKWP





Recommended tightening torque 7.0[N・m]

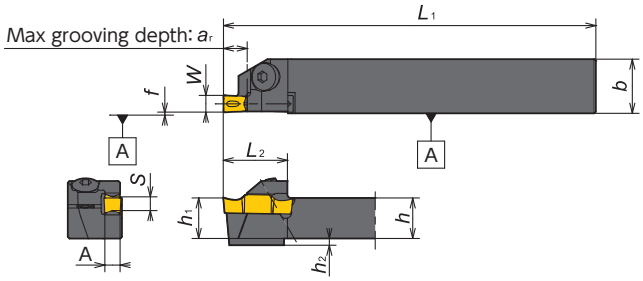
・L-hand shown

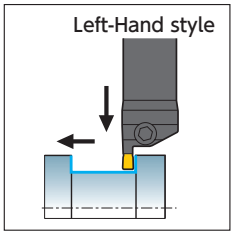
Holder Number	Stock		Width w		Max. Grooving Depth a_r		Dimensions										Seat Size s	Applicable Insert	Spare Parts	
							h		b		h_1		h_2		f		L_1		L_2		A				Bolt	Wrench
	R	L	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)				
GKWP□2020K-3D10		○	.118	3	.394	10	.787	20	.787	20	.787	20	.315	8	1.260	32	4.921	125	.906	23	.102	2.6	D	GWP○300	CS0520W	LW-4
GKWP□2020K-4E10		○	.157	4	.394	10	.787	20	.787	20	.787	20	.315	8	1.260	32	4.921	125	.906	23	.138	3.5	E	GWP○400	CS0520W	LW-4
GKWP□2020K-5F10		○	.197	5	.394	10	.787	20	.787	20	.787	20	.315	8	1.260	32	4.921	125	.906	23	.177	4.5	F	GWP○500	CS0520W	LW-4
GKWP□2020K-6G12		○	.236	6	.472	12	.787	20	.787	20	.787	20	.315	8	1.339	34	4.921	125	.906	23	.209	5.3	G	GWP○600	CS0520W	LW-4

Groove DUO

GTWP

For Swiss Style Machine



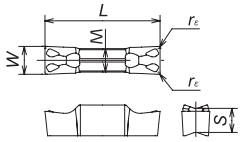
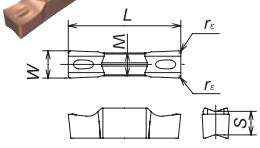


Right-Hand style shown

● Toolholder

Gage Insert	Item Number	Figure	Stock R	Stock L	Groove Width w (Inch)	Groove Width w (mm)	a_r (Inch)	a_r (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	h_2 (Inch)	h_2 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	A (Inch)	A (mm)	Seat Size s	Clamp Screw	Wrench
GWP ○ 300	GTWP※08-IN3D07	1	●		.118	3	.275	7	1/2		.630	16	1/2		4.724	120	0	0	.012	0.3	.748	19	.102	2.6	D	AOB-5 × 14	LW-3S
	GTWP※10-IN3D09	1	●		.118	3	.354	9	5/8		.630	16	5/8		4.724	120	0	0	.012	0.3	.866	22	.102	2.6	D	AOB-5 × 16	LW-3S
	GTWP※1016-3D07	1	○		.118	3	.275	7	.394	10	.630	16	.472	12	4.724	120	.079	2	.012	0.3	.748	19	.102	2.6	D	AOB-5 × 14	LW-3S
	GTWP※1216-3D07	1	●	○	.118	3	.275	7	.472	12	.630	16	.472	12	4.724	120	0	0	.012	0.3	.768	19.5	.102	2.6	D	AOB-5 × 16	LW-3S
	GTWP※1616-3D09	1	○	○	.118	3	.354	9	.630	16	.630	16	.630	16	4.724	120	0	0	.012	0.3	.866	22	.102	2.6	D	AOB-5 × 16	LW-3S
GWP ○ 400	GTWP※08-IN4E07	1	●		.157	4	.275	7	1/2		.630	16	1/2		4.724	120	0	0	.012	0.3	.748	19	.138	3.5	E	AOB-5 × 14	LW-3S
	GTWP※10-IN4E09	1	●		.157	4	.354	9	5/8		.630	16	5/8		4.724	120	0	0	.012	0.3	.866	22	.138	3.5	E	AOB-5 × 16	LW-3S
	GTWP※1016-4E07	1	○		.157	4	.275	7	.394	10	.630	16	.472	12	4.724	120	.079	2	.012	0.3	.748	19	.138	3.5	E	AOB-5 × 14	LW-3S
	GTWP※1216-4E07	1	●	○	.157	4	.275	7	.472	12	.630	16	.472	12	4.724	120	0	0	.012	0.3	.768	19.5	.138	3.5	E	AOB-5 × 16	LW-3S
	GTWP※1616-4E09	1	○	○	.157	4	.354	9	.630	16	.630	16	.630	16	4.724	120	0	0	.012	0.3	.866	22	.138	3.5	E	AOB-5 × 16	LW-3S
GWP ○ 500	GTWP※1016-5F07	1	○		.197	5	.275	7	.394	10	.630	16	.472	12	4.724	120	.079	2	.012	0.3	.748	19	.177	4.5	F	AOB-5 × 14	LW-3S
	GTWP※1216-5F07	1	○	○	.197	5	.275	7	.472	12	.630	16	.472	12	4.724	120	0	0	.012	0.3	.768	19.5	.177	4.5	F	AOB-5 × 16	LW-3S
	GTWP※1616-5F09	1	○	○	.197	5	.354	9	.630	16	.630	16	.630	16	4.724	120	0	0	.012	0.3	.866	22	.177	4.5	F	AOB-5 × 16	LW-3S
GWP ○ 600	GTWP※1020-6G07	1	○		.236	6	.275	7	.394	10	.787	20	.394	10	4.724	120	.079	2	.012	0.3	.866	22	.209	5.3	G	AOB-5 × 14	LW-3S
	GTWP※1220-6G07	1	○		.236	6	.275	7	.472	12	.787	20	.472	12	4.724	120	0	0	.012	0.3	.886	22.5	.209	5.3	G	AOB-5 × 16	LW-3S
	GTWP※1620-6G09	1	○	○	.236	6	.354	9	.630	16	.787	20	.630	16	4.724	120	0	0	.012	0.3	.984	25	.209	5.3	G	AOB-5 × 16	LW-3S

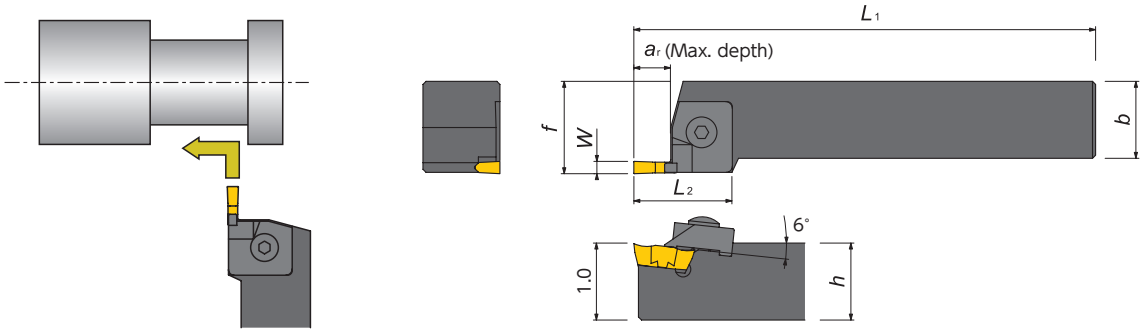
Groove DUO Series - Inserts

Shape	Item Number	w Groove Width (Inch)	w Groove Width (mm)	w Width Tolerance (Inch)	w Width Tolerance (mm)	r_ε (Inch)	r_ε (mm)	M (Inch)	M (mm)	L (Inch)	L (mm)	Seat Size s	Coated Carbide DM4
  GWPG: Outside ground GWPM: Full-molded ●Excellent chip control ●Best for side turning	GWPG300N02D-GW	.118	3.0	.001	± 0.025	.008	0.2	.098	2.5	.811	20.6	D	●
	GWPG300N04D-GW	.118	3.0	.001	± 0.025	.016	0.4	.098	2.5	.811	20.6	D	●
	GWPG400N02E-GW	.157	4.0	.001	± 0.025	.008	0.2	.134	3.4	.811	20.6	E	●
	GWPG400N04E-GW	.157	4.0	.001	± 0.025	.016	0.4	.134	3.4	.811	20.6	E	●
	GWPG400N08E-GW	.157	4.0	.001	± 0.025	.031	0.8	.134	3.4	.811	20.6	E	●
	GWPG500N02F-GW	.197	5.0	.001	± 0.025	.008	0.2	.169	4.3	.811	20.6	F	○
	GWPG500N04F-GW	.197	5.0	.001	± 0.025	.016	0.4	.169	4.3	.811	20.6	F	○
	GWPG500N08F-GW	.197	5.0	.001	± 0.025	.031	0.8	.169	4.3	.811	20.6	F	○
	GWPG600N02G-GW	.236	6.0	.001	± 0.025	.008	0.2	.205	5.2	1.008	25.6	G	○
	GWPG600N04G-GW	.236	6.0	.001	± 0.025	.016	0.4	.205	5.2	1.008	25.6	G	○
	GWPG600N08G-GW	.236	6.0	.001	± 0.025	.031	0.8	.205	5.2	1.008	25.6	G	○
	GWPM300N04D-GW	.118	3.0	.002	± 0.05	.016	0.4	.098	2.5	.811	20.6	D	○
	GWPM400N04E-GW	.157	4.0	.002	± 0.05	.016	0.4	.134	3.4	.811	20.6	E	○
	GWPM500N04F-GW	.197	5.0	.002	± 0.05	.016	0.4	.169	4.3	.811	20.6	F	○
	GWPM600N04G-GW	.236	6.0	.002	± 0.05	.016	0.4	.205	5.2	1.008	25.6	G	○
  ●Less tool pressure design	GWPG300N02D-GV	.118	3.0	.001	± 0.025	.008	0.2	.205	2.5	.811	20.6	D	●
	GWPG300N04D-GV	.118	3.0	.001	± 0.025	.016	0.4	.205	2.5	.811	20.6	D	●
	GWPG400N02E-GV	.157	4.0	.001	± 0.025	.008	0.2	.169	4.3	.811	20.6	E	●
	GWPG400N04E-GV	.157	4.0	.001	± 0.025	.016	0.4	.169	4.3	.811	20.6	E	●
	GWPG500N02F-GV	.197	5.0	.001	± 0.025	.008	0.2	.169	4.3	.811	20.6	F	○
	GWPG500N04F-GV	.197	5.0	.001	± 0.025	.016	0.4	.169	4.3	.811	20.6	F	○
	GWPG600N02G-GV	.236	6.0	.001	± 0.025	.008	0.2	.169	4.3	1.008	25.6	G	○
	GWPG600N04G-GV	.236	6.0	.001	± 0.025	.016	0.4	.169	4.3	1.008	25.6	G	○

● : Stock ○ : 1-2 week delivery

Grooving / Side Turning

VGT Clamp-on type



・Right hand shown

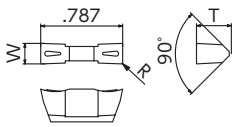
● Toolholders

Item Number	Stock		Groove size covered	Dimensions (inch)						Insert
	R	L	Width	h	b	L_1	L_2	f	a_r	
VGT R/L 16-3	●	●	.115 - .153	1.0	1.0	6.0	32	1.18	.470	VGE 
VGT R/L 16-4	●	●	.154 - .220	1.0	1.0	6.0	32	1.18	.470	
VGT R/L 16-6	●	●	.221 - .292	1.0	1.0	6.0	32	1.18	.470	

● Spare Parts

Holder	Clamp			Clamp screw		Spring		Wrench	
		Stock			Stock		Stock		Stock
		R	L						
VGT R/L 16-3	CV R/L 3N	○	○	AOB-6N	○	ASG-6	○	LW-4	●
VGT R/L 16-4	CV R/L 4N	○	●						
VGT R/L 16-6	CV R/L 6	○	○						

VGE

		P	M	K	N	S	H
Steel	P	●	●	●	●	●	●
Stainless Steel	M	●	●	●	●	●	●
Cast Iron	K	●	●		●		
Non-Ferrous Material	N	●	●			●	●
Heat Resistant Alloy	S						●
Hardened Material	H						●

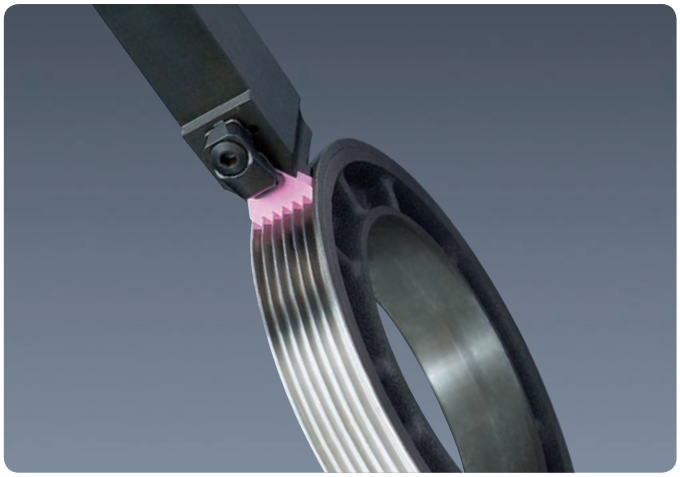
Item Number	W	R	T	Cermet					Carbide							
							PVD Coated			PVD Coated						CVD
				XT3	C7X	XN4	Q15	C7Z	KM1	DM4	DT4	TM4	QM3	VM1	ZM3	CP1
VGE 125N008	.125	.008	.205			●										
VGE 125N015	.125	.015	.205			●										
VGE 156N015	.156	.015	.335			●										
VGE 188N015	.188	.015	.335			●										
VGE 250N015	.250	.015	.335			●										

● : 1st Choice ● : Alternate choice
● : Stock ○ : 1-2 week delivery

Machining Poly-V Pulley Profiles

Grooving With Ceramics





Features

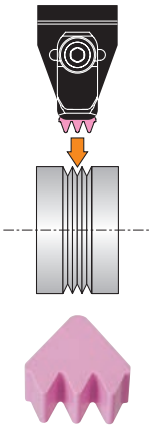
- *High speed machining with Poly-V pulleys*
- *Up to 6-V grooving with single pass*
- *Precision inserts for plunging profiles*



Recommended Cutting Conditions

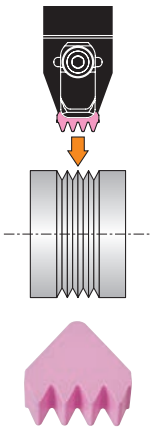
Material	Grade	Cutting speed (SFM)	Feed (IPR)	DRY	WET
Gray cast iron	**HW2**	1000–2000	.002–.006	●	

3V ➡H20



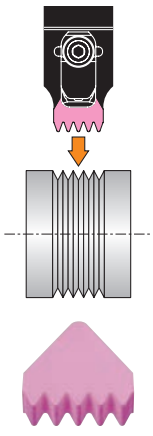
21 HP needed

4V ➡H21



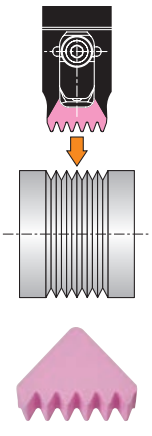
28 HP needed

5V ➡H22



35 HP needed

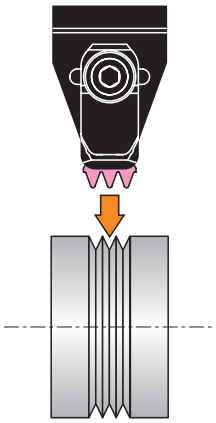
6V ➡H23

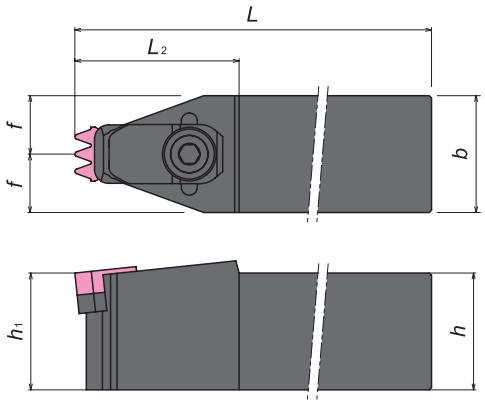


42 HP needed

POLY-V (3V) Clamp-on type

21 HP Needed





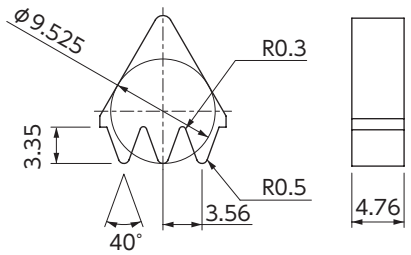
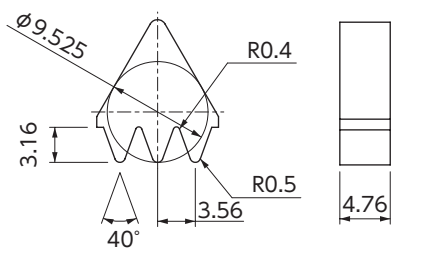
● Toolholders

Item Number	Stock	Dimensions (inch)						Insert
		h	*b*	h_1	*L*	L_2	*f*	
POLY-V163	●	1.00	1.00	1.00	6.00	.50	1.40	PTM33K30..

● Spare Parts

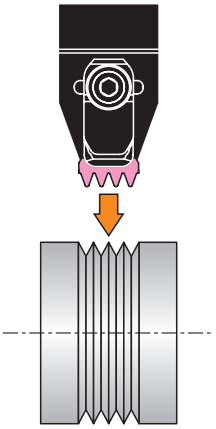
Holder	Clamp		Thrust Plate		Shim		Shim-Screw	
		Stock		Stock		Stock		Stock
POLY-V163	2417-C	●	9414-C	●	K3-C	●	1230-C	●

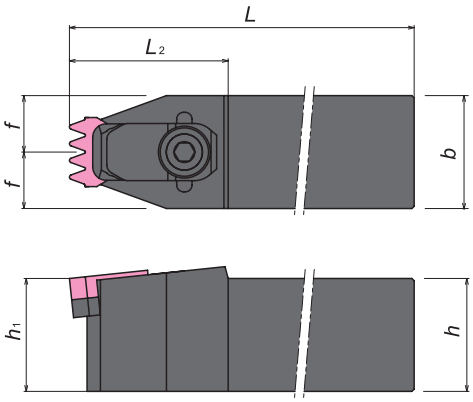
● Insert

Shape	PTM33K305ENB	HW2	PTM33K30504ENB	HW2
	(mm) 	●	(mm) 	●

POLY-V(4V) Face Grooving

28 HP Needed

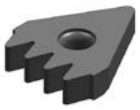




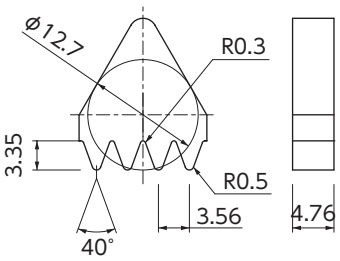
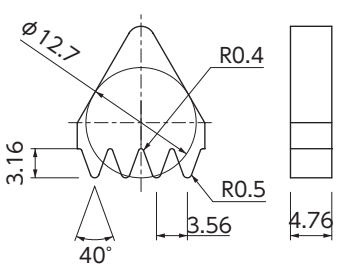
Toolholders

Item Number	Stock	Dimensions (inch)						Insert
		h	*b*	h_1	*L*	L_2	*f*	
POLY-V164	●	1.00	1.00	1.00	6.00	.50	1.40	PTM43K40..

Spare Parts

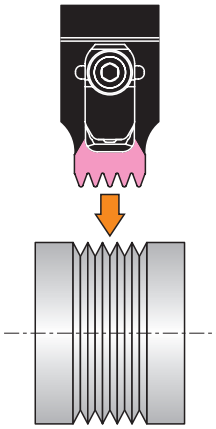
Holder	Clamp		Thrust Plate		Shim		Shim-Screw	
		Stock		Stock		Stock		Stock
POLY-V164	2417-C	●	9414-C	●	K4-C	●	1230-C	●

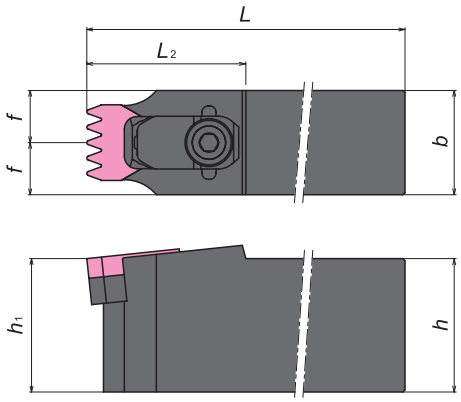
Insert

Shape	PTM43K405ENB	HW2	PTM43K40504ENB	HW2
	(mm) 	●	(mm) 	●

POLY-V (5V) Clamp-on type

35 HP Needed





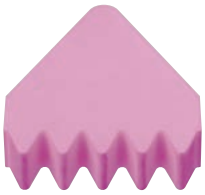
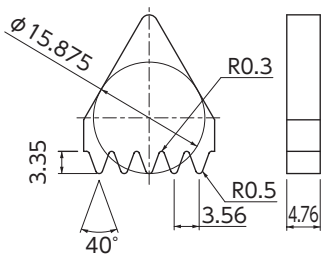
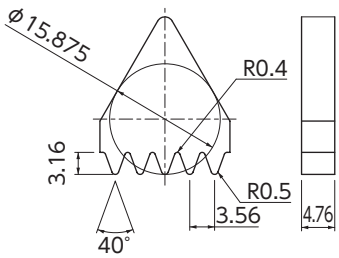
● Toolholders

Item Number	Stock	Dimensions (inch)						Insert
		h	*b*	h_1	*L*	L_2	*f*	
POLY-V205	●	1.25	1.25	1.25	7.00	.625	1.50	PTM53K50..

● Spare Parts

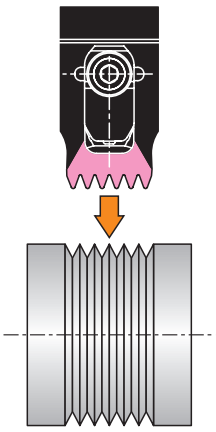
Holder	Clamp		Thrust Plate		Shim		Shim-Screw	
		Stock		Stock		Stock		Stock
POLY-V205	2417-C	●	9414-C	●	K5-C	●	1230-C	●

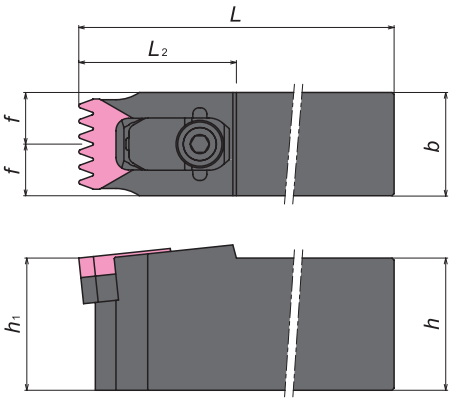
● Insert

Shape	PTM53K505ENB	HW2	PTM53K50504ENB	HW2
	(mm) 	●	(mm) 	●

POLY-V(6V) Face Grooving

42 HP Needed

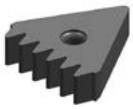




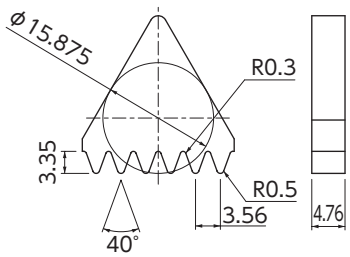
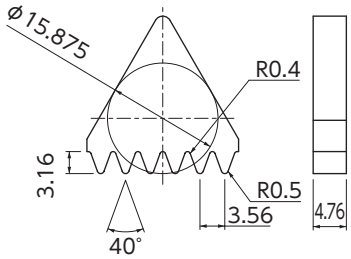
Toolholders

Item Number	Stock	Dimensions (inch)						Insert
		h	*b*	h_1	*L*	L_2	*f*	
POLY-V206	●	1.25	1.25	1.25	7.00	.625	1.50	PTM53K60..

Spare Parts

Holder	Clamp		Thrust Plate		Shim		Shim-Screw	
		Stock		Stock		Stock		Stock
POLY-V206	2417-C	●	9414-C	●	K6-C	●	1230-C	●

Insert

Shape	PTM53K605ENB	HW2	PTM53K60504ENB	HW2
	(mm) 	●	(mm) 	●

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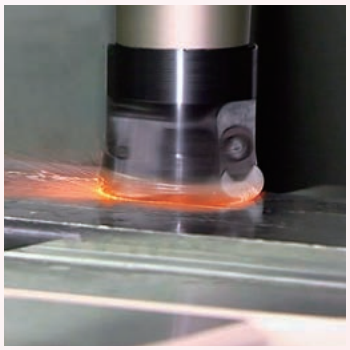


Milling Cutters

- Overview ····· I 2
- Milling with NTK Grades by Application ····· I 4
- Hard Milling Guideline ····· I 5
- For Heat Resistant Alloys and Hardened Materials ····· I 6
- For Gray / Ductile Cast Iron ··· I 8
- Required Machine Horse Power Chart ····· I 21
- For Aluminum ····· I 22

Heat Resistant Alloys and Hardened Materials

Features

- *High performance milling cutter line that uses round-shaped inserts for machining both aerospace and hardened steels*
- *SX7, the new SiAlON grade, has the best performance for high speed machining of high temperature alloys*







AHM Accel High Speed Mill series ➡ I 6 • I 7

Gray / Ductile cast iron

XFM Xtreme Feed Mill series ➡ I 8



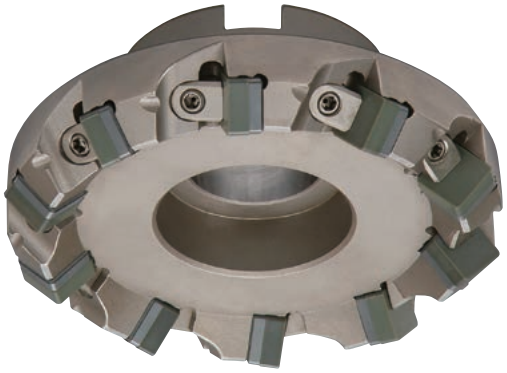
Features

- *Large DOC is possible because of the fine pitch of inserts which results in higher productivity*
- *LNX Insert comes with special chipbreaker to reduce tool pressure*

88° Lead angle

A.R.–4°
R.R.0°

HVM High Velocity Mill series ➡ I 10, I 12, I 14



Features

- *Extremely economical 8-corner inserts*
- *Covers various applications with 45, 75, and 88 degree angle milling cutter*
- *Ceramic inserts with chipbreaker and wiper are also available*

45° Lead angle

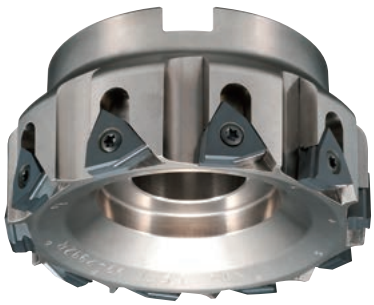
75° Lead angle

88° Lead angle

A.R.–6°
R.R.–10°

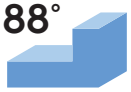
● : Stock ○ : 1-2 week delivery

TRI series ➡ I 16



Features

- *Stable gray cast iron milling with lower cutting forces*
- *Maximizes ceramic insert potential and can mill faster than 3,200 SFM*



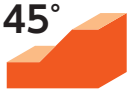
A.R. 5°
R.R. 4°, 7°, 10°

HSM High Speed Shear Mill series ➡ I 17-I 19



Features

- *Positive inserts reduce tool pressure and produces excellent surface finishes in addition to long tool life*
- *Best for milling thin parts thanks to reduced tool pressure*





A.R.+12°
R.R.0°

JQ series ➡ I 20



Features

- *Capable of 90-degree shoulder milling*
- *A variety of cutter diameters as small as .787 (ϕ20mm)*





Aluminum

HPC High Performance Cutter series ➡ I 22







Features

- *A wide range of cutter diameters from ϕ.787" (20mm) to ϕ3.937" (100mm)*
- *Strong rigid steel bodies*
- *With the fixed-type cutters, no time-consuming presetting is required*

Milling with NTK Grades by Application

General Guidelines for Successful Milling

- *Select the best grade for the application*
- *Select cutter diameter 1.5 times greater than the workpiece width*
- *Eliminate any overhang to increase stability*
- *Choose the strongest nose radius*
- *No Coolant. Use compressed air*
- *Check clamp and part rigidity*



Guidelines for Successful Milling by Material

Heat resistant alloy / PH stainless steel

- *Down or climb milling where the chip thins upon exit is the preferred method for HNBA materials*
- *Reduce feed rate 50% upon entrance and exit*
- *Do not recut side walls as this can cause work hardening*
- *Use balanced shell mill adapter or shrink fit for end-mills*
- *As DOC gets thinner the feed must be increased to compensate for heat loss*
- *Use RPG geometries if tool pressure is a problem*

Hardened Steel / Die mold / Chilled iron / Overlay

- *Larger edge preparations need to be used*
- *Speed is reduced as hardness goes up*

Cast iron / Ductile cast iron

- *Parts that are cast are more difficult to machine than forged • decrease feed rates by 25%*
- *Maximize feed rates for gray cast irons*

Trouble shooting

Material	Insert Grade	NTK Grade	Problem	Solution					
				Speed	Feed	DOC	Edge Prep.	Insert Grade	Others
Stainless Steel	Cermet	C7X	Chipping	—	↘	—	—	—	—
			BUE	↗	—	—	—	—	—
			Break	—	↘	↘	—	—	—
Hardened Steel	Ceramic	HC7 WA1	Chipping	—	↘	—	Wider	—	—
			Break	↘	↘	—	—	—	—
Cast Iron	Silicon Nitride	SX6 SP9	Chipping	↘	↘	—	Wider	—	—
			Break	↘	↘	↘	—	Tougher	Larger radius
			Themal Crack	↘	↘	—	—	—	—
			Crater Wear	—	—	—	Sharper	—	—
Heat Resistant Alloy	SiAlON	SX9 SX7	Notching	↗	↗	Vary / ↘	Wider	—	Pre-chamfer parts
			Flank Wear	↘	↗	—	—	Harder	—
			Chipping	—	—		Wider	Tougher	—
			Break	↘	—	↘	—	Tougher	—
			Tool Pressure	—	—	—	—	—	Use RPG insert

Hard Milling with WA1

Mill hardened materials (HRC 45-62) Reduce costs and eliminate grinding

- *Rapid metal removal rates*
- *Achieve outstanding surface finishes*
- *Increase tool life vs carbides*
- *Versatile round inserts geometries provide clearance in every direction*



Target Industries

- *Mold Shops*
- *Food processing*
- *Tool & Die*
- *Forging*
- *Mining*

Application Materials

- *Tool Steels*
- *Chilled Irons*
- *Stellite*
- *Mold Steels*
- *Powered Metal*
- *Weld Overlays*

Cutters



➡ I 6



➡ I 6



➡ I 7

Insert

- *Grade* ***WA1***
- *Shape*
  RPG : Low tool pressure
  RNG : More rigidity

Recommend Cutting Conditions

INSERT	DOC	HRC 45-55		HRC 55-60		HRC 60-62	
		Cutting Speed (SFM)	Feed (IPT)	Cutting Speed (SFM)	Feed (IPT)	Cutting Speed (SFM)	Feed (IPT)
RPG-21.51	.030"	850 - 1000	.004"	700 - 900	.003"	550 - 800	.0025"
RPG-32	.045"	850 - 1200	.0045"	700 - 1100	.003"	550 - 1000	.0025"
RPG-43	.050"	850 - 1300	.005"	700 - 1200	.0035"	550 - 1100	.003"
RNG-32	.045"	850 - 1200	.0045"	700 - 1100	.0045"	550 - 1000	.0025"
RNG-43	.045"	850 - 1400	.0045"	700 - 1300	.045"	550 - 1200	.003"
RNG45	.075"	850 - 1400	.005"	700 - 1300	.004"	550 - 1200	.003

Note : Speeds and Feeds are approximately starting points

Guidelines for Success

- *Minimize overhang and have ridged set-ups*
- *Keep cutter engagement to 1/2 to 5/8 of the cutter diameter*
- *Reduce feed upon entrance and exit of the cut by 25%*
- *Use air blast without coolant*
- *Use helical interpolation to ramp down into a cavity*
- *Increase feed rates in corners to compensate for heat loss*
- *Use climb milling*
- *Use shrink fit holders whenever possible*
- *Safety first-do not exceed SFM*
- *As DOC get smaller speed should accelerate to compensate for heat loss*
- *Adjust speed to maximize plastic deformation*

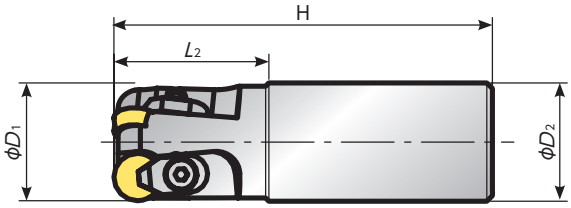
AHM series

ccel igh speed ill

* Recommend using torque wrench @35lbs (4Nm)



A.R.+5°
R.R.-7°30'



● Inch size cutters

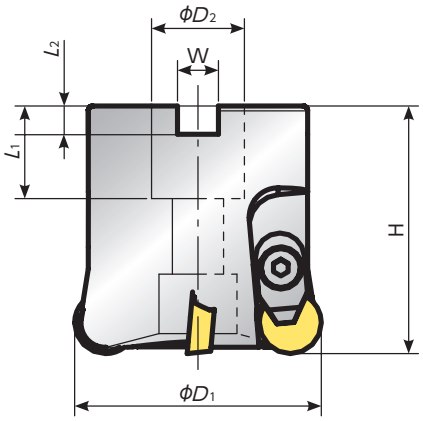
Item Number	Stock		Dimensions (inch)				Clamp	Clamp Screw	Weight (lbs)	Insert
			ϕD_1	D_2	H	L_2				
RPIW0625E0625R02	●	2	.625	.625	3.160	1.250	US6000926	US6000927	0.2	RPG 21.5
RPIW075E075R02	●	2	.750	.750	3.270	1.220	AMS-3	AOB-3S	0.4	RPG 21.5
RPIW100E100R03	●	3	1.000	1.000	3.270	1.000	AMS-4	AOB-4S	0.6	RPG 32
RPIW125E125R03	●	3	1.250	1.250	4.000	1.640	AMS-5T	AOB-5S-T25	1.1	RPG 43
RPIW150E150R03	●	3	1.500	1.500	4.000	1.830			1.6	

● Metric size cutters

Item Number	Stock		Dimensions (㎜)				Clamp	Clamp Screw	Weight (kg)	Insert
			ϕD_1	D_2	H	L_2				
JRPMW032E250R03	○	3	32	25	120	40	AMS-5T	AOB-5S-T25	0.4	RPG 43
JRPMW032E320R03	○		32	32					0.6	
JRPMW040E320R03	○		40	32					0.7	



A.R.+5°
R.R.-2°30' ~ -5°



● Inch size cutters

Item Number	Stock		Dimensions (inch)						Shim	Shim Screw	Clamp	Clamp Screw	A.R.	R.R.	Weight (lbs)	Insert
			ϕD_1	H	D_2	W	L_1	L_2								
RPIW200S075R04	●	4	2.00	2.00	.750	.32	.75	.22	ARP42A	M3＊8	AMS-5T	AOB-5S-T25	+5°	+5°	0.9	RPG 43
RPIW300S100R05	●	5	3.00	2.00	1.000	.38	.75	.22					+5°	+5°	2.0	
RPIW400S125R06	●	6	4.00	2.00	1.250	.50	.82	.30					+5°	+5°	4.2	

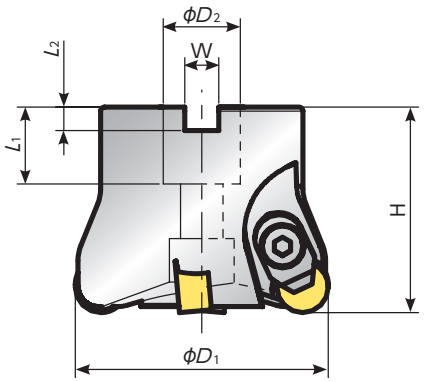
● Metric size cutters

Item Number	Stock		Dimensions (㎜)						Shim	Shim Screw	Clamp	Clamp Screw	A.R.	R.R.	Weight (kg)	Insert
			ϕD_1	H	D_2	W	L_1	L_2								
JRPMW050S220R04	○	4	50	50	22	10.4	20	6.3	ARP42A	M3＊8	AMS-5T	AOB-5S-T25	+5°	+5°	0.4	RPG 43
JRPMW063S220R04	○	4	63	50	22	10.4	20	6.3					+5°	+5°	0.6	
JRPMW080S254R05	○	5	80	50	25.4	9.5	25	6.0					+5°	+2°30′	0.9	

● : Stock ○ : 1-2 week delivery



A.R.–5°
R.R.–10°



● Inch size cutters

Item Number	Stock		Dimensions (inch)						Clamp	Clamp Screw	Weight (lbs)	Insert
			ϕD1	H	ϕD2	W	L1	L2				
RNIW200S075R04-43	●	4	2.00	2.00	.750	.32	.75	.22	AMS-6T	AOB-6S-T30	1.0	RNG 43
RNIW200S075R03	●	3	2.00	2.00	.750	.32	.75	.22			1.0	RNG 45
RNIW250S075R04	●	4	2.50	2.00	.750	.32	.75	.22			1.3	
RNIW300S100R05	●	5	3.00	2.00	1.000	.38	.75	.22			1.6	
RNIW400S125R06	●	6	4.00	2.00	1.250	.51	.82	.30			4.2	

● Metric size cutters

Item Number	Stock		Dimensions (mm)						Clamp	Clamp Screw	Weight (kg)	Insert
			ϕD1	H	ϕD2	W	L1	L2				
JRNMW050S220R03	○	3	50	50	22	10.4	20	6.3	AMS-6T	AOB-6S-T30	0.4	RNG 45
JRNMW063S220R04	○	4	63	50	22	10.4	20	6.3			0.6	
JRNMW080S254R05	○	5	80	50	25.4	9.5	25	6.0			0.9	

● Recommend Cutting Conditions

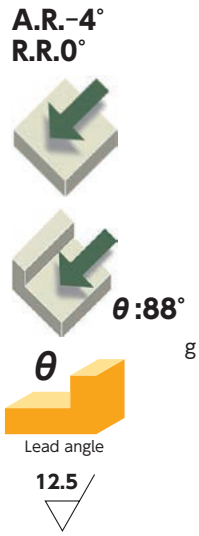
Work Material		Grade	Dry	Wet	Cutting Speed (SFM) 200 700 1200 1700 2200 2700 3200 3700	Feed (IPT) .002 .003 .004 .005 .006 .007	Depth of Cut (inch)
S		SX7	●				~.150
Heat Resistant Alloys		SX9	●				~.150
H		WA1	●	○			~.150
Hardened Steel	HRC 45-55	HC7	●	○			~.150
	HRC 55-65	WA1	●	○			~.150
		HC7	●	○			~.150

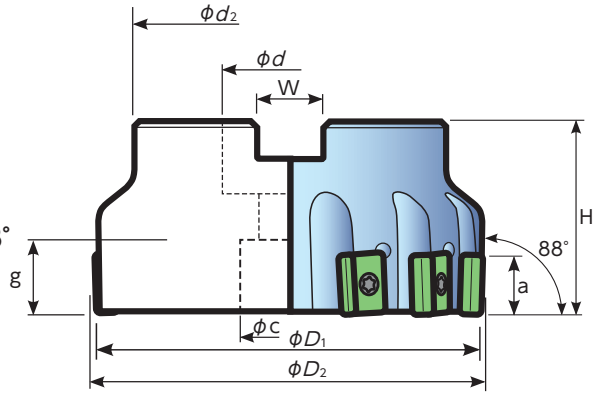
Inserts (RNG) ➡E10
Inserts (RPG) ➡E11

XFM (treme eed ill) series

Lead angle 88 degress - LNX324 〈A.R.-4° ,R.R.0°〉







Inch size cutters

Item Number	Stock		Dimensions (inch)									Weight (lbs)	Insert
			ϕD_1	ϕD_2	H	a	ϕ d	W	ϕ d_2	ϕ c	g		
JXTM15IN-88-4R	●	4	1.50	1.55	1.75	.551	.750	.32	1.350	.610	—	1.0	 LNX 324
JXTM20IN-88-6R	●	6	2.00	2.05	2.00	.551	.750	.32	1.770	.610	—	1.0	
JXTM25IN-88-8R	●	8	2.50	2.55	2.00	.551	1.000	.38	2.000	.760	—	1.5	
JXTM30IN-88-10R	●	10	3.00	3.04	2.00	.551	1.000	.38	2.362	.827	.539	2.4	
JXTM40IN-88-13R	●	13	4.00	4.04	2.00	.551	1.500	.64	3.150	2.000	.870	3.9	
JXTM50IN-88-16R	●	16	5.00	5.04	2.00	.551	1.500	.64	3.740	2.000	.870	6.5	
JXTM60IN-88-18R	●	18	6.00	6.05	2.00	.551	2.000	.75	4.000	2.800	1.120	8.0	

Metric size cutters

Item Number	Stock		Dimensions (㎜)									Weight (kg)	Insert
			ϕD_1	ϕD_2	H	a	ϕ d	W	ϕ d_2	ϕ c	g		
JXTM080-88-10R	○	10	80	83	50	14	25.4	9.5	58	36	14	1.1	 LNX 324
JXTM100-88-13R	○	13	100	103	50	14	31.75	12.7	77	50	17	1.8	
JXTM125-88-16R	○	16	125	128	58	14	38.1	15.9	77	55	22	3.1	

Spare Parts

Insert Screw	Wrench
	
LRIS-4＊12	LLR-25S

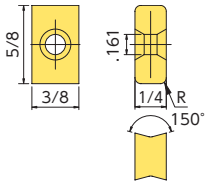
Screw Drivers (OP)

Bit	Handle	Handle & Bit
		
HLR-25S	XX2815-04	XX2815-04-25S

● : Stock ○ : 1-2 week delivery

Inserts





Item Number	R	Silicon Nitride	
		SX6	SP9
LNX 324-02 T0420 (LNX 324-08 T01020)	.031	●	●
LNX 324-03 T0420 (LNX 324-12 T01020)	.047	●	●
LNX 324-04 T0420 (LNX 324-16 T01020)	.063	●	●

* Recommend using torque wrench @35lbs (4Nm)

Recommend Cutting Conditions

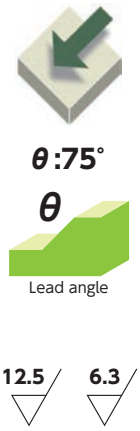
Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 700 1200 1700 2200 2700 3200 3700 4200	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
K						
Gray Cast Iron	**SX6**	●	●			~.300
Gray Cast Iron	**SP9**	●	○			~.300
Ductile Iron	**SP9**	●	○			~.300

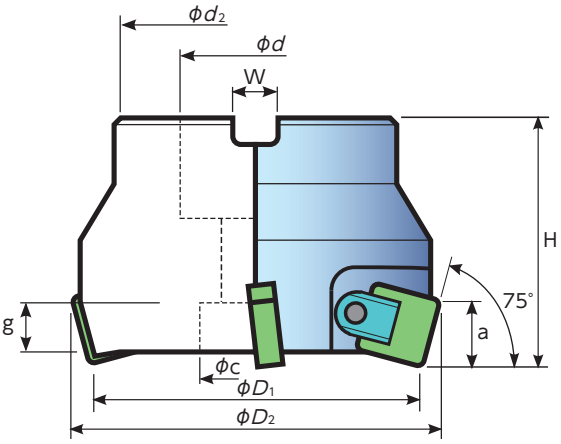
HVM series

High Velocity Mill

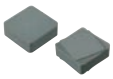
Lead angle 75 degree -SN43〈A.R. -6° R.R. -10°〉



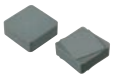


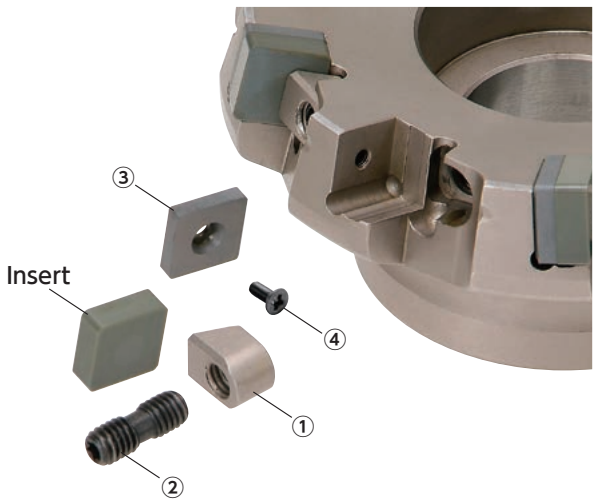


Inch size cutters

Item Number	Stock		Dimensions (inch)									Weight (lbs)	Insert
			ϕD1	ϕD2	H	a	ϕd	W	ϕd2	ϕc	g		
JFDX25IN-75-06R	●	6	2.50	2.732	2.00	.472	.750	.32	2.362	.669	.760	2.0	 SNG 43
JFDX30IN-75-08R	●	8	3.00	3.232	2.00	.472	1.000	.38	2.362	.827	.760	2.2	
JFDX40IN-75-10R	●	10	4.00	4.232	2.00	.472	1.500	.64	3.150	2.000	.850	3.3	
JFDX50IN-75-12R	●	12	5.00	5.232	2.00	.472	1.500	.64	3.740	2.000	.850	5.7	
JFDX60IN-75-16R	●	16	6.00	6.244	2.50	.472	2.000	.75	3.937	2.835	.945	8.8	

Metric size cutters

Item Number	Stock		Dimensions (mm)									Weight (kg)	Insert
			ϕD1	ϕD2	H	a	ϕd	W	ϕd2	ϕc	g		
JFDX063-75-06R	○	6	63	70	50	12	22.0	10.4	58	18	18.5	0.8	 SNG 43
JFDX080-75-08R	○	8	80	87	50	12	25.4	9.5	62	36	15.5	1.1	
JFDX080MM-75-08R		8	80	87	50	12	27.0	12.4	64	19	15.5	1.1	
JFDX100-75-10R	○	10	100	107	50	12	31.75	12.7	62	45	16.5	1.4	
JFDX100MM-75-10R		10	100	107	50	12	32.0	14.4	64	45	23.5	1.3	
JFDX125-75-12R	○	12	125	132	58	12	38.1	15.9	83	55	21.5	2.6	
JFDX125MM-75-12R		12	125	132	58	12	40.0	16.4	85	55	26.5	2.3	
JFDX160-75-16R		16	160	166	60	12	50.8	19	100	72	20.5	4.1	

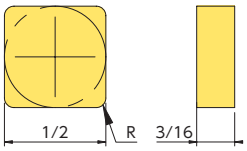
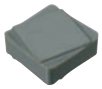
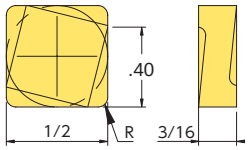
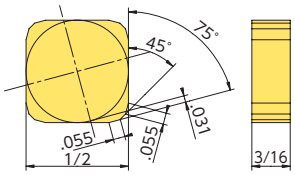


● : Stock ○ : 1-2 week delivery

Spare Parts

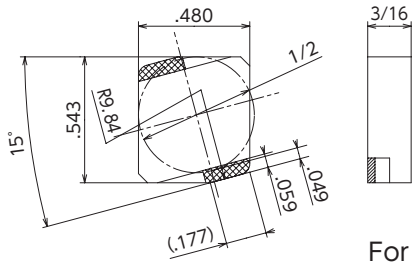
Wedge	Wedge Screw	Torx Wrench	Shim	Shim Screw
① 	②  T15	 T15	③ 	④ 
HLW175	WS0616-T15	T-15A	ASN423	M3×8

Inserts

Shape	Dimensions (inch)	Item Number	R	Silicon Nitride SX6	Silicon Nitride SP9	Whisker WA1	Cermet C7X
 12.5	 1/2 R 3/16	**SNG 432 T0220**	.031			●	
		SNG 432 T0420	.031	●	●	●	●
		SNG 433 T0220	.047			●	
		SNG 433 T0420	.047	●	●	●	●
		SNG 434 T0220	.063			●	
		SNG 434 T0420	.063	●	●	●	●
 12.5 with chipbreaker	 .40 1/2 R 3/16	**SNGF 433 TRCC413** Reduce tool pressure	.047	●			
		SNGF 433 RT0425 C421 Reduce tool pressure	.047		●		
 6.3 with wiper	 45° 75° .055 1/2 .055 .031 3/16	**SNG 43EN TN** The insert must be installed in all insert pockets	—	●	●		

* Recommend using torque wrench @35lbs (4Nm)

CBN Wiper Insert

Dimensions (inch)	Item Number	R	CBN B30	CBN B52
 .480 3/16 1/2 .543 R9.84 15° .059 .049 (.177) For θ =75°	**FDX 1204-75-50R**	—	●	●

Recommend Cutting Conditions

Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 700 1200 1700 2200 2700 3200 3700 4200	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
K Gray Cast Iron	SX6	●	●			~.220
	SP9	●	○			~.220
Ductile Iron	SP9	●	○			~.220
	C7X	●	○			~.220

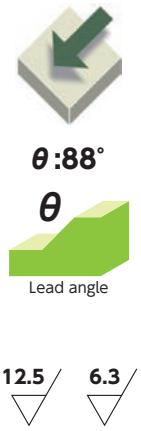
Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 200 400 600 800 1000 1200 1400 1600	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
P Stainless Steel	C7X	●	○			~.150
M Carbon Steel Alloy Steel	C7X	●	○	(-300 BHN)		~.120
				(300- BHN)		~.040

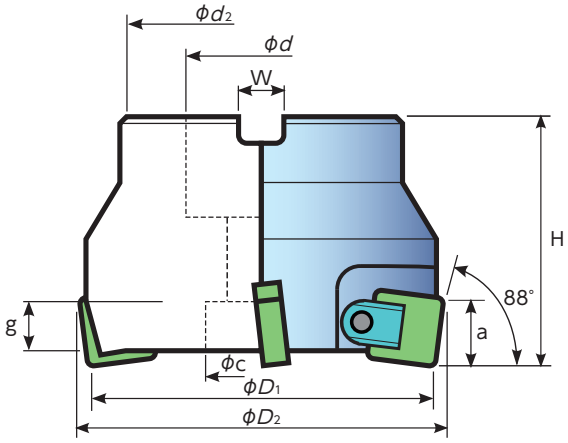
Inserts (SNG) ➡E13 • E40

HVM series
High Velocity Mill

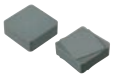
Lead angle 88 degree -SN43〈A.R. -6° R.R. -10°〉



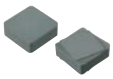


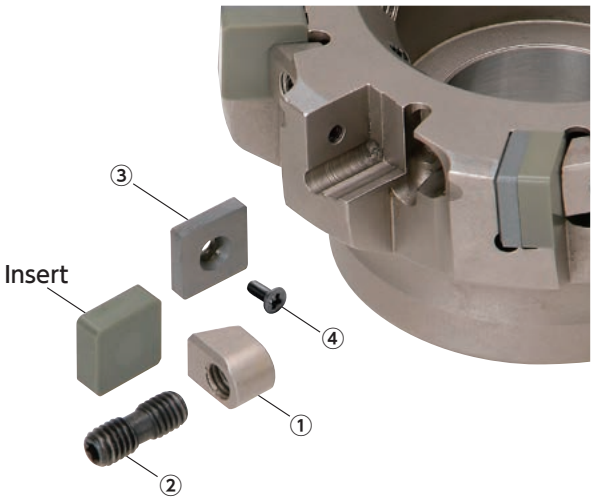


Inch size cutters

Item Number	Stock		Dimensions (inch)									Weight (lbs)	Insert
			ϕD1	ϕD2	H	a	ϕd	W	ϕd2	ϕc	g		
JFDX25IN-88-06R	●	6	2.50	2.531	2.00	.472	.750	.32	2.362	.669	.760	1.8	 SNG 43
JFDX30IN-88-08R	●	8	3.00	3.031	2.00	.472	1.000	.38	2.362	.827	.760	2.1	
JFDX40IN-88-10R	●	10	4.00	4.031	2.00	.472	1.500	.64	3.150	2.000	.850	3.2	
JFDX50IN-88-12R	●	12	5.00	5.031	2.00	.472	1.500	.64	3.740	2.000	.850	5.8	

Metric size cutters

Item Number	Stock		Dimensions (mm)									Weight (kg)	Insert
			ϕD1	ϕD2	H	a	ϕd	W	ϕd2	ϕc	g		
JFDX063-88-06R	○	6	63	64	50	12	22.0	10.4	58	18	13	0.8	 SNG 43
JFDX080-88-08R	○	8	80	81	50	12	25.4	9.5	62	36	13.5	1.0	
JFDX080MM-88-08R		8	80	81	50	12	27.0	12.4	64	19	13.5	1.1	
JFDX100-88-10R	○	10	100	101	50	12	31.75	12.7	62	45	16.5	1.4	
JFDX100MM-88-10R		10	100	101	50	12	32.0	14.4	64	45	23.5	1.3	
JFDX125-88-12R	○	12	125	126	58	12	38.1	15.9	83	55	21.5	2.6	
JFDX125MM-88-12R		12	125	126	58	12	40.0	16.4	85	55	26.5	2.5	
JFDX160-88-16R		16	160	156	60	12	50.8	19	100	72	20.5	4.1	

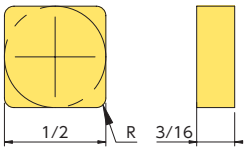
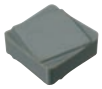
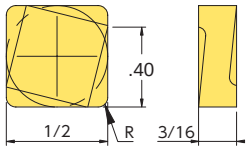
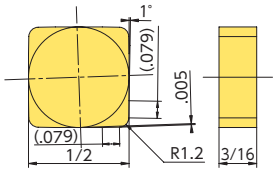


Spare Parts

Wedge	Wedge Screw	Torx Wrench	Shim	Shim Screw
① 	②  T15	 T15	③ 	④ 
HLW175	WS0616-T15	T-15A	ASN423	M3×8

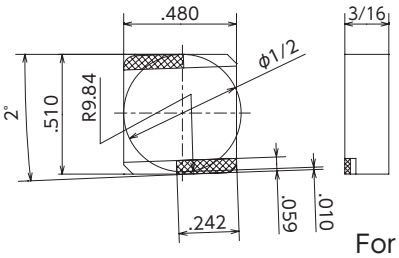
● : Stock ○ : 1-2 week delivery

Inserts

Shape	Dimensions (inch)	Item Number	R	Silicon Nitride SX6	Silicon Nitride SP9	Whisker WA1	Cermet C7X
 12.5	 1/2 R 3/16	**SNG 432 T0220**	.031			●	
		SNG 432 T0420	.031	●	●	●	●
		SNG 433 T0220	.047			●	
		SNG 433 T0420	.047	●	●	●	●
		SNG 434 T0220	.063			●	
		SNG 434 T0420	.063	●	●	●	●
 12.5 with chipbreaker	 .40 1/2 R 3/16	**SNGF 433 TRCC413** Reduce tool pressure	.047	●			
		SNGF 433 RT0425 C421 Reduce tool pressure	.047		●		
 6.3 with wiper	 1° (.079) .005 (.079) 1/2 R1.2 3/16	**SNEN 1204ZN T01025** The insert must be installed in all insert pockets	—	●	●		

* Recommend using torque wrench @35lbs (4Nm)

CBN Wiper Insert

Dimensions (inch)	Item Number	R	CBN B30	CBN B52
 .480 3/16 φ1/2 2° .510 R9.84 .242 .059 .010 For $\theta = 88°$	**FDX 1204-88-50R**	—	●	●

Recommend Cutting Conditions

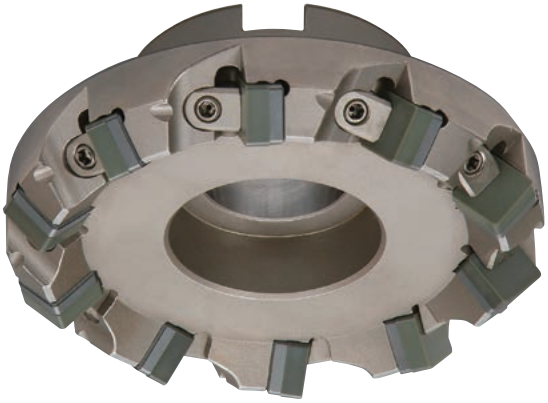
Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 700 1200 1700 2200 2700 3200 3700 4200	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
K Gray Cast Iron	SX6	●	●			~.220
	SP9	●	○			~.220
Ductile Iron	SP9	●	○			~.220
	C7X	●	○			~.220

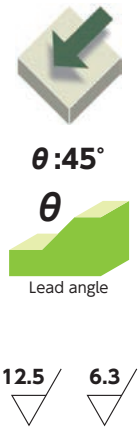
Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 200 400 600 800 1000 1200 1400 1600	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
P Stainless Steel	C7X	●	○			~.150
M Carbon Steel Alloy Steel	C7X	●	○	(~300 BHN)		~.120
				(300- BHN)		~.040

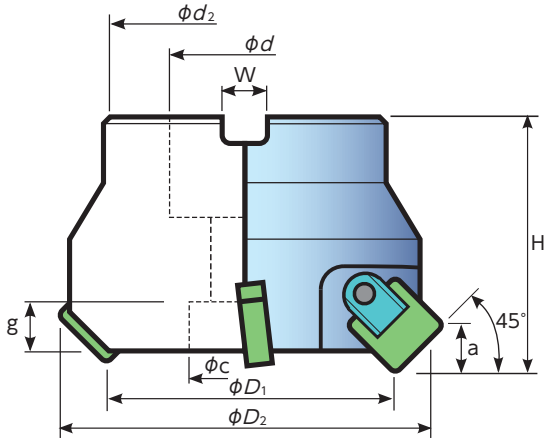
Inserts (SNG) ➡E13 • E40

HVM series

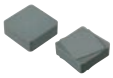
Lead angle 45 degree -SN43〈A.R. -6° R.R. -10°〉



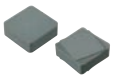


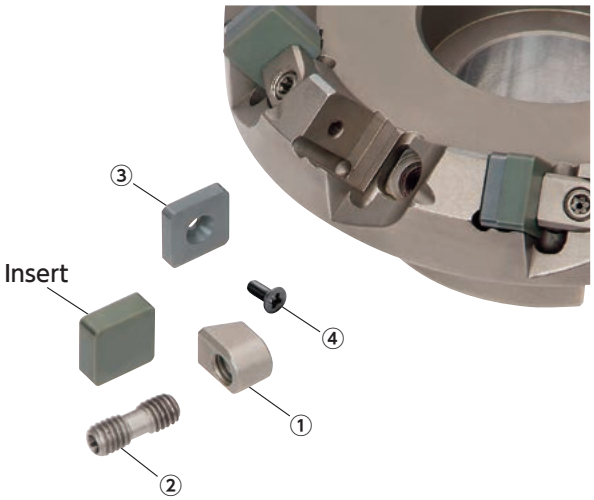


Inch size cutters

Item Number	Stock		Dimensions (inch)									Weight (lbs)	Insert
			ϕD1	ϕD2	H	a	ϕd	W	ϕd2	ϕc	g		
JFDX25IN-45-06R	●	6	2.50	3.129	2.00	.315	.750	.32	2.362	.669	.445	2.2	 SNG 43
JFDX30IN-45-08R	●	8	3.00	3.629	2.00	.315	1.000	.38	2.362	.827	.445	2.8	
JFDX40IN-45-10R	●	10	4.00	4.629	2.00	.315	1.500	.64	3.150	2.000	.535	3.9	
JFDX50IN-45-12R		12	5.00	5.629	2.00	.315	1.500	.64	3.740	2.000	.535	4.1	

Metric size cutters

Item Number	Stock		Dimensions (mm)									Weight (kg)	Insert
			ϕD1	ϕD2	H	a	ϕd	W	ϕd2	ϕc	g		
JFDX063-45-06R	○	6	63	72	50	8	22.0	10.4	58	18	10.5	0.9	 SNG 43
JFDX080-45-08R	○	8	80	95	50	8	25.4	9.5	62	36	10.5	1.2	
JFDX080MM-45-08R	●	8	80	95	50	8	27.0	12.4	64	19	10.5	1.3	
JFDX100-45-10R	○	10	100	120	50	8	31.75	12.7	62	45	8.5	1.7	
JFDX100MM-45-10R	●	10	100	120	50	8	32.0	14.4	64	45	8.5	1.5	
JFDX125-45-12R	○	12	125	146	58	8	38.1	15.9	83	55	13.5	2.8	
JFDX125MM-45-12R	●	12	125	146	58	8	40.0	16.4	85	55	13.5	2.9	

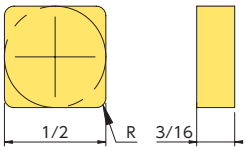
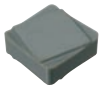
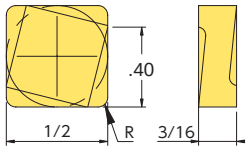
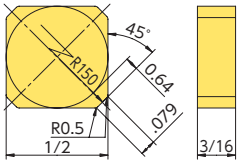


Spare Parts

Wedge	Wedge Screw	Torx Wrench	Shim	Shim Screw
① 	②  T15	 T15	③ 	④ 
HLW175	WS0616-T15	T-15A	ASN423	M3×8

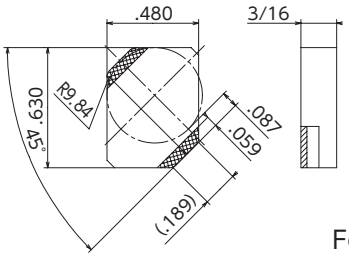
● : Stock ○ : 1-2 week delivery

Inserts

Shape	Dimensions (inch)	Item Number	R	Silicon Nitride SX6	Silicon Nitride SP9	Whisker WA1	Cermet C7X
 12.5	 1/2 R 3/16	**SNG 432 T0220**	.031			●	
		SNG 432 T0420	.031	●	●	●	●
		SNG 433 T0220	.047			●	
		SNG 433 T0420	.047	●	●	●	●
		SNG 434 T0220	.063			●	
		SNG 434 T0420	.063	●	●	●	●
 12.5 with chipbreaker	 .40 1/2 R 3/16	**SNGF 433 TRCC413** Reduce tool pressure	.047	●			
		SNGF 433 RT0425 C421 Reduce tool pressure	.047		●		
 6.3 with wiper	 45° R1.50 .064 .079 R0.5 1/2 3/16	**SNG 43AN TW** The insert must be installed in all insert pockets	—	●	●		

* Recommend using torque wrench @35lbs (4Nm)

CBN Wiper Insert

Dimensions (inch)	Item Number	R	CBN B30	CBN B52
 .480 3/16 .630 R9.84 45° .087 .059 (.189) For $\theta = 45^\circ$	**FDX 1204-45-50R**	—	●	●

Recommend Cutting Conditions

Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 700 1200 1700 2200 2700 3200 3700 4200	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
K Gray Cast Iron	SX6	●	●/○			~.220
	SP9	●	○			~.220
Ductile Iron	SP9	●	○			~.220
	C7X	●	○			~.220

Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 200 400 600 800 1000 1200 1400 1600	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
P Stainless Steel	C7X	●	○			~.150
M Carbon Steel Alloy Steel	C7X	●	○	(~300 BHN)		~.120
				(300- BHN)		~.040

Inserts (SNG) ➡E13 • E40

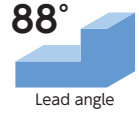
TRI series

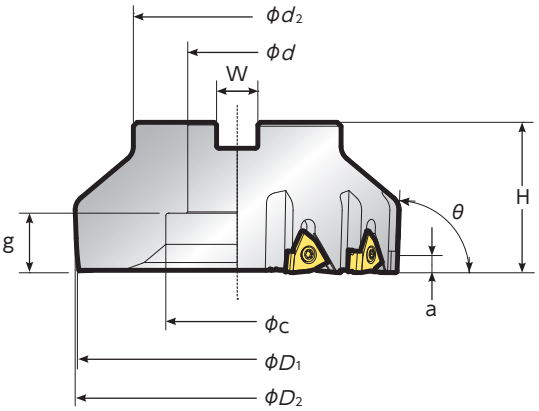
Lead angle 88 degress



A. R. 5°

R. R. 4°, 7°, 10°



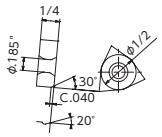
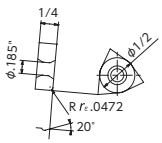


Metric size cutters

Item Number	Stock		Dimensions (mm)										Weight (kg)	Rake angle (°)		Insert Screw	Wrench
			ϕD1	ϕD2	H	a *1	a *2	ϕd	W	ϕd2	ϕc	g		A.R.	R.R.		
JWNXM063C2200R06	○	6	63	63	50	5.5	4.5	22	10.4	60	18	15.5	0.9	+5	+4	FSI26-4.0 *12-LH	LLR-T15
JWNXM080A2540R08	○	8	80	80	50	5.5	4.5	25.4	9.5	60	36	15	1.1	+5	+7		
JWNXM100A3175R10	○	10	100	100	50	5.5	4.5	31.75	12.7	80	50	18	1.8	+5	+10		
JWNXM125A3810R12	○	12	125	125	58	5.5	4.5	38.1	15.9	80	55	23	3	+5	+10		
JWNXM160A5080R16	○	16	160	160	68	5.5	4.5	50.8	19	100	72	22	4.9	+5	+10		

*1 Dimension when set the insert 「WNX44-C10T01020」
*2 Dimension when set the insert 「WNX44-R12T01020」

Insert

Shape	Dimensions (inch)	Item number	C or rε	Silicon Nitride	
				SX6	SP9
		WNX44-C10T0420	C .040	○	○
		WNX44-R12T0420	R .0472	○	○

○ : New standard stock items

Recommend Cutting Conditions

Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 700 1200 1700 2200 2700 3200 3700 4200	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
K						
Gray Cast Iron	SX6	●	●			~.220
	SP9	●	○			~.220
Ductile Iron	SP9	●	○			~.220

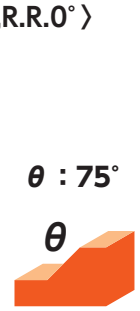
● : Stock ○ : 1-2 week delivery

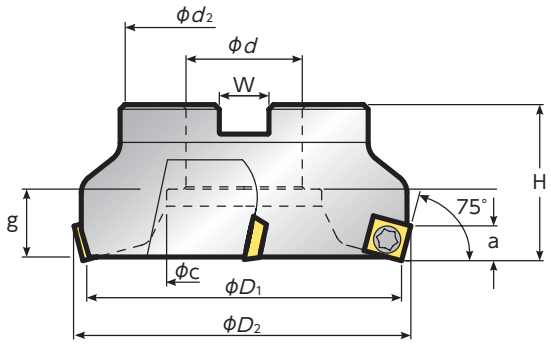
HSM series
High Speed Shear Mill

Lead angle 75 degress - SDW43 〈A.R.+12° ,R.R.0°〉



θ : 75°





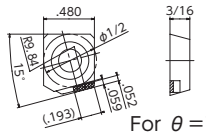
Inch size cutters

Item Number	Stock		Dimensions (inch)									Weight (lbs)	Insert
			ϕD1	ϕD2	H	a	ϕd	W	ϕd2	ϕc	g		
E250R100-SDW43-4C	●	4	2.500	2.780	2.000	.360	1.000	.38	2.290	.820	.787	1.9	 SDCW 43
E300R100-SDW43-5C	●	5	3.000	3.280	2.000	.360	1.000	.38	2.290	.820	.787	2.4	
E400R150-SDW43-6C	●	6	4.000	4.280	2.000	.360	1.500	.64	3.200	2.000	.875	3.7	
E500R150-SDW43-7C	●	7	5.000	5.280	2.000	.360	1.500	.64	3.200	2.000	.875	5.4	

Metric size cutters

Item Number	Stock		Dimensions (mm)									Weight (kg)	Insert
			ϕD1	ϕD2	H	a	ϕd	W	ϕd2	ϕc	g		
JSDW063-75-04R	○	4	63	70.6	50	9.1	22	10.4	58	18	14	0.8	 SDCW 43
JSDW080-75-05R	○	5	80	83.3	50	9.1	25.4	9.5	62	36	15.5	1.0	
JSDW100-75-06R	○	6	100	108.7	50	9.1	31.75	12.7	58	45	16.5	1.3	
JSDW125-75-07R	○	7	125	134.1	58	9.1	38.1	15.9	79	55	21.5	2.5	
JSDW160-75-10R		10	160	165	68	9.1	50.8	19	100	72	28.5	4.0	

CBN Wiper Insert

Shape	Item Number	CBN	
		B30	B52
 For θ =75°	SDW 1204-75-50R	○	○

Spare Parts

Insert Screw	Torx Wrench
	 T20
FSI21-5.0＊12.45	T-20

Inserts

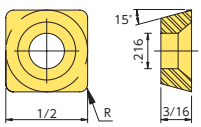


Fig.1: SDCW43

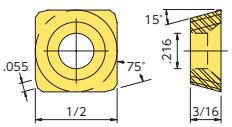


Fig.2: SDCW43EE with wiper

Item Number	R	Fig.	Silicon Nitride		Cermet
			SX6	SP9	C7X
SDCW 432 T0420	.031	1	●	○	●
SDCW 433 T0420	.047	1	●		●
SDCW 434 T0420	.063	1	●		●
SDCW 43EE T0420R*	—	2	●	○	●

＊ Recommend using torque wrench @35lbs(4Nm)

＊ The insert must be installed in all insert pockets

Recommend Cutting Conditions

Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 700 1200 1700 2200 2700 3200 3700 4200	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
K						
Gray Cast Iron	SX6	●	●			~.220
	SP9	●	○			~.220
Ductile Iron	SP9	●	○			~.220

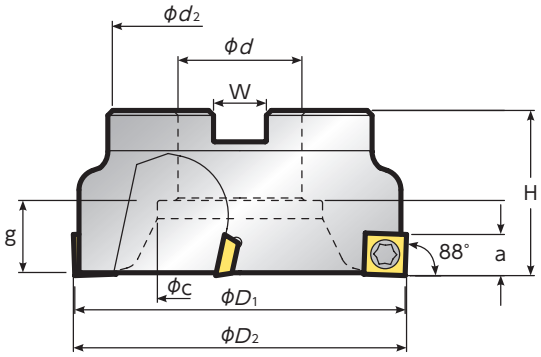
Inserts (SDCW) ➡E12 • E39

HSM high speed hear ill series

● Lead angle 88 degress - SDW43 〈A.R.+12° ,R.R.0°〉







● Inch size cutters

Item Number	Stock		Dimensions (inch)									Weight (lbs)	Insert
			ϕD_1	ϕD_2	H	a	ϕd	W	ϕd_2	ϕc	g		
P250R100-SDW43-4C	●	4	2.500	2.590	2.000	.400	1.000	.38	2.290	.820	.787	1.7	 SDCW 43
P300R100-SDW43-6C	●	6	3.000	3.070	2.000	.400	1.000	.38	2.290	.820	.787	2.2	
P400R150-SDW43-8C	●	8	4.000	4.070	2.000	.400	1.500	.64	3.200	2.000	.875	3.5	
P500R150-SDW43-10C	●	10	5.000	5.070	2.000	.400	1.500	.64	3.200	2.000	.875	5.2	

● Spare Parts

Insert Screw	Torx Wrench
	 T20
FSI21-5.0＊12.45	T-20

● Inserts

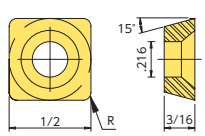


Fig.1: SDCW43

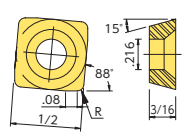


Fig.2: SDCW43PE with wiper

Item Number	R	Fig.	Silicon Nitride		Cermet
			SX6	SP9	C7X
SDCW 432 T0420	.031	1	●	○	●
SDCW 433 T0420	.047	1	●		●
SDCW 434 T0420	.063	1	●		●
SDCW 43PE T0420R*	.031	2	●		

＊ Recommend using torque wrench @35lbs (4Nm)

＊ The insert must be installed in all insert pockets

● Recommend Cutting Conditions

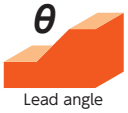
Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 700 1200 1700 2200 2700 3200 3700 4200	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
K	SX6	●	●			~.220
Gray Cast Iron	SP9	●	○			~.220
Ductile Iron	SP9	●	○			~.220

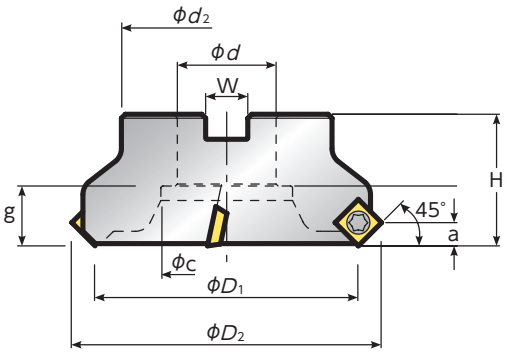
Inserts (SDCW) ➡E12・E39

● : Stock ○ : 1-2 week delivery

Lead angle 45 degress - SDW43 〈A.R.+12° ,R.R.0°〉







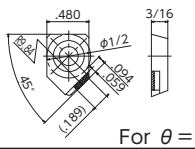
Inch size cutters

Item Number	Stock		Dimensions (inch)									Weight (lbs)	Insert
			ϕD1	ϕD2	H	a	ϕd	W	ϕd2	ϕc	g		
A300R100-SDW43-6C	●	6	3.000	3.740	2.000	.260	1.000	.38	2.290	.820	.787	2.3	SDCW 43
A400R150-SDW43-7C	●	7	4.000	4.740	2.000	.260	1.500	.64	3.200	2.000	.875	3.3	
A500R150-SDW43-8C	●	8	5.000	5.740	2.000	.260	1.500	.64	3.810	2.120	.871	5.0	

Metric size cutters

Item Number	Stock		Dimensions (mm)									Weight (kg)	Insert
			ϕD1	ϕD2	H	a	ϕd	W	ϕd2	ϕc	g		
JSDW080-45-06R	○	6	80	95.0	50	6.6	25.4	9.5	62	36	18	1.1	SDCW 43
JSDW100-45-07R	○	7	100	120.4	50	6.6	31.75	12.7	58	45	16	1.4	
JSDW125-45-08R	○	8	125	145.8	58	6.6	38.1	15.9	79	55	21	2.6	

CBN Wiper Insert

Shape	Item Number	CBN	
		B30	B52
 For θ=45°	SDW 1204-45-50R	●	●

Spare Parts

Insert Screw	Torx Wrench
	 T20
FSI21-5.0＊12.45	T-20

Inserts

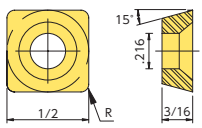


Fig.1: SDCW43

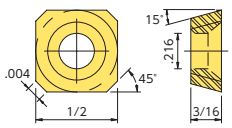


Fig.2: SDCW43AE with wiper

Item Number	R	Fig.	Silicon Nitride		Cermet
			SX6	SP9	C7X
SDCW 432 T0420	.031	1	●	○	●
SDCW 433 T0420	.047	1	●		●
SDCW 434 T0420	.063	1	●		●
SDCW 43AE T0420*	—	2	●	○	●

* Recommend using torque wrench @35lbs(4Nm)

＊ The insert must be installed in all insert pockets

Recommend Cutting Conditions

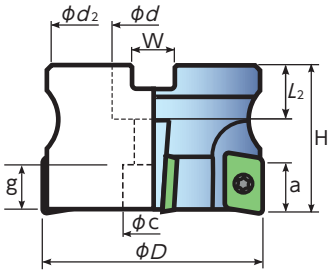
Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 700 1200 1700 2200 2700 3200 3700 4200	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
K						
Gray Cast Iron	SX6	●	●			~.200
	SP9	●	○			~.200
Ductile Iron	SP9	●	○			~.200

Inserts (SDCW) ➡E12・E39

JQ series

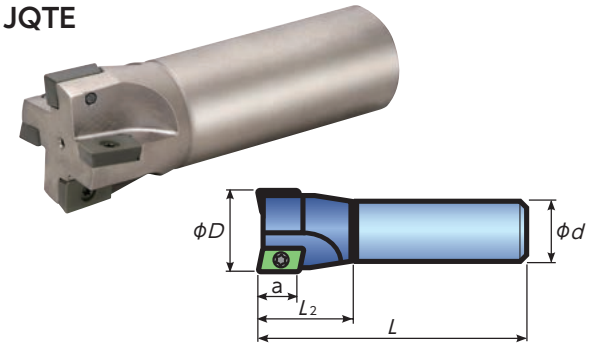
JQTS







JQTE



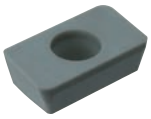
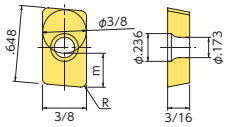
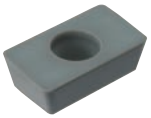
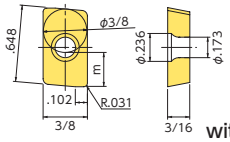
● JQTS Metric size cutters

Item Number	Stock		Dimensions (mm)									Weight (kg)	A.R.	R.R.	Insert Screw	Wrench	Insert
			ϕD	H	L_2	a	ϕd	W	$ϕd_2$	ϕc	g						
JQTS040-90-4R	○	4	40	40	18	14	16	8.4	35	12	4.2	0.2	+6°	−13°	FSI22-4.0∗11	T-15A	APCW 1604
JQTS050-90-5R	○	5	50	40	22	14	22	10.4	45	18	10.7	0.3	+6°	−10°			
JQTS063-90-6R	○	6	63	50	22	14	22	10.4	58	18	14.5	1.4	+6°	−12°			

● JQTE Metric size cutters

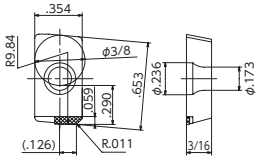
Item Number	Stock		Dimensions (mm)					Weight (kg)	A.R.	R.R.	Insert Screw	Wrench	Insert
			ϕD	L	L_2	a	ϕd						
JQTE020-90-1R	○	1	20	100	30	14	20	0.2	+6°	−13°	FSI23-4.0∗7	T-15A	APCW 1604
JQTE025-90-2R	○	2	25	100	30	14	25	0.3	+6°	−13°			
JQTE032-90-3R	○	3	32	110	35	14	32	0.5	+6°	−13°	FSI22-4.0∗11		
JQTE040-90-4R	○	4	40	110	37	14	32	0.6	+6°	−13°			

● Inserts

Shape	Item Number	R	m	Silicon Nitride	
				SX6	SP9
 	APCW 160408 T01020	.031	.288	○	●
	APCW 160412 T01020	.047	.286	○	○
	APCW 160420 T01020	.079	.284	○	○
  with wiper	APCW 1604 PDTR The insert must be installed in all insert pockets	—		○	○

∗ Recommend using torque wrench @35lbs(4Nm)

● CBN Wiper Insert

Shape	Item Number	B30	B52
	APCW 1604 PDSRCE	○	○

● Recommend Cutting Conditions

Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 700 1200 1700 2200 2700 3200 3700 4200	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
K						
Gray Cast Iron	SX6	●	○			~.320
	SP9	●	●			~.320
Ductile Iron	SP9	●	○			~.320

● : Stock ○ : 1-2 week delivery

Milling Cutter

Machine power requirements ～Quick Check Table～

Calculation

※Assuming that normal cast iron is machined at a cutting speed of 2600 SFM

Required mechanical power(hp) = ○○% × ○○hp

Width of cutting a_e = __ __ % of the cutter diameter

The value __ __hp determined from the applicable table below

〈Example of calculation〉
Cutter used : HVMϕ4"−10 teeth　Width of cutting a_e=1.2"→This is 30% of the cutter diameter
Cutting conditions : 2600 SFM　.008 IPT .118 DOC → The value 54hp in the table is located.

→ The required power (hp)=30%×54hp=16hp

HVM Series



HVM　Φ2.5" - 6 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.039	5	8	9	12
.079	9	15	19	23
.118	15	22	30	35
.157	19	30	39	47

HVM　Φ3" - 8 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.039	8	12	16	19
.079	16	24	32	39
.118	24	36	47	58
.157	31	48	63	76

HVM　Φ4" - 10 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.039	12	17	24	28
.079	23	36	47	56
.118	35	54	71	86
.157	47	72	94	114

HVM　Φ5" - 12 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.039	16	26	34	40
.079	32	50	66	79
.118	48	75	98	119
.157	64	99	131	158

HVM　Φ6" - 16 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.039	28	43	56	67
.079	55	85	111	134
.118	83	127	168	203
.157	110	170	223	270

HSM Series



HSM　Φ2.5" - 4 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.039	4	5	8	9
.079	8	12	16	19
.118	12	17	24	30
.157	16	24	32	39

HSM　Φ3" - 6 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.039	7	11	15	17
.079	15	22	30	35
.118	22	32	44	52
.157	28	43	58	70

HSM　Φ4" - 7 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.039	9	13	19	23
.079	19	27	36	44
.118	27	42	55	67
.157	36	55	74	89

HSM　Φ5" - 8 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.039	11	17	23	27
.079	23	34	46	55
.118	34	51	68	82
.157	44	67	91	110

HSM　Φ6" - 10 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.039	16	24	32	39
.079	32	48	66	79
.118	48	72	98	118
.157	64	97	130	157

XFM Series



XFM　Φ3" - 10 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.197	48	74	102	125
.236	58	89	122	149
.276	67	102	142	174
.315	76	117	162	199

XFM　Φ4" - 13 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.197	82	125	174	213
.236	98	150	209	255
.276	114	176	244	298
.315	130	200	279	341

XFM　Φ5" - 16 teeth

Depth of cut (inch)	Feed rate per tooth (IPT) .004	.008	.012	.016
.197	125	192	266	325
.236	149	229	319	390
.276	174	268	372	455
.315	199	306	425	519

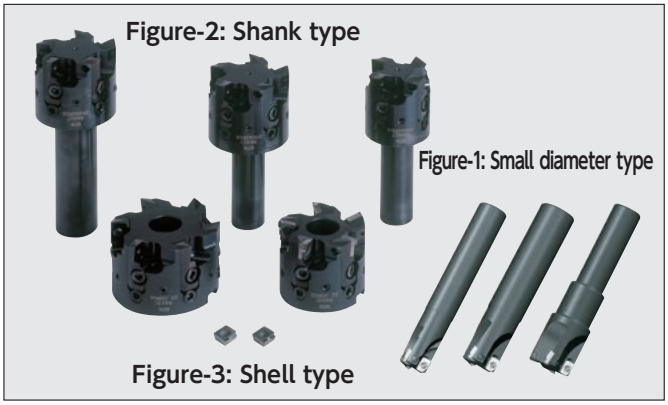
Unit : kW

Tips for utilizing the above tables

① The assumption is that gray cast iron is machined at a cutting speed of 2600 SFM, with the cutter diameter shown as the width of cut (a_e = 100% of the cutter diameter).
② The required power becomes approximately half (50%) if the cutting width a_e or depth of cut a_p is halved. (The power is proportional to a_e or a_p.)
③ The required power is reduced to approximately 60% if the number of blades is halved.
④ Machines that have an output of 30 hp or greater are recommended.

＊Please make use of the above tables, understanding that they are approximations as only a guide.

HPC igh erformance utter series Fixed type/Adjustable type

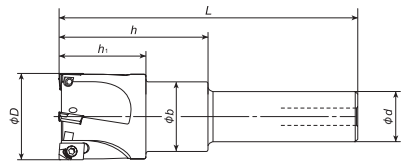


Features

- ***A wide range of sizes***
  The diameters range from ϕ.787" - ϕ3.937" for the HPC series
- ***Excellent rigidity (HPC)***
  The material for the HPC body is steel, achieving exceptional reliability

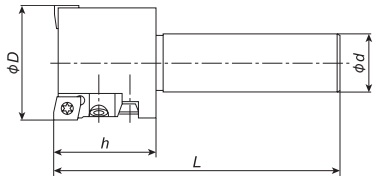
HPC (steel body) ϕ20 - ϕ100 (ϕ.787" - ϕ.3.937")

Figure 1 Small diameter type



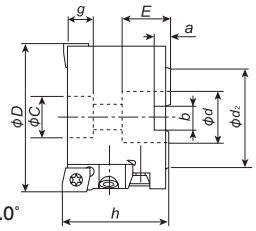
A.R.+9° R.R.+4°

Figure 2 Shank type



A.R.+6° R.R.−3°~+3°

Figure 3 Shell type



A.R.+6° R.R.0°

● Metric size Cutters

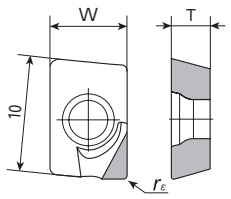
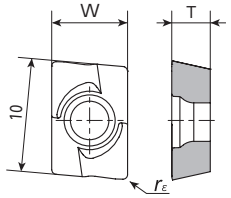
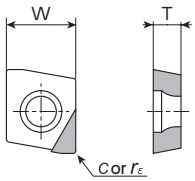
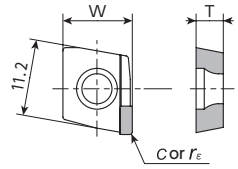
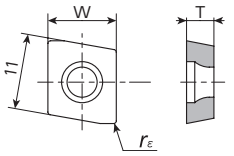
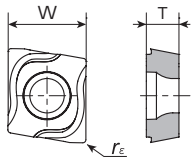
	Figure	Item number	Stock		ϕD	h	ϕd	L	h1	E	ϕb	b	a	ϕd2	ϕc	g	Weight (kg)	Max. RPM allowed (RPM)	Item number of applicable insert
Fixed type	1	RD020T20070R03	○	3	20	30	20	100	30	–	–	–	–	–	–	–	0.23	18,000	HDA style
		RD025T25070R03	○	3	25	40	25	110	40	–	–	–	–	–	–	–	0.37	18,000	
		RD030T20060R04	○	4	30	60	20	120	35	–	25	–	–	–	–	–	0.33	18,000	
		RD032T20060R04	○	4	32	60	20	120	35	–	26	–	–	–	–	–	0.36	18,000	
		RD035T20060R04	○	4	35	60	20	120	35	–	28	–	–	–	–	–	0.36	18,000	
	2	RA040T20060R04K	○	4	40	45	20	105	–	–	–	–	–	–	–	–	0.45	18,000	HAL style HAT style HAN style HLA style
		RA040T25080R04K	○	4	40	45	25	125	–	–	–	–	–	–	–	–	0.6	18,000	
		RA050T20060R05K	○	5	50	45	20	105	–	–	–	–	–	–	–	–	0.6	18,000	
		RA050T25080R05K	○	5	50	45	25	125	–	–	–	–	–	–	–	–	0.75	18,000	
		RA050T32080R05K	○	5	50	45	32	125	–	–	–	–	–	–	–	–	0.9	18,000	
	3	RA050C22.00R05K	○	5	50	45	22	–	–	20	–	10.4	6.3	42	18	11	0.4	18,000	
		RA063C22.00R06K	○	6	63	45	22	–	–	20	–	10.4	6.3	42	18	11	0.73	18,000	
		RA080A25.40R07K	○	7	80	43	25.4	–	–	26	–	9.5	6.0	50	38.9	15	0.95	15,000	
		RA100A31.75R09K		9	100	45	31.75	–	–	32	–	12.7	8.0	60	61	11	1.6	10,000	
Adjustable type	2	RA040T20060R04	○	4	40	45	20	105	–	–	–	–	–	–	–	–	0.45	18,000	
		RA040T25080R04	○	4	40	45	25	125	–	–	–	–	–	–	–	–	0.60	18,000	
		RA050T20060R05	○	5	50	45	20	105	–	–	–	–	–	–	–	–	0.60	18,000	
		RA050T25080R05	○	5	50	45	25	125	–	–	–	–	–	–	–	–	0.75	18,000	
		RA050T32080R05	○	5	50	45	32	125	–	–	–	–	–	–	–	–	0.90	18,000	
	3	RA050C22.00R05	○	5	50	45	22	–	–	20	–	10.4	6.3	42	18	11	0.40	18,000	
		RA063C22.00R06	○	6	63	45	22	–	–	20	–	10.4	6.3	42	18	11	0.73	18,000	
		RA080A25.40R07	○	7	80	43	25.4	–	–	26	–	9.5	6.0	50	38.9	15	0.95	15,000	
		RA100A31.75R09	○	9	100	45	31.75	–	–	32	–	12.7	8.0	60	61	11	1.6	10,000	

● Recommend Cutting Conditions

Work Material	Grade	Dry	Wet	Cutting Speed (SFM) 1000 3000 5000 7000 9000 11000 13000 15000 17000 19000	Feed (IPT) .002 .004 .006 .008 .010 .012	Depth of Cut (inch)
K						
Aluminum Alloy (Si≦13)	PD1	○	●			~.200
	TM1	○	●			~.200
Aluminum Alloy (Si≧13)	PD1	○	●			~.200
	TM1	○	●			~.200

● : Stock ○ : 1-2 week delivery

Inserts

Shape	Item number	Corner angle	w	T	Cutting edge length	A.R.	R.R.	r_ε	Wiper	PCD PD1	PVD coated carbide TM1	Cutter Type (figure)
	**HDA4015R04**	0°	6.7	3.4	4.0	+9°	+4°	0.4	Provided	●		1
 with chipbreaker	**HDA4505R04**	0°	6.7	3.4	Min. 5.0	+9°	+4°	0.4	Provided		○	1
	**HAL3515R04**	0°	10	4.0	3.5	+6°	0°	0.4	Provided	●		2 3
	HAT6021R04		10		6.0			0.4		●		
	HAT6021C05		10		6.0			C0.5		○		
	HRT6021R04 Regrindable		10.2		Min. 6.0			0.4		○		
	**HAL3515C05**	0°	10	4.0	3.5	+6°	0°	C0.5	Provided	○		2 3
	HRL3515R04 Regrindable				Min. 3.5			0.4		○		
	**HAN9521R04N**	0°	10	4.0	Min. 6.0	+6°	−3°	0.4	Provided		○	2 3
 with chipbreaker	**HLA8521R04**	0°	10.078	4.0	Min. 6.0	+6°	+3°	0.4	Provided		○	2 3

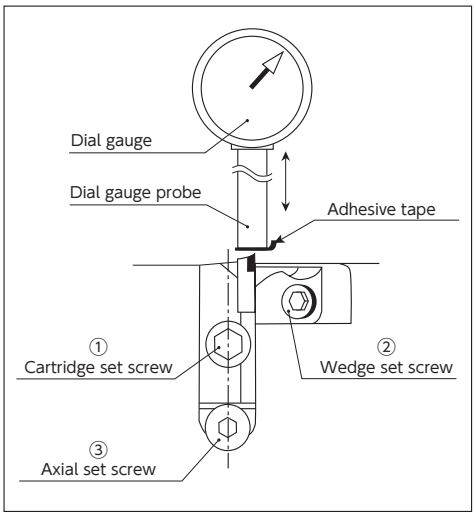
* Recommend using torque wrench @35lbs (4Nm)

Spare Parts

Item number	Cartridge	Axial setscrew	Cartridge setscrew	Insert clamping screw	Handle	Torx screwdriver	Hex-screwdriver	Clamping bolt
RD020T20070R03				FSI0306A	2814HS (OP)	U107T10 (OP)		
RD025T25070R03				FSI0307A				
RD030T20060R04								
RD032T20060R04								
RD035T20060R04								
RA040T20060R04/K	RA06P03NC	CS0510A	CS0510T	FSI035104A	2814HS (OP)	U107T15 〈Torx〉 (OP)	U104-40 〈Hex〉 (OP)	
RA040T25080R04/K								
RA050T20060R05/K								
RA050T25080R05/K								
RA050T32080R05/K								
RA050C22.00R05/K								CS1040A (OP) (coolant through)
RA063C22.00R06/K								MBC-M12 (OP)
RA080A25.40R07/K								MBC-M16 (OP)
RA100A31.75R09/K								

Insert Presetting and PCD Damage Preventative Measures for HPC

■Be sure to clean all the insert pockets before carrying out the following steps:



●Step1: Preventative measures against insert chipping

Attach a piece of adhesive tape (preferably, a tape low in adhesion) to the end of a dial gauge's probe.

●Step2: Mounting inserts

For HPC: First, install the cartridges to the body, then, tighten each insert with the insert clamping screw at 3 N·m.

【Caution: If you mount inserts in a cartridge first, it's not possible to install the cartridges to the body.】

●Step3: Temporary tightening (using a torque-wrench)

Tighten set screw (1) first, at 4 N·m.

●Step4: Setting

While watching the reading on the dial gauge, rotate set screw (2) so that the insert with the highest cutting edge is lifted by +0.03 mm. Next, with this position as the reference, set the cutting edges of all other inserts with variations in run out to stay within +/− 5 microns (10 microns in terms of range).

●Step5

Remove the probe from the dial gauge.

●Step6: Tightening set screws (using a torque wrench)

For HPC, tighten set screw (1) at 8 N·m.

■Supplemental explanation

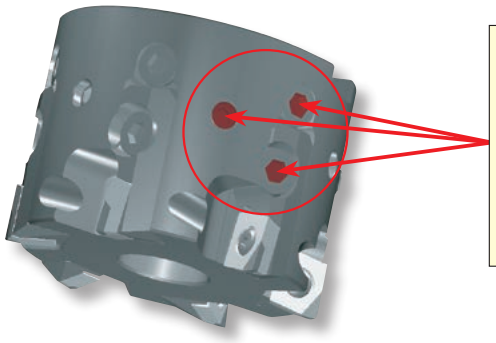
1. Even after the set screws have been tightened, the run out of the cutting edges should stay within approximately +/− 10 microns (20 microns in terms of range).
2. In the above case, NTK standard inserts (excluding some of them; see the note below for details.) and re-ground NTK inserts will not affect the tool life and surface finish.

HPC Fixed Type

No need for pre-setting

No need for cutting edge adjustments!

(The only requirement is clamping and unclamping of the inserts with the clamping bolt)



【Note】

The holes for the axial setscrews and balance adjusting screws are filled with a special material, thus, no screwdrivers and hex-wrenches can be inserted in them.

※The color of the special material is different from the color of the actual product body.

Tooling for Swiss-type Lathes

NTK CUTTING TOOLS

SWISS TOOLING 6200



App for iOS
Available on the App Store

App for ANDROID
ANDROID APP ON Google play

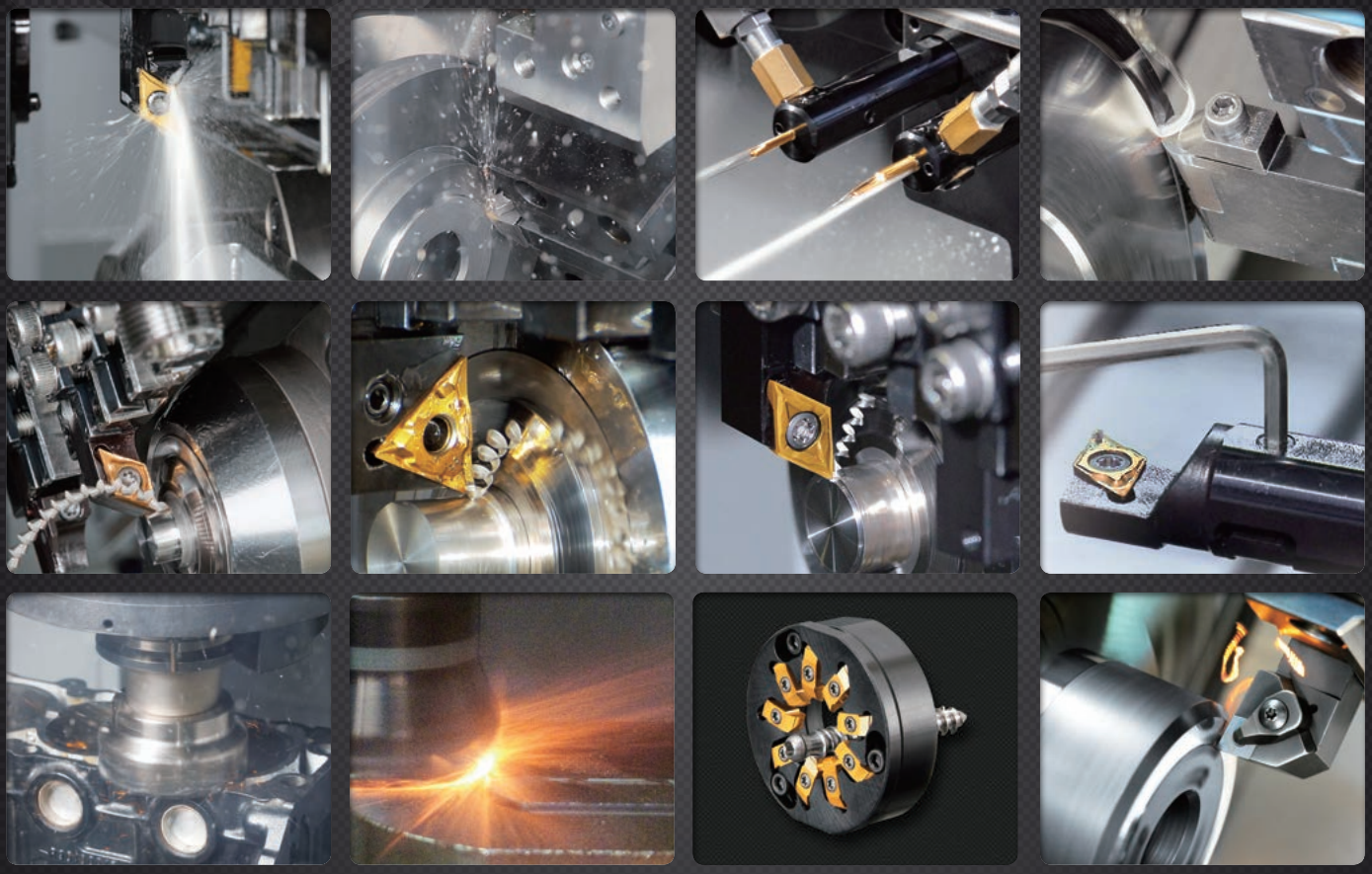
WATCH ON YouTube

NTKCUTTINGTOOLS.com
youtube.com/NTKCUTTINGTOOLS

App for iOS
Available on the App Store
App for ANDROID
ANDROID APP ON Google play

WATCH ON YouTube

www.youtube.com/ntkcuttingtools



MORE TO COME

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NTK Cutting Tools Swiss Tooling Catalog
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"GTMH-GX" 3D molded chipbreaker for Grooving N7
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"SHAPER DUO" New concept tool for making Hexagon/Square socket N9
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NTK Unique Tooling

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Quick change coolant components O10
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ID Tooling	V1 to V32
Shaper	W1 to W10
Indexable End mill	X1 to X5

NEW SPLASH Series Coolant through toolholders

WATCH ON YouTube



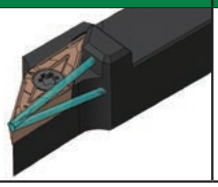
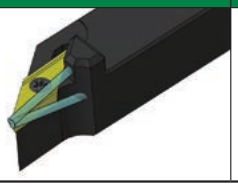
Features

- Evacuates chips away from the cutting edge
- Reduces cutting tool temperature and helps keep the edge sharp
- Y-axis toolholders are available
- Improves part tolerance by steady coolant supply to the edge

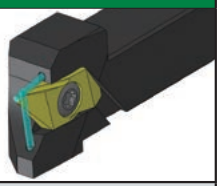
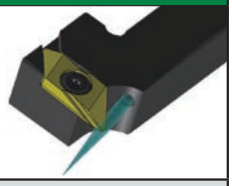
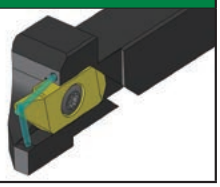
Square Shank Toolholders



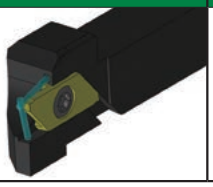
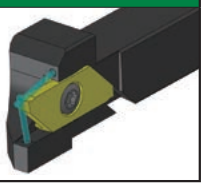
Front Turning

Insert	CC.. insert	DC.. insert	
Holder	SCLC-OH	SDJC-OH	Y-SDJC-OH
			
Insert	VB.. insert	VC.. insert	
Holder	SVJB-OH	SDJC-OH	Y-SDJC-OH
			

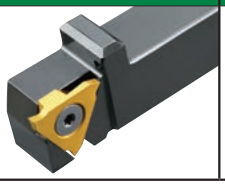
Back Turning

Insert	TBP insert
Holder	TBP-OH
	
Insert	TBP insert
Holder	Y-TBP-OH
	
Insert	TBPA insert
Holder	CTPA-OH
	

Cut Off

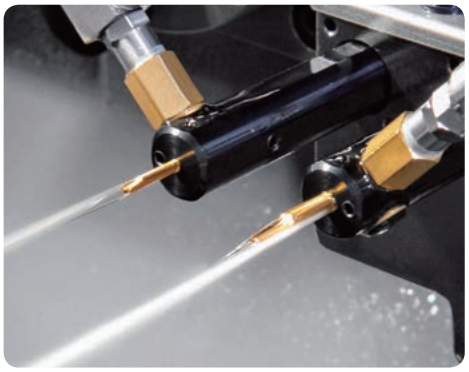
Insert	CTP insert	CTPA insert
Holder	CTP-OH	CTPA-OH
		

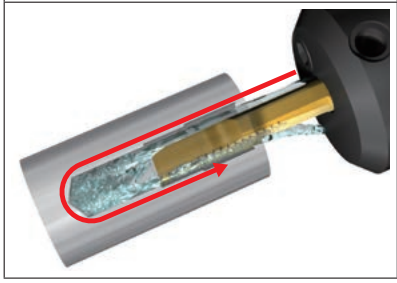
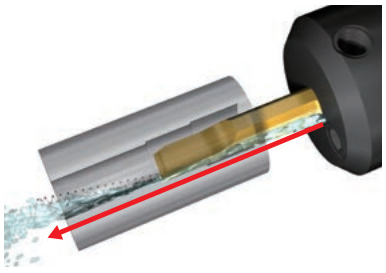
Grooving / Side Turning

Insert	GTM.. insert	GTPA.. insert	
Holder	GTT-OH	Y-GTT-OH	Y-GTPA-OH
			

ID Tooling Toolholders

STICK DUO Series with Adjustable Overhang Mechanism

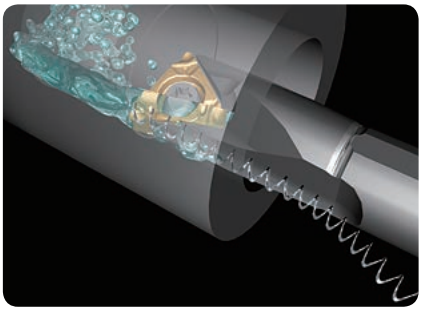


Ⅰ) For Blind hole	Ⅱ) For Through hole
	

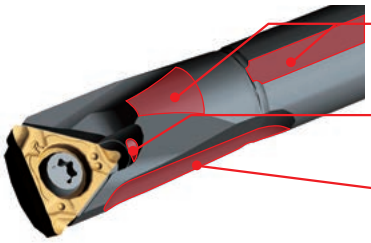
Features

- Good chip control evacuation in ID machining
- Three way coolant connection
- Can choose 2-way coolant direct
- Adjustable overhang length

Mogul Bar Series



Features



- Highly rigid design reduces vibration and chatter
- Internal coolant helps chip evacuation
- Large clearance for improved chip evacuation

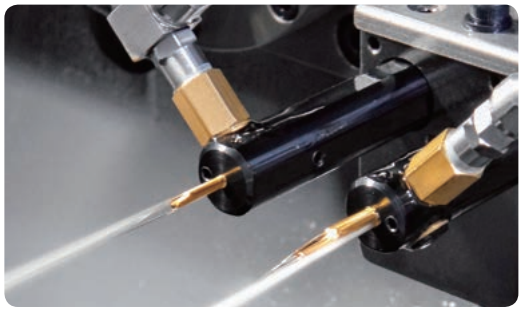
Quick-Change Coolant Components



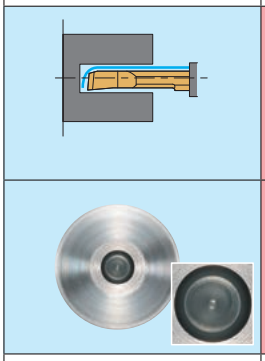
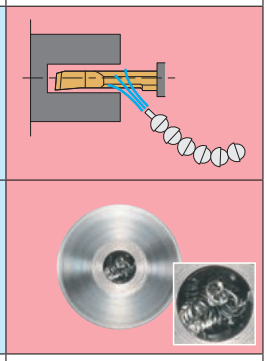
- Up to 2900psi
- High quality flexible stainless steel braided hose
- Reduce machine down time

NEW STICK DUO SPLASH

- Coolant through sleeves for ID Boring with Adjustable Overhang Mechanism -

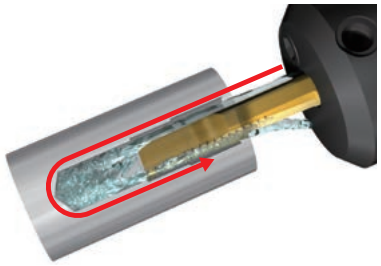
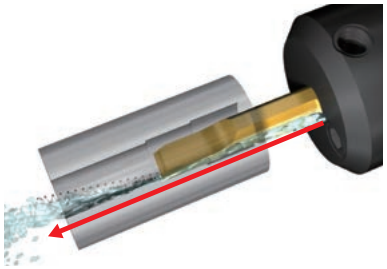
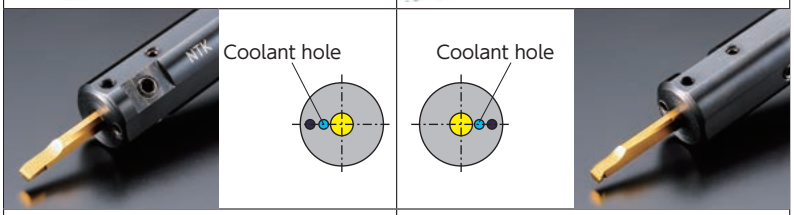
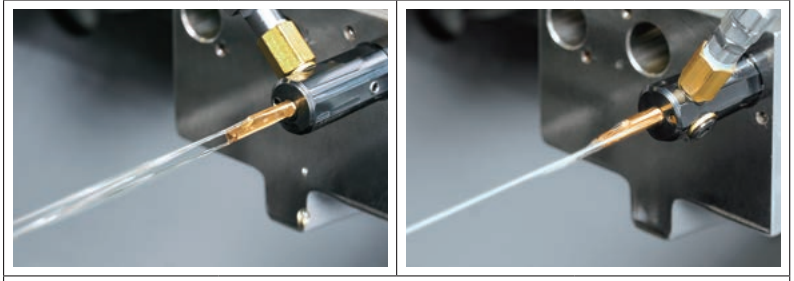


■No chip problems

STICK DUO SPLASH	External coolant
	
No chip inside hole	*Chip packed*

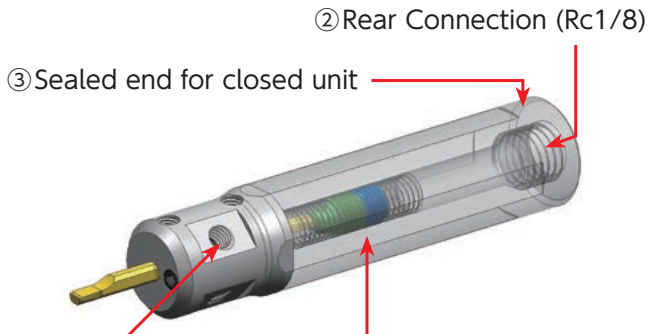
Material : 4140
Insert bar : SHFS040R005S
Hole depth : .590"(15㎜)
Pilot hole : φ.201"×1.102"L(φ5.1×28.0㎜L)
Coolant Pressure : 725psi(5MPa)

■Choose from 2 coolant directions

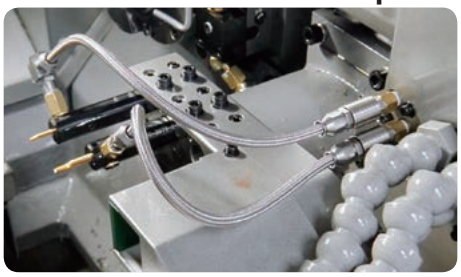
Ⅰ) For Blind hole	Ⅱ) For Through hole
	
	
	

Just rotated 180 degrees

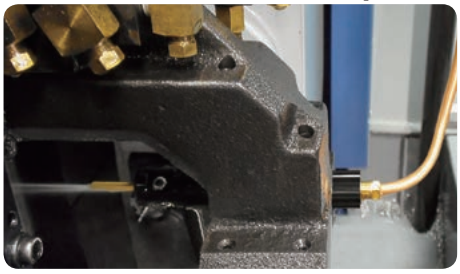
■3 coolant connection options



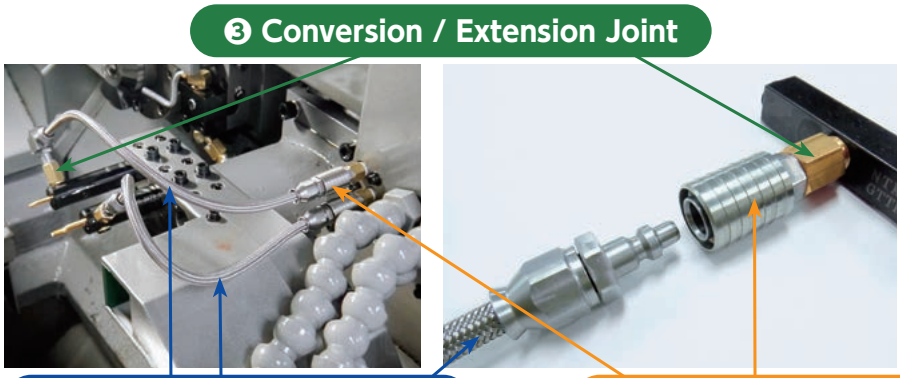
①Front Connection example



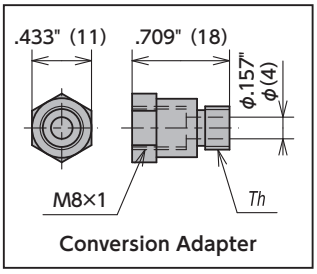
②Rear Connection example



Quick-change Coolant Components



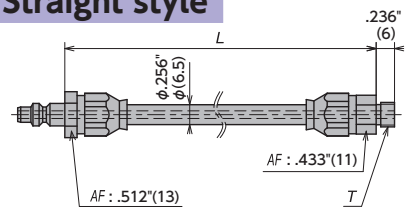
- Up to 2900psi
- High quality flexible stainless steel braided hose
- Reduce machine downtime

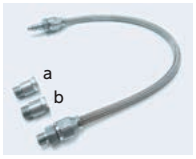


Conversion Adapter

① Plug-in Style Flexible Hose

Straight style

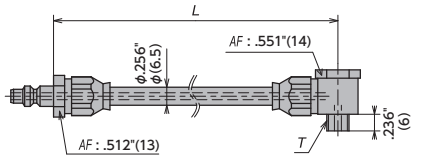


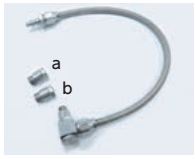


a : Convert M8×1 to M10×1
b : Convert M8×1 to G1/8 (PF1/8)

Figure-1

L-style





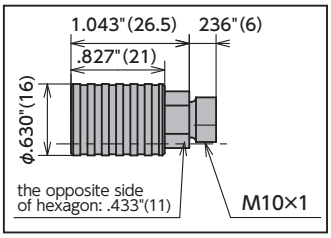
a : Convert M8×1 to M10×1
b : Convert M8×1 to G1/8 (PF1/8)

Figure-2

Item Number	Figure	Stock	L (Inch)	L (mm)	T	Comes with
HOSE-ST-1/8NPT-4IN	1	●	4.000	101.6	NPT1/8	—
HOSE-ST-1/8NPT-6IN	1	●	6.000	152.4	NPT1/8	—
HOSE-ST-1/8NPT-10IN	1	●	10.000	254.0	NPT1/8	—
HOSE-ST-M8*1	1	●	11.811	300.0	M8 × 1	Conversion Adapter a and b
HOSE-AN-M8*1	2	●	11.890	302.0	M8 × 1	Conversion Adapter a and b

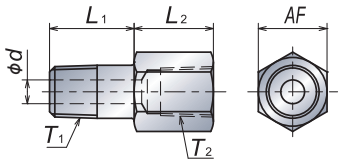
② Quick Change Coupling





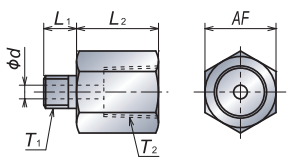
Item Number	Stock	Comes with
COUP-M10*1	●	Seal Plug

③ Conversion / Extension Joint



For square shank holders

Figure-3



For sleeves

Figure-4

Item Number	Figure	Stock	T_1 (mm)	T_2 (mm)	L_1 (mm)	L_2 (mm)	AF (mm)	d (mm)
SCJ-M6-RC1/8-L	3	○	M6 × 1	Rc1/8 (PT1/8)	16	15	13	2.5
SCJ-NPT1/8-M10-L	3	●	NPT1/8	M10 × 1	16	12	13	4.5
SCJ-R1/8-M10-L	3	○	R1/8 (PT1/8)	M10 × 1	16	12	13	4.5
SCJ-R1/8-RC1/8-L	3	○	R1/8 (PT1/8)	Rc1/8 (PT1/8)	16	15	13	4.5
SCJ-R1/8-NPT1/8-L	3	●	R1/8 (PT1/8)	NPT1/8	16	15	13	4.5
SCJ-M6-M10	4	○	M6 × 1	M10 × 1	6	15	12	2.5
SCJ-M6-RC1/8	4	○	M6 × 1	Rc1/8 (PT1/8)	6	15	13	2.5
SCJ-M6-NPT1/8	4	●	M6 × 1	NPT1/8	6	15	13	2.5
SCJ-M8-RC1/8	4	○	M8 × 1	Rc1/8 (PT1/8)	6	15	13	3.5
SCJ-R1/8-M10	4	○	R1/8 (PT1/8)	M10 × 1	10	15	12	4.5
SCJ-R1/8-NPT1/8	4	●	R1/8 (PT1/8)	NPT1/8	10	15	13	4.5

● : Stock ○ : 1-2 week delivery 💧 : Coolant through

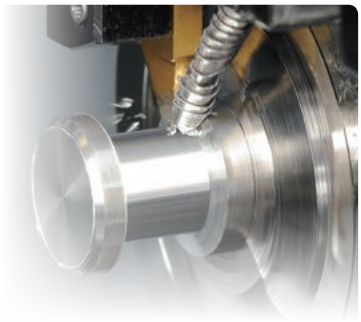
3D Molded Chipbreakers

NEW TBP / TBPA-BM for Back turnings

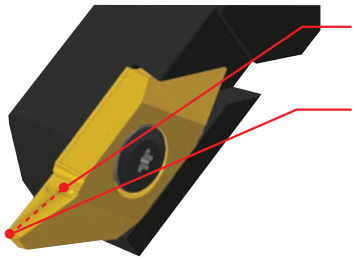
WATCH ON YouTube

Features

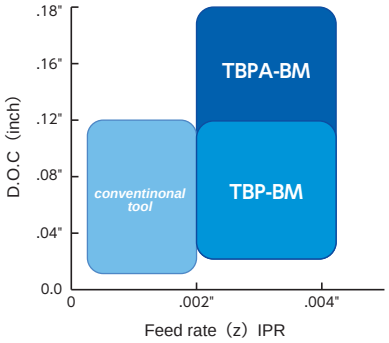
- "Single Pass Back Turning" offers excellent surface finishes
- Up-right type insert and screw clamping provides high rigidity
- Wiper flat on cutting edge offers stable surface finishes even under high feed cutting conditions



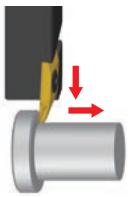
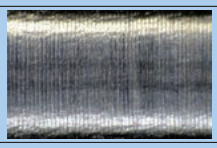
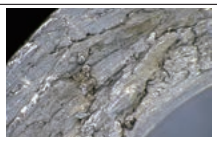
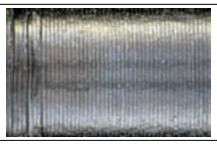
■ New BM chipbreaker



- Prevents the rough end face from hitting the chip
- Wiper flat on cutting edge offers excellent surface finishes

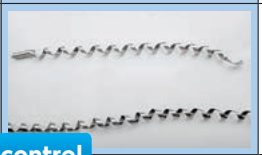
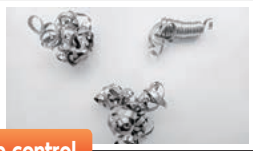
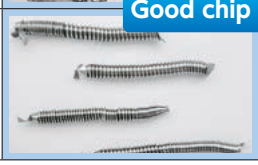


Superior Surface Finish

1Pass	BM chipbreaker		Competitor's tool	
	End face	OD	End face	OD
				
	Excellent surface	Ra : 0.72 μm Rz : 4.46 μm	Rough surface	Ra : 1.65 μm Rz : 6.01 μm

Material : 304 SS (ϕ.630") , 260 SFM , Feed X : .0008 IPR , Feed Z : .0031 IPR , .118"DOC , WET

Excellent Chip Control

Feed rate (IPR) / D.O.C (inch)	BM chipbreaker .002"	BM chipbreaker .003"	Competitor .002"	Competitor .003"
.020"				
.120"				

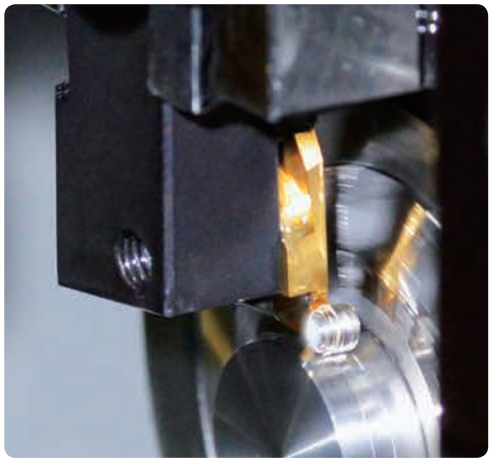
Good chip control

Unstable chip control

Material : 304 SS (ϕ.630") , 260 SFM , WET

NEW GTMH-GX Chipbreaker for Grooving / Side Turning

WATCH ON YouTube

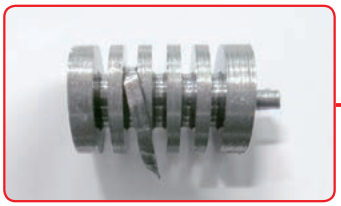


Features

- Can solve either problems of chips remaining in the grooves or bird's nest of chips
- Good surface finishes on groove side faces
- UP to .078" DOC side turning capability

Typical Grooving Probrems

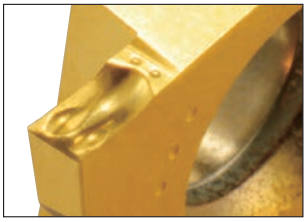
- Chips remain at the bottom of groove
- Bird's nest of chips





Excellent Chip Control

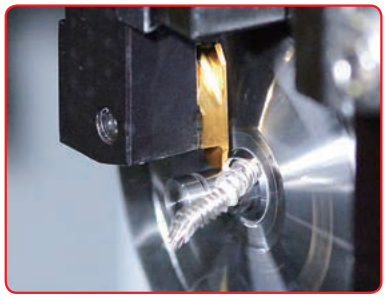
- Chipbreakers



Groove width .059"～

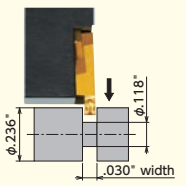


Groove width ～.039"



GX chipbreaker can solve these problems

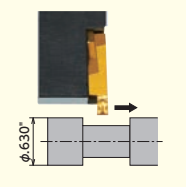
- Grooving

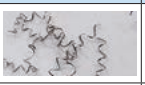
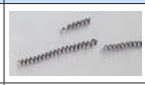


DOC \ Feed rate (IPR)	.0004"	.0011"	.0020"
GX chipbreaker			
Competiton's chipbreaker			

Material : 304 SS(ϕ.630"), 260 SFM, .059", DOC

- Side Turning



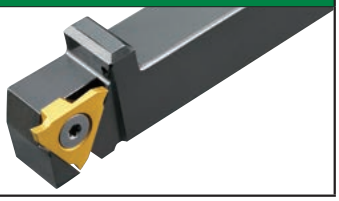
DOC \ Feed rate (IPR)	.0004"	.0011"	.0020"	.0031"
.010"				
.020"				
.030"				

Material : 304 SS(ϕ.630"), 260 SFM, .030" width insert

Best Solution for Chip Control

Now available in Coolant through toolholders

GTT-OH

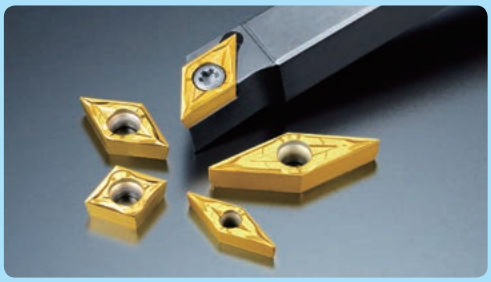


Y-GTT-OH



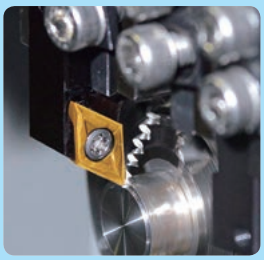
NEW Front Turning Chipbreaker Quartet

NEW YL Chipbreaker

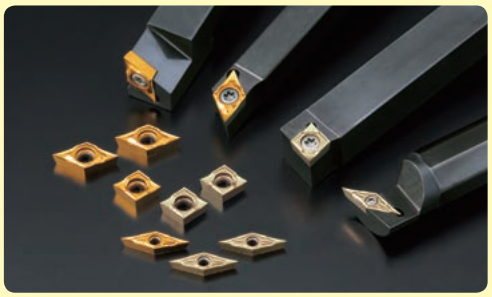


- Great combination of sharpness and toughness
- Covers extremely wide range
- Excellent chip control

WATCH ON YouTube

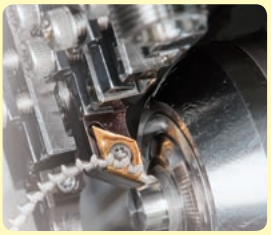


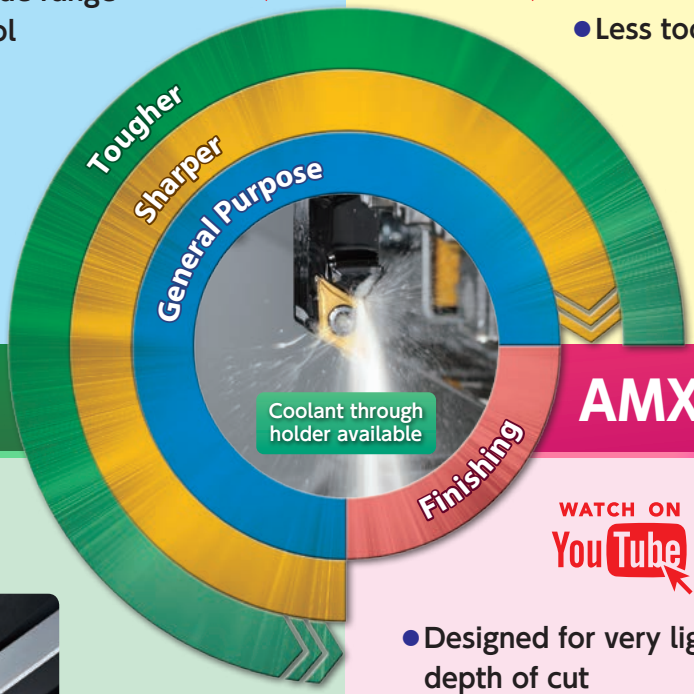
CL Chipbreaker



WATCH ON YouTube

- Sharpest molded Chipbreaker
- Excellent chip control
- Less tool pressure





AM3 Chipbreaker



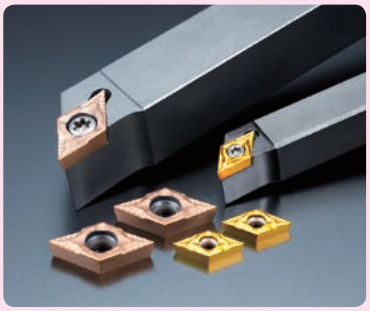
- All purpose chipbreaker
- Sharp edge with toughness

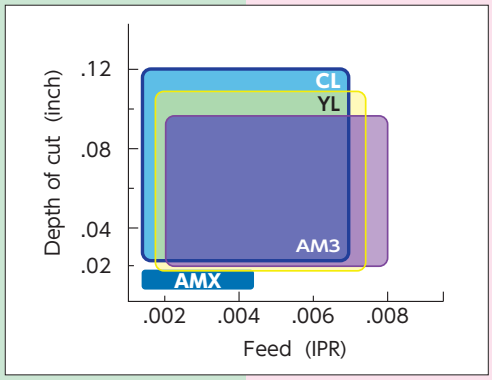
AMX Chipbreaker

WATCH ON YouTube

- Designed for very light depth of cut
- Exceptional sharpness

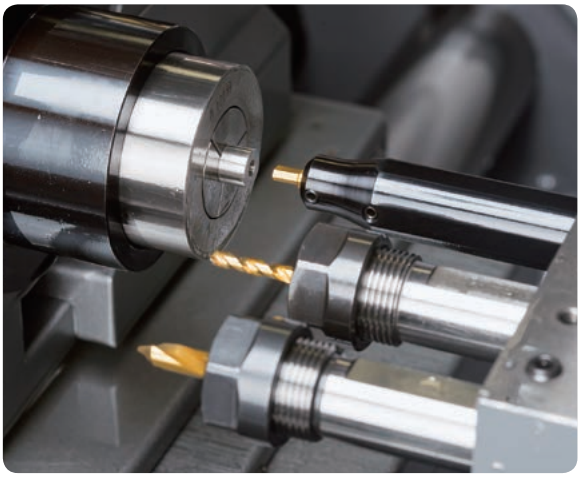






NEW SHAPER DUO

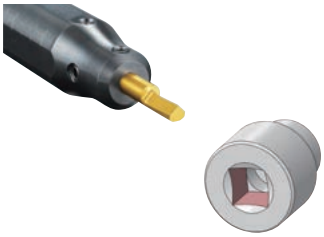
WATCH ON YouTube



■Hexagon Socket



■Square Socket



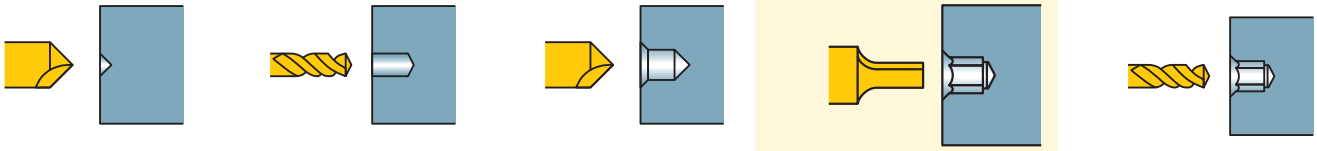
- Perfect fit for back spinde of Swiss machine
- Achieves good corner edge sharpness
- Less tool pressure than Rotary-Broaching
- Easy to adjust for correct dimension
- Economical two-sided insert bar

Comparison Chart of HEX Socket Machining

	Tool Pressure	Cycle Time	Pliability	Tool Cost	
Shaper Duo 	◎	△ ＊Can be off-set by over-wrapping operation	○	◎	●Less tool pressure-especially on small diameter parts ●One size can cover several socket sizes
Broach Tool	△	○	×	△	●Need to have tools for each socket size

Process Chart

① Center drilling ② Drilling (Pilot hole) ③ Chamfering ④ Shaper tool ⑤ Deburring



SHAPER DUO Process Chart

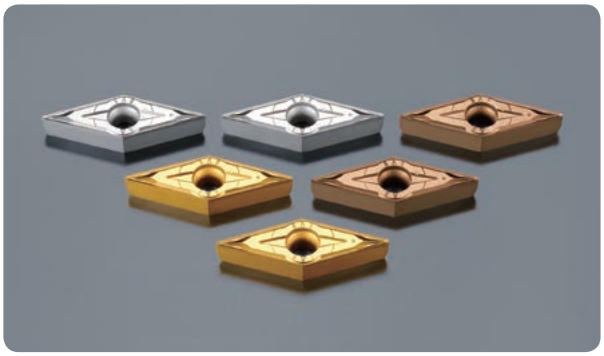
				Number of passes			Estimated cycle time *		
HEX Standard	Tool	Pilot bore Dia. (mm)	Total DOC /side (mm)	Total pass /side	Roughing pass 0.025mm	Finishing pass 0.010mm	ISO 2936 standard depth of Hex hole (mm)	Whole process ①-⑤	Process④ Shaper
HEX 1.5	**SSP020N1130H**	1.5	0.116	6	5	1	2	39 sec	14 sec
HEX 2.0	**SSP020N1430H**	2.0	0.155	7	6	1	2.5	44 sec	16 sec
HEX 2.5	**SSP030N1940H**	2.5	0.193	9	8	1	3	50 sec	20 sec
HEX 3.0	**SSP030N1940H**	3.0	0.232	10	9	1	3.5	55 sec	23 sec
HEX 4.0	**SSP040N2450H**	4.0	0.309	13	12	1	5	73 sec	33 sec
HEX 5.0	**SSP050N3260H**	5.0	0.387	17	16	1	6	90 sec	46 sec
HEX 6.0	**SSP060N42120H**	6.0	0.464	20	19	1	8	117 sec	63 sec
HEX 8.0	**SSP080N62160H**	8.0	0.619	26	25	1	10	155 sec	92 sec

＊Pilot bore diameter is same as AF
＊Using Carbide drill

＊Shaper cutting conditions
Feed : 3000 mm/min
DOC : 0.025 mm (Roughing), 0.010 mm (Finishing)

Information ➡W1

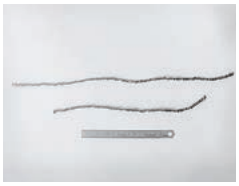
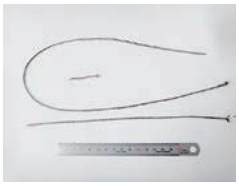
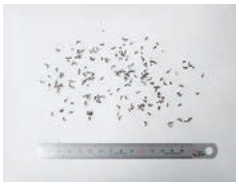
NEW VBGT Tooling



Features

- NTK developed the "VB" style chipbreaker with a unique combination of both sharpness and toughness
- Excellent chip control and covers a wide range of cutting conditions
- "G" tolerance inserts provide great surface finishes and stable part tolerances

Wide Chip Control Range

304SS (ϕ.630") 260SFM		Feed (IPR)		
		.002"	.003"	.005"
Depth of cut (inch)	.118"			
	.079"			
	.039"			
	.020"			

Coolant Through Toolholders Available



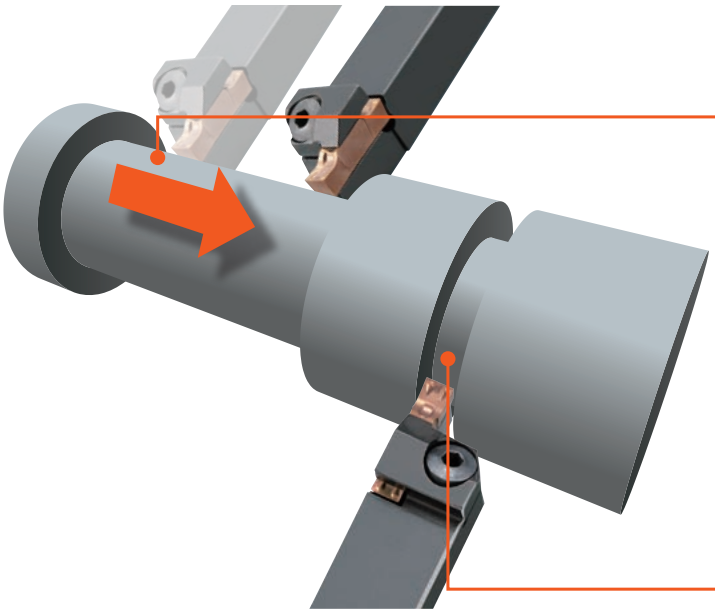
- Evacuates chips away from the cutting edge
- Reduces cutting tool temperature and keeps edge sharp even large depth of cut conditions
- Improves part tolerance by steady coolant supply to the edge

* Left-hand holders (SVJBL) are designed for Right-hand machines

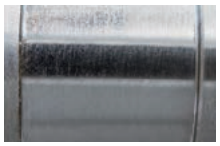
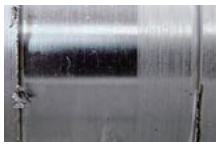


Features

- Grooving and side turning tools with highly rigid design
- 3D design chipbreakers result in less tool pressure and excellent chip control

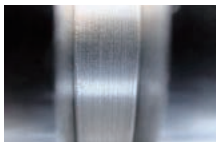
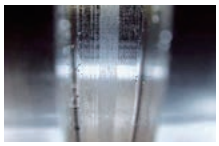


■Side-turning

	NTK:GW chipbreaker	Competitor
Chip		
Surface finish		

Material : 4135, 500SFM, .004IPR, .040DOC

■Grooving

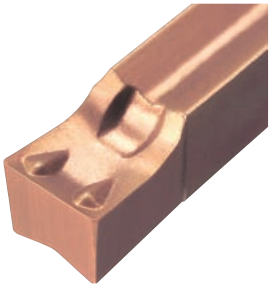
	NTK:GW chipbreaker	Competitor
Chip		
Surface finish		

Material : 4135, 500SFM, .004IPR, .275DOC

Chipbreaker

■For Grooving / Side-turning

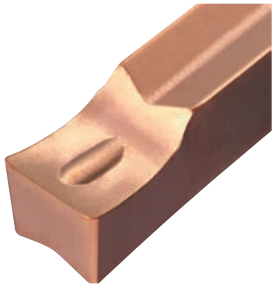
GW



- *Excellent chip control*
- *Good sharpness*
- *Side turning capability*

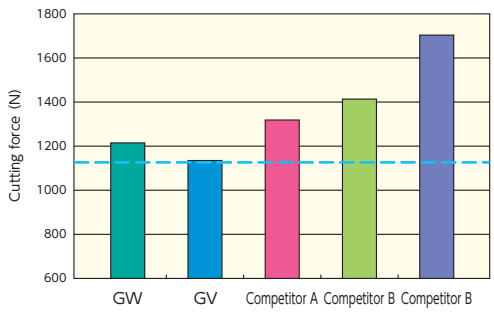
■Less tool pressure

GV



- *Superior sharp edge*

■Tool pressure comparison when grooving



NTK Unique Tooling



Multi-lead thread machining capability

Thread Whirling

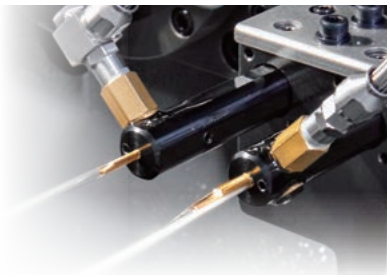
➡O2 WATCH ON YouTube



Coolant through toolholders

Splash Series / Quick-Charge Coolant Components

➡O3 WATCH ON YouTube NEW





Chip controlled by gravity

Y-axis Toolholders

➡O11 WATCH ON YouTube



High rigidity boring bars

Mogul Bar

➡O16 WATCH ON YouTube



Interchangeable tools

CSV / CTPS Series

➡O27 • O31

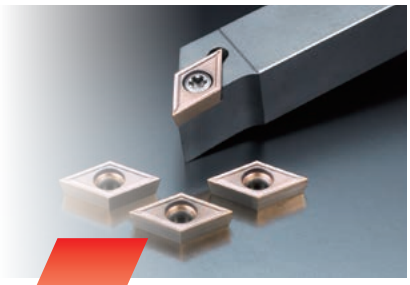


Tools for sub-spindle machining

DS-ACH / DS Toolholders / DS Sleeves

➡O17 • O26 WATCH ON YouTube





Wiper inserts with ISO style

WP Series

➡O33 WATCH ON YouTube



6 corner insert for Swiss machines

UL Chipbreaker

➡O34 WATCH ON YouTube



Toolholders for extended guide-bushing

Shifted Toolholders

➡O35 WATCH ON YouTube



Face turning / grooving tools

Saturn DUO

➡O35 WATCH ON YouTube

Thread Whirling

Features

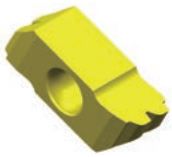
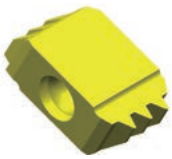
WATCH ON YouTube



- NTK's unique patented design technology makes precise and correct inserts possible the first time, *without any redesign or remanufacture even if it is a multiple-lead thread*
- The sharper cutting edges produce a better surface finish and longer tool life than competitor's inserts

Form Double-lead or Multiple-lead with Single Pass

Patented

	Double-lead threads	Triple-lead threads
Work	Bone screw	Worm gear
Work material	Ti-6Al-4V ELI	brass
Work appearance		
Insert appearance		
Major Dia.	ϕ.157"(4.0mm)	ϕ.278"(7.0mm)
Minor Dia.	ϕ.094"(2.4mm)	ϕ.185"(4.7mm)
Lead [Pitch×No. of Lead]	.135"(3.42mm) [.067"×2(1.71mm×2)]	.193"(4.9mm) [.064"×3(1.63mm×3)]

- Can reduce cycle time by more than half
- NTK can achieve what other competitors cannot

Double-lead Bone Screw Process Example

1. 1st thread whirl at taper part
2. Rotate the bar 180° and whirl the 2nd thread on same part as 1
3. Thread whirl whole straight part
4. Thread whirl at very last part to get two-exits, after back of bar has been backed up a half lead (one pitch) and rotated 180°

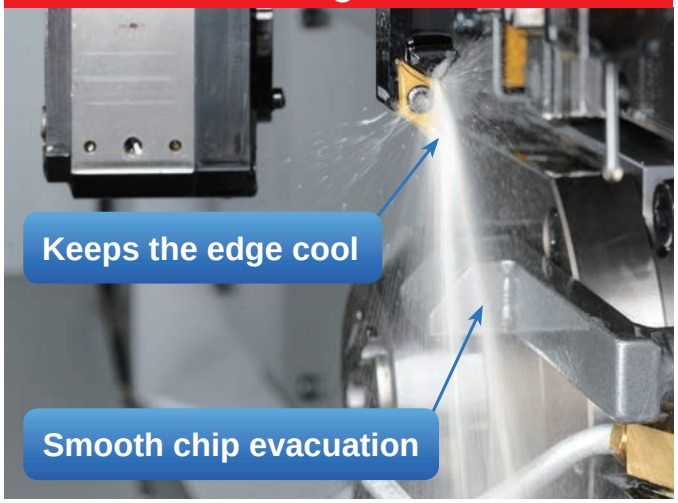
Information ➡U16

SPLASH Series

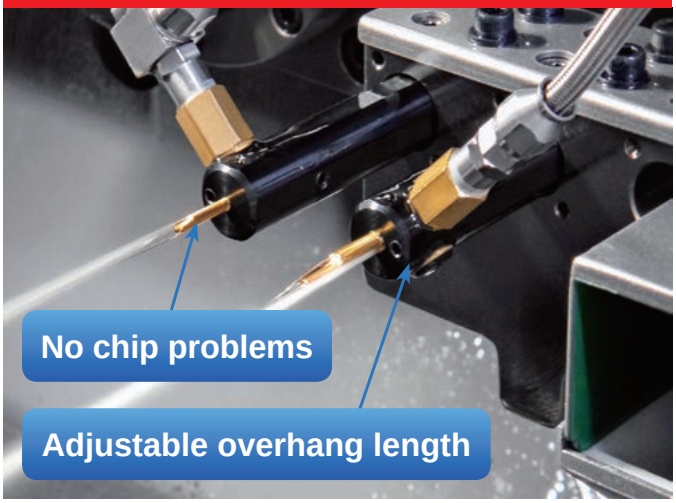
Coolant through toolholders

WATCH ON YouTube

Coolant through toolholders



STICK DUO SPLASH

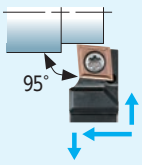


➡V8

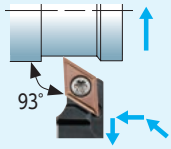
Full line-up

Front turning

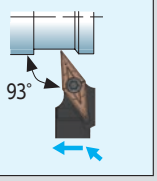
SCLC-OH NEW



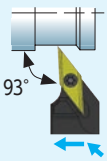
SDJC-OH NEW



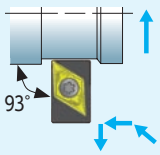
SVJB-OH NEW



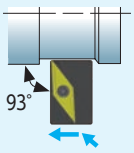
SVJC-OH NEW



Y-SDJC-OH NEW



Y-SVJC-OH NEW

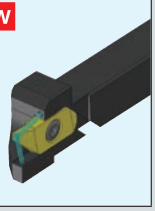


Back turning / Grooving / Side turning

TBP-OH NEW



CTPA-OH NEW



GTT-OH NEW



Y-TBP-OH NEW



Y-GTT-OH NEW



Y-GTPA-OH NEW

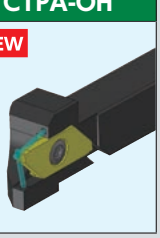


Cut-off

CTP-OH NEW



CTPA-OH NEW

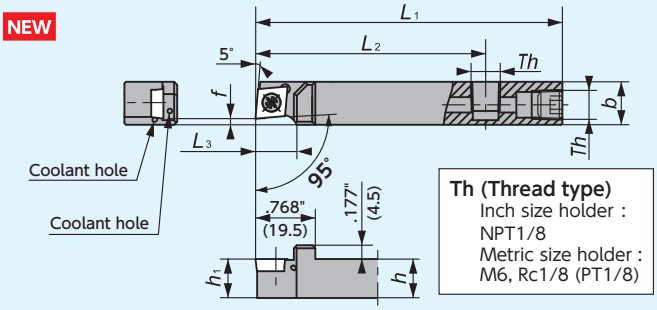


Perfect solution for chip control
- Y-axis holder with coolant through -

Front Turning Toolholders I

SCLC-N-OH (Coolant through)

NEW



Th (Thread type)
Inch size holder : NPT1/8
Metric size holder : M6, Rc1/8 (PT1/8)

Figure-1

Right-Hand style shown

DS-SCL (Coolant through)

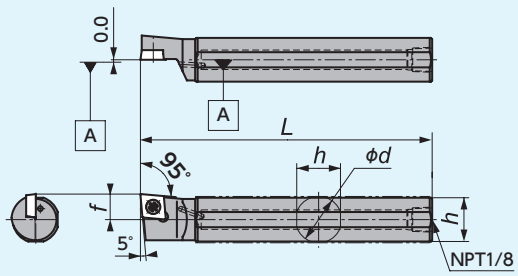


Figure-2

Left-Hand style shown
Takes Right-hand or Neutral insert

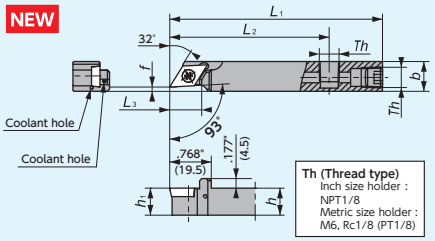
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	L_3 (Inch)	L_3 (mm)	Th	Clamp Screw	Wrench
CC..21.5..	SCLC**R/L**082H-F079-OH	1	●		1/2		.551	14	1/2		3.937	100	.079	2	2.953	75	.472	12	NPT1/8	LRIS-2.5×7	CLR-15S
CC..32.5..	SCLC**R/L**083H-F079-OH	1	●		1/2		.551	14	1/2		3.937	100	.079	2	2.953	75	.472	12	NPT1/8	LRIS-4×10	LLR-25S
	SCLC**R/L**103H-F079-OH	1	■		5/8		5/8		5/8		3.937	100	.079	2	2.953	75	.472	12	NPT1/8	LRIS-4×10	LLR-25S
	SCLC**R/L**103HL-F079-OH	1	●		5/8		5/8		5/8		3.937	100	.079	2	2.953	75	.697	17.7	NPT1/8	LRIS-4×10	LLR-25S
	SCLC**R/L**1014F09N-F02OH	1	○		.394	10	.551	14	.394	10	3.150	80	.079	2.0	2.165	55	.472	12	M6×1	LRIS-4×10	LLR-25S
	SCLC**R/L**1214H09N-F02OH	1	○		.472	12	.551	14	.472	12	3.937	100	.079	2.0	2.953	75	.472	12	Rc1/8(PT1/8)	LRIS-4×10	LLR-25S
	SCLC**R/L**1616H09N-F02OH	1	○		.630	16	.630	16	.630	16	3.937	100	.079	2.0	2.953	75	.697	17.7	Rc1/8(PT1/8)	LRIS-4×10	LLR-25S

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
CC..32.5..	DS-SCLL19-09-004	2		●	3/4	19.050	.709	18	.709	18	4.724	120	.413	10.5	LRIS-4×8	LLR-25S-20×65
	DS-SCLL22-09-005	2		●	.866	22.000	.827	21	.827	21	4.724	120	.472	12.0	LRIS-4×8	LLR-25S-20×65

Inserts ➡Q12

SDJC-N-OH (Coolant through)

NEW



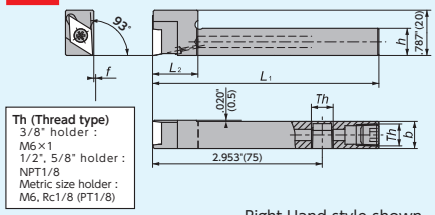
Th (Thread type)
Inch size holder : NPT1/8
Metric size holder : M6, Rc1/8 (PT1/8)

Figure-3

Right-Hand style shown

Y-SDJC-OH (Coolant through)

NEW



Th (Thread type)
3/8" holder : M6×1
1/2", 5/8" holder : NPT1/8
Metric size holder : M6, Rc1/8 (PT1/8)

Figure-4

Right-Hand style shown
Takes Right-hand or Neutral insert

DS-SDX (Coolant through)

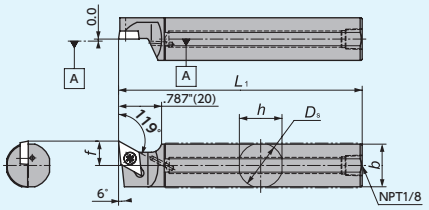


Figure-5

Left-Hand style shown
Takes Right-hand or Neutral insert

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	L_3 (Inch)	L_3 (mm)	Th	Clamp Screw	Wrench
			N																		
DC..21.5../DC..21.5..WP	SDJC**R/L**082H-F079-OH	3	●		1/2		.551	14	1/2		3.937	100	.079	2	2.953	75	.630	16	NPT1/8	LRIS-2.5×7	CLR-15S
DC..32.5.. DC..32.5..WP	SDJC**R/L**083H-F079-OH	3	●		1/2		.551	14	1/2		3.937	100	.079	2	2.953	75	.630	16	NPT1/8	LRIS-4×10	LLR-25S
	SDJC**R/L**103H-F079-OH	3	■		5/8		5/8		5/8		3.937	100	.079	2	2.953	75	.630	16	NPT1/8	LRIS-4×10	LLR-25S
	SDJC**R/L**103HL-F079-OH	3	●		5/8		5/8		5/8		3.937	100	.079	2	2.953	75	.724	18.4	NPT1/8	LRIS-4×10	LLR-25S
	SDJC**R/L**1014F11N-F02OH	3	○		.392	10	.551	14	.394	10	3.150	80	.079	2	2.165	55	.630	16	M6×1	LRIS-4×10	LLR-25S
	SDJC**R/L**1214H11N-F02OH	3	●		.472	12	.551	14	.472	12	3.937	100	.079	2	2.953	75	.630	16	Rc1/8(PT1/8)	LRIS-4×10	LLR-25S
	SDJC**R/L**1616H11N-F02OH	3	○		.630	16	.630	16	.630	16	3.937	100	.079	2	2.953	75	.724	18.4	Rc1/8(PT1/8)	LRIS-4×10	LLR-25S
DC..21.5.. DC..21.5..WP	Y-SDJCR062H-IN-OH	4	●		3/8		3/8				3.937	100	0	0	.984	25			M6×1	LRIS-2.5×7	CLR-15S
	Y-SDJCR082H-IN-OH	4	●		1/2		1/2				3.937	100	0	0	.984	25			NPT1/8	LRIS-2.5×7	CLR-15S
DC..32.5.. DC..32.5..WP	Y-SDJCR083H-IN-OH	4	●		1/2		1/2				3.937	100	0	0	.984	25			NPT1/8	LRIS-4×10	LLR-25S-20×65
	Y-SDJCR103H-IN-OH	4	●		5/8		5/8				3.937	100	0	0	.984	25			NPT1/8	LRIS-4×10	LLR-25S-20×65
	Y-SDJCR1212H11S-OH	4	●		.472	12.0	.472	12.0			3.937	100	0	0	.787	20			Rc1/8(PT1/8)	LRIS-4×10	LLR-25S-20×65
	Y-SDJCR1616H11-OH	4	○		.630	16.0	.630	16.0			3.937	100	0	0	.984	25			Rc1/8(PT1/8)	LRIS-4×10	LLR-25S-20×65

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
DC..32.5.. DC..32.5..WP	DS-SDX**R/L**22-11-006	5		●	.866	22.000	.827	21.0	.827	21.0	4.724	120	.472	12.0	LRIS-4×10	LLR-25S-20×65

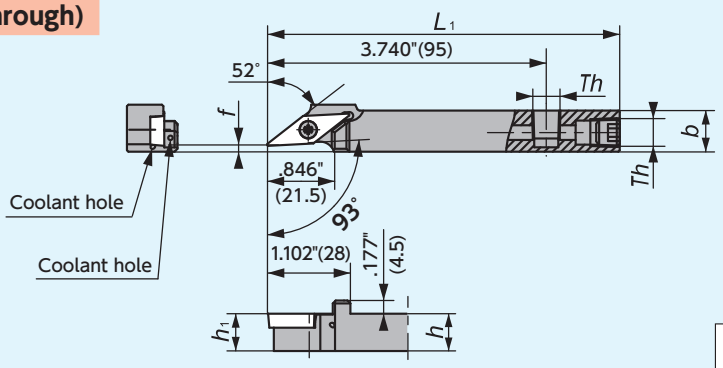
● : Stock ○ : 1-2 week delivery ■ : While stock lasts 💧 : Coolant through

Inserts ➡Q20 Cutting condition ➡Q4

Front Turning Toolholders Ⅱ

SVJB-OH (Coolant through)

NEW



Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: Rc1/8 (PT1/8)

Figure-1

●Left-Hand coolant through holders are designed for Right-Hand machines.

■VBGT33

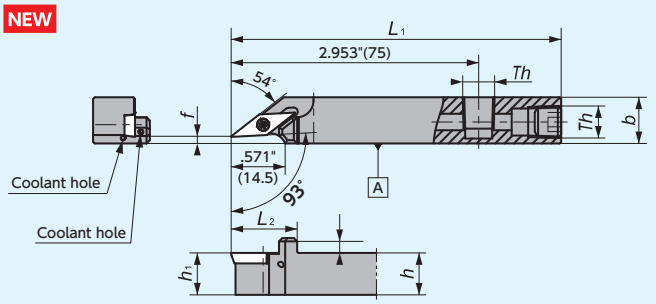
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	g (Inch)	g (mm)	Th	Clamp Screw	Wrench
 VBGT33..	SVJBR⅛083C-F079-OH	1	●	●	1/2		.551	14	1/2		4.724	120	.079	2	.079	2	NPT1/8	LRIS-4 × 10	LLR-25S
	SVJBR⅛103C-F079-OH	1	●	●	5/8		5/8		5/8		4.724	120	.079	2	0	0	NPT1/8	LRIS-4 × 10	LLR-25S
	SVJBR⅛1214-X16N-F02OH	1	●	●	.472	12	.551	14	.472	12	4.724	120	.079	2	.079	2	Rc1/8(PT1/8)	LRIS-4 × 10	LLR-25S
	SVJBR⅛1616-X16N-F02OH	1	●	●	.630	16	.630	16	.630	16	4.724	120	.079	2	0	0	Rc1/8(PT1/8)	LRIS-4 × 10	LLR-25S

●Left-Hand coolant through holders are designed for Right-Hand machines.

Inserts ➡Q24

SVJC-OH (Coolant through)

NEW



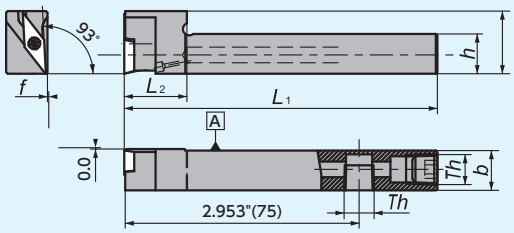
Th (Thread type)
Inch size holder: NPT1/8

Right-Hand style shown

Figure-2

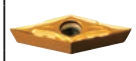
Y-SVJCR-OH (Coolant through)

NEW



Th (Thread type)
Inch size holder: NPT1/8

Figure-3

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Th	Clamp Screw	Wrench
			N																
 VC..22..	SVJCR⅛-082H-F079-OH	2	●		1/2		.551	14	1/2		3.937	100	.079	2.0	.787	20	NPT1/8	LRIS-2.5 × 7	CLR-15S
	SVJCR⅛-102H-F079-OH	2	●		5/8		5/8		5/8		3.937	100	.079	2.0	.787	20	NPT1/8	LRIS-2.5 × 7	CLR-15S
	Y-SVJCR082HS-IN-OH	3	●		1/2		1/2				3.937	100	0.0	0.0	.787	20	NPT1/8	LRIS-2.5 × 7	CLR-15S
	Y-SVJCR102H-IN-OH	3	●		5/8		5/8				3.937	100	0.0	0.0	.984	25	NPT1/8	LRIS-2.5 × 7	CLR-15S

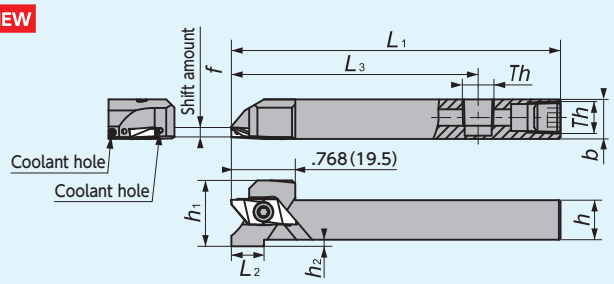
Inserts ➡Q29 Cutting condition ➡Q4

Back Turning Toolholders

TBP-OH (Coolant through)

Screw accessible from both sides

NEW



Th (Thread type)
3/8" holder : M6×1
1/2", 5/8" holder : NPT1/8
Metric size holder : Rc1/8 (PT1/8)

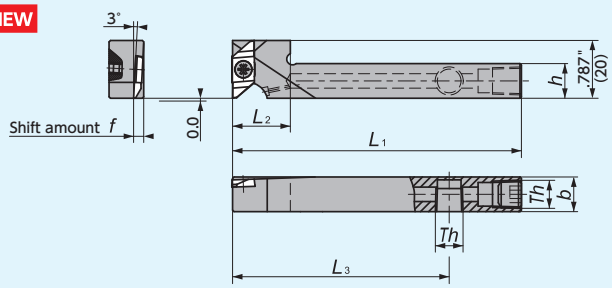
Figure-1

Right-Hand style shown

Y-TBP-OH (Coolant through)

Screw accessible from both sides

NEW



Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: M6, Rc1/8 (PT1/8)

Figure-2

Right-Hand style shown
Takes Right-hand Insert

TBP

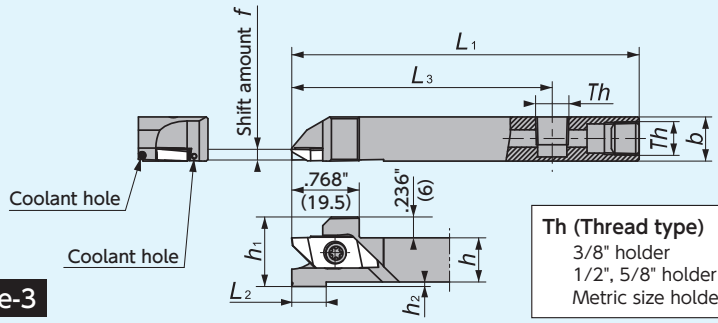
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	h_2 (Inch)	h_2 (mm)	L_3 (Inch)	L_3 (mm)	Th	Clamp Screw	Wrench
 TBP..	TBP□06-IN-OH	1	●		3/8		.472	12	3/8		3.937	100	.138	3.5	.748	19	.176	4.475	2.953	75	M6 × 1	LRIS-4×10PW	CLR-15S
	TBP□08-IN-OH	1	●		1/2		1/2		1/2		3.937	100	.138	3.5	.394	10	.051	1.3	2.953	75	NPT1/8	LRIS-4×12PW	CLR-15S
	TBP□10-IN-OH	1	●		5/8		5/8		5/8		3.937	100	.138	3.5	0	0	0	0	2.953	75	NPT1/8	LRIS-4×12PW	CLR-15S
	TBP□1012H-OH	1	○		.394	10	.472	12	.394	10	3.937	100	.138	3.5	.748	19	.176	4.475	2.953	75	M6 × 1	LRIS-4×10PW	CLR-15S
	TBP□12H-OH	1	●		.472	12	.472	12	.472	12	3.937	100	.138	3.5	.394	10	.051	1.3	2.953	75	Rc1/8(PT1/8)	LRIS-4×12PW	CLR-15S
	TBP□16H-OH	1	○		.630	16	.630	16	.630	16	3.937	100	.138	3.5	0	0	0	0	2.953	75	Rc1/8(PT1/8)	LRIS-4×12PW	CLR-15S
	Y-TBP□08H-IN-OH	2	●		1/2		1/2		—	—	3.937	100	.138	3.5	.984	25	—	—	2.953	75	NPT1/8	LRIS-4×12PW	CLR-15S
	Y-TBP□12HS-OH	2	●		.472	12	.472	12	—	—	3.937	100	.138	3.5	.787	20	—	—	2.953	75	Rc1/8(PT1/8)	LRIS-4×12PW	CLR-15S
	Y-TBP□16H-OH	2	○		.630	16	.630	16	—	—	3.937	100	.138	3.5	.984	25	—	—	2.953	75	Rc1/8(PT1/8)	LRIS-4×12PW	CLR-15S

Inserts ➡R9

CTPA-OH / TBPA-OH

Screw accessible from both sides

NEW

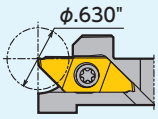


Th (Thread type)
3/8" holder : M6×1
1/2", 5/8" holder : NPT1/8
Metric size holder: Rc1/8 (PT1/8)

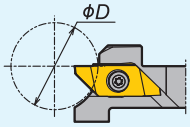
Figure-3

Max Bar Dia at Max DOC

CTPA-OH



TBPA-OH



Right-Hand style shown

CTPA (Compatible with TBPA & CTPA Inserts)

Gage Insert	Item Number	Figure	Stock R	Stock L	Max. Bar Dia. ϕD (Inch)	Max. Bar Dia. ϕD (mm)	h (Inch)	h (mm)	h_1 (Inch)	h_1 (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	h_2 (Inch)	h_2 (mm)	L_2 (Inch)	L_2 (mm)	L_3 (Inch)	L_3 (mm)	Th	f (Inch)	f (mm)	Clamp Screw	Wrench
 TBPA..	CTPA□06H-IN-OH	3	●	●	.630	16	3/8		3/8		3/8		3.937	100	.176	4.475	.787	20	2.165	55	M6 × 1	.134	3.4	LRIS-4×10PW	CLR-15S
	CTPA□08H-IN-OH	3	●	●	.630	16	1/2		1/2		1/2		3.937	100	.051	1.3	.394	10	2.953	75	NPT1/8	.134	3.4	LRIS-4×12PW	CLR-15S
	CTPA□10H-IN-OH	3	●	●	.630	16	5/8		5/8		5/8		3.937	100	0	0	0	0	2.953	75	NPT1/8	.134	3.4	LRIS-4×12PW	CLR-15S
	CTPA□12H-OH	2	●	●	.630	16	.472	12	.472	12	.472	12	3.937	100	.079	2	.768	19.5	.394	10	Rc1/8(PT1/8)	.134	3.4	LRIS-4×12PW	CLR-15S
	CTPA□16H-OH	2	○	○	.630	16	.630	16	.630	16	.630	16	3.937	100	0	0	.768	19.5	0	0	Rc1/8(PT1/8)	.134	3.4	LRIS-4×12PW	CLR-15S

TBPA (Optimized for TBPA Inserts)

Gage Insert	Item Number	Figure	Stock R	Stock L	Max. Bar Dia. ϕD (Inch)	Max. Bar Dia. ϕD (mm)	h (Inch)	h (mm)	h_1 (Inch)	h_1 (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	h_2 (Inch)	h_2 (mm)	L_2 (Inch)	L_2 (mm)	L_3 (Inch)	L_3 (mm)	Th	f (Inch)	f (mm)	Clamp Screw	Wrench
 TBPA..	TBPA□12H-OH*	2	○		.984	25	.472	12	.472	12	.472	12	3.937	100	.157	4	.768	19.5	.394	10	Rc1/8(PT1/8)	.134	3.4	LRIS-4X12PW	CLR-15S
	TBPA□16H-OH*	2	○		1.378	35	.630	16	.630	16	.630	16	3.937	100	.079	2	.768	19.5	.394	10	Rc1/8(PT1/8)	.134	3.4	LRIS-4X12PW	CLR-15S
	TBPA□20H-OH*	2	○		1.969	50	.787	20	.787	20	.787	20	3.937	100	0	0	.768	19.5	0	0	Rc1/8(PT1/8)	.134	3.4	LRIS-4X12PW	CLR-15S

＊To be released in June 2015.

● : Stock ○ : 1-2 week delivery 💧 : Coolant through

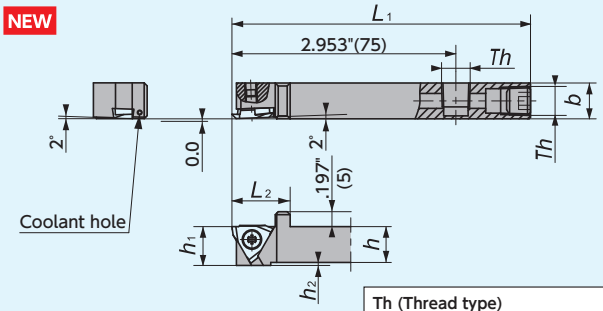
Inserts ➡R11 Cutting condition ➡R3

Back Turning / Grooving / Side Turning Toolholders

GTT-OH (Coolant through)

Screw accessible from both sides

NEW



Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: M6, Rc1/8 (PT1/8)

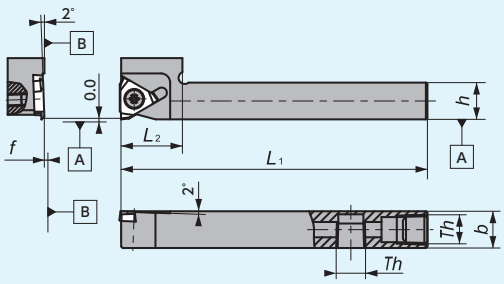
Figure-1

Right-Hand style shown

Y-GTT-OH (Coolant through)

Screw accessible from both sides

NEW



Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: Rc1/8 (PT1/8)

Figure-2

Right-Hand style shown
Takes Right-hand Insert

■GTT

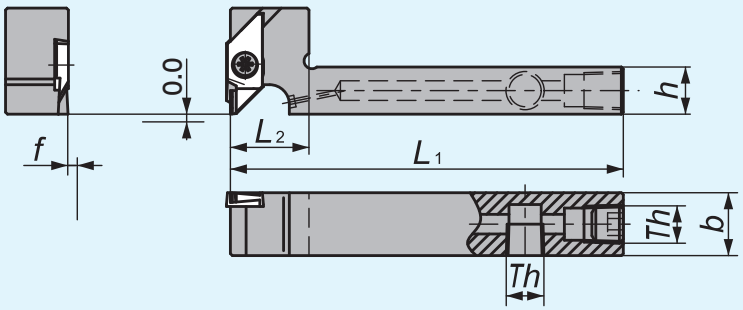
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	a_r (Inch)	a_r (mm)	h_2 (Inch)	h_2 (mm)	Th	Clamp Screw	Wrench
TBMH32.. GTM.32.. TMG32	GTT□08HA-IN-OH	1	●		1/2		1/2		1/2		3.937	100	.000	0	.768	19.5	.071	1.8	.039	1	NPT1/8	LR-S-4×10PW	CLR-15S
	GTT□08HB-IN-OH	1	●		1/2		1/2		1/2		3.937	100	.000	0	.768	19.5	.106	2.7	.039	1	NPT1/8	LR-S-4×10PW	CLR-15S
	GTT□10HA-IN-OH	1	●		5/8		5/8		5/8		3.937	100	.000	0	.768	19.5	.071	1.8	.000	0	NPT1/8	LR-S-4×10PW	CLR-15S
	GTT□10HB-IN-OH	1	●		5/8		5/8		5/8		3.937	100	.000	0	.768	19.5	.106	2.7	.000	0	NPT1/8	LR-S-4×10PW	CLR-15S
	GTT□1012H00-OH	1	○		.394	10	.472	12	.394	10	3.937	100	.000	0	.768	19.5	.071	1.8	.039	1	M6 × 1	LR-S-4×10PW	CLR-15S
	GTT□12H00-OH	1	●		.472	12	.472	12	.472	12	3.937	100	.000	0	.768	19.5	.071	1.8	.039	1	Rc1/8(PT1/8)	LR-S-4×10PW	CLR-15S
	GTT□16H00-OH	1	○		.630	16	.630	16	.630	16	3.937	100	.000	0	.768	19.5	.071	1.8	0	0	Rc1/8(PT1/8)	LR-S-4×10PW	CLR-15S
	Y-GTT□08H-IN-OH	2	●		1/2		1/2		–	–	3.937	100	.000	0	.984	25.0	.063	1.6	–	–	NPT1/8	LR-S-4×10PW	CLR-15S
	Y-GTT□12H00S-OH	2	●		.472	12	.472	12	–	–	3.937	100	.000	0	.787	20.0	.063	1.6	–	–	Rc1/8(PT1/8)	LR-S-4×10PW	CLR-15S
	Y-GTT□16H00-OH	2	○		.630	16	.472	16	–	–	3.937	100	.000	0	.984	25.0	.063	1.6	–	–	Rc1/8(PT1/8)	LR-S-4×10PW	CLR-15S

Inserts TBMH ➔R19
Inserts GTM. ➔T12

Y-GTPA-OH (Coolant through)

Screw Accessible from both sides

NEW



Th (Thread type)
Metric size holder: Rc1/8 (PT1/8)

Figure-3

Right-Hand style shown

■GTPA

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Th	Clamp Screw	Wrench
 GTPA	Y-GTPA□1216HS-OH	3	○		.472	12	.630	16	–	–	2.756	70	.004	0.1	.787	20	Rc1/8(PT1/8)	LRIS-4 × 12PW	CLR-15S
	Y-GTPA□1216H-OH	3	○		.630	16	.630	16	–	–	2.756	70	.004	0.1	.984	25	Rc1/8(PT1/8)	LRIS-4 × 12PW	CLR-15S

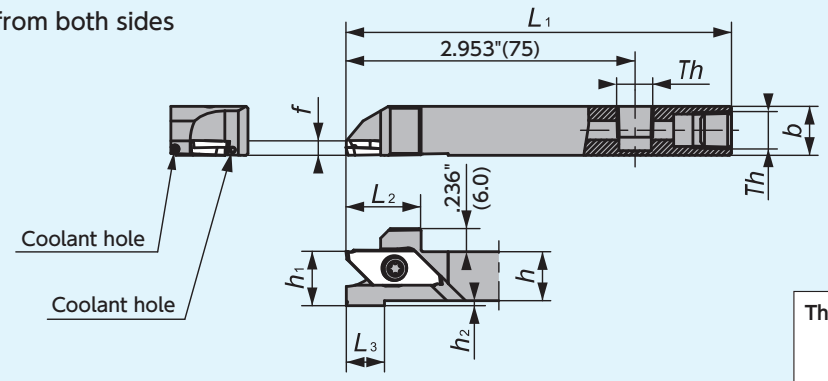
Inserts ➔T24

Cut-off Toolholders

CTP-OH (Coolant through)

Screw Accessible from both sides

NEW



Th (Thread type)
3/8" holder : M6×1
1/2", 5/8" holder : NPT1/8
Metric size holder: Rc1/8 (PT1/8)

Figure-1

●Left-Hand holders are designed for Right-Hand machines

Right-Hand style shown

■CTP

Gage Insert	Item Number	Figure	Stock R	Stock L	Max. Cut-off Dia. φD* (Inch)	(mm)	h (Inch)	(mm)	h1 (Inch)	(mm)	b (Inch)	(mm)	L1 (Inch)	(mm)	h2 (Inch)	(mm)	L2 (Inch)	(mm)	L3 (Inch)	(mm)	Th	f (Inch)	(mm)	Clamp Screw	Wrench
 CTP FR../FL..	CTPR⅛06H-IN-OH	1	●	●	.472	12	3/8		.472	12	3/8		3.937	100	.176	4.475	.768	19.5	.748	19	M6 × 1	0.0	0.0	LRIS-4×10PW	CLR-15S
	CTPR⅛08H-IN-OH	1	●	●	.472	12	1/2		1/2		1/2		3.937	100	.051	1.3	.768	19.5	.394	10	NPT1/8	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR⅛1012H-OH	1	○	○	.472	12	.394	10	.472	12	.394	10	3.937	100	.176	4.475	.768	19.5	.748	19	M6 × 1	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR⅛12H-OH	1	●	●	.472	12	.472	12	.472	12	.472	12	3.937	100	.051	1.3	.768	19.5	.394	10	Rc1/8(PT1/8)	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR⅛16H-OH	1	○	○	.472	12	.630	16	.630	16	.630	16	3.937	100	0	0	.768	19.5	—	—	Rc1/8(PT1/8)	0.0	0.0	LRIS-4×12PW	CLR-15S

●Left-Hand coolant through holders are designed for Right-Hand machines.

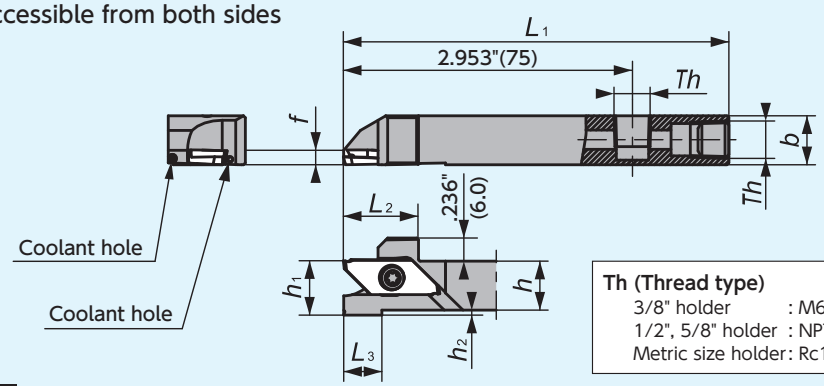
＊Would be changed by insert

Inserts ➔S10・S12

CTPA-OH / TBPA-OH

Screw Accessible from both sides

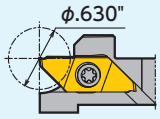
NEW



Th (Thread type)
3/8" holder : M6×1
1/2", 5/8" holder : NPT1/8
Metric size holder: Rc1/8 (PT1/8)

Max Bar Dia at Max DOC

CTPA-OH



TBPA-OH

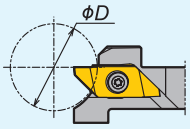


Figure-2

●Left-Hand holders are designed for Right-Hand machines

Right-Hand style shown

■CTPA (Compatible with TBPA & CTPA Inserts)

Gage Insert	Item Number	Figure	Stock R	Stock L	Max. Cut-off Dia. φD* (Inch)	(mm)	h (Inch)	(mm)	h1 (Inch)	(mm)	b (Inch)	(mm)	L1 (Inch)	(mm)	h2 (Inch)	(mm)	L2 (Inch)	(mm)	L3 (Inch)	(mm)	Th	f (Inch)	(mm)	Clamp Screw	Wrench
 CTPA FR../FL..	CTPAR⅛06H-IN-OH	2	●	●	.630	16	3/8		.472	12	3/8		3.937	100	.176	4.475	.768	19.5	.787	20	M6 × 1	0.0	0.0	LRIS-4×10PW	CLR-15S
	CTPAR⅛08H-IN-OH	2	●	●	.630	16	1/2		1/2		1/2		3.937	100	.051	1.3	.768	19.5	.394	10	NPT1/8	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPAR⅛10H-IN-OH	2	●	●	.630	16	5/8		5/8		5/8		3.937	100	0	0	.768	19.5	—	—	NPT1/8	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPAR⅛12H-OH	2	●	●	.630	16	.472	12	.472	12	.472	12	3.937	100	.079	2	.768	19.5	.394	10	Rc1/8(PT1/8)	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPAR⅛16H-OH	2	○	○	.630	16	.630	16	.630	16	.630	16	3.937	100	0	0	.768	19.5	0	0	Rc1/8(PT1/8)	0.0	0.0	LRIS-4×12PW	CLR-15S

●Left-Hand coolant through holders are designed for Right-Hand machines.

＊Would be changed by insert

● : Stock ○ : 1-2 week delivery 💧 : Coolant through

Inserts ➔S10・S12 Cutting condition ➔S5

ID Tooling - STICK DUO SPLASH -

HY-NBH-OH (Coolant through)

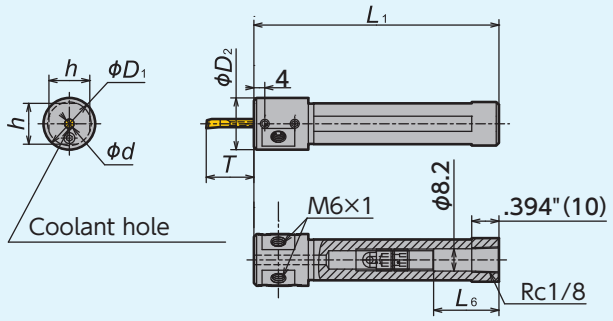


Figure-1

HY-NBH-OH (Coolant through)

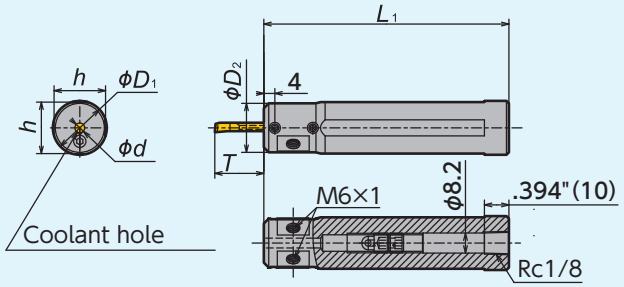
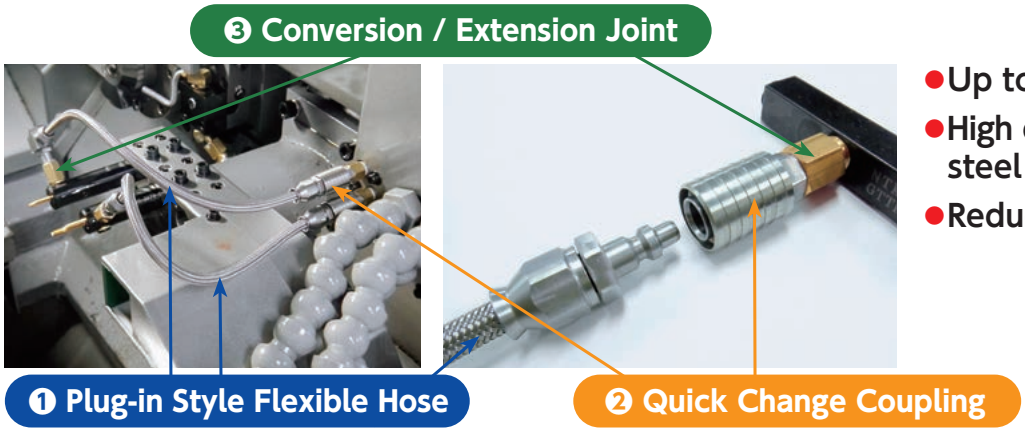


Figure-2

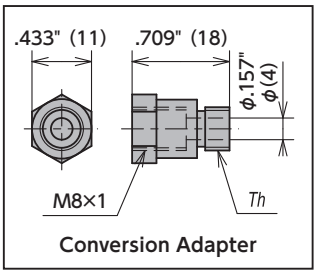
Item Number	Stock	Figure	ϕ d		ϕD1		ϕD2	h	L1	Overhang Length of Bar T			
										Min.		Max.	
			(Inch)	(mm)	(Inch)	(mm)	(mm)	(mm)	(mm)	(Inch)	(mm)	(Inch)	(mm)
HY-NBH02016G-OH	●	1	.079	2	.630	16	19	15	90	.197	5.0	.709	18.0
HY-NBH02516G-OH	●	1	.098	2.5	.630	16	19	15	90	.248	6.3	.768	19.5
HY-NBH03016G-OH	●	1	.118	3	.630	16	19	15	90	.295	7.5	.827	21.0
HY-NBH03516G-OH	●	1	.138	3.5	.630	16	19	15	90	.346	8.8	.965	24.5
HY-NBH04016G-OH	●	1	.157	4	.630	16	19	15	90	.394	10.0	1.102	28.0
HY-NBH05016G-OH	●	1	.197	5	.630	16	19	15	90	.492	12.5	1.378	35.0
HY-NBH02019J-OH	●	2	.079	2	3/4	19.05	19.05	18	110	.197	5.0	.709	18.0
HY-NBH02519J-OH	●	2	.098	2.5	3/4	19.05	19.05	18	110	.248	6.3	.768	19.5
HY-NBH03019J-OH	●	2	.118	3	3/4	19.05	19.05	18	110	.295	7.5	.827	21.0
HY-NBH03519J-OH	●	2	.138	3.5	3/4	19.05	19.05	18	110	.346	8.8	.965	24.5
HY-NBH04019J-OH	●	2	.157	4	3/4	19.05	19.05	18	110	.394	10.0	1.102	28.0
HY-NBH05019J-OH	●	2	.197	5	3/4	19.05	19.05	18	110	.492	12.5	1.378	35.0
HY-NBH02020J-OH	●	2	.079	2	.787	20	20	19	110	.197	5.0	.709	18.0
HY-NBH02520J-OH	●	2	.098	2.5	.787	20	20	19	110	.248	6.3	.768	19.5
HY-NBH03020J-OH	●	2	.118	3	.787	20	20	19	110	.295	7.5	.827	21.0
HY-NBH03520J-OH	●	2	.138	3.5	.787	20	20	19	110	.346	8.8	.965	24.5
HY-NBH04020J-OH	●	2	.157	4	.787	20	20	19	110	.394	10.0	1.102	28.0
HY-NBH05020J-OH	●	2	.197	5	.787	20	20	19	110	.492	12.5	1.378	35.0
HY-NBH02022X-OH	●	2	.079	2	.866	22	20	21	120	.197	5.0	.709	18.0
HY-NBH02522X-OH	●	2	.098	2.5	.866	22	20	21	120	.248	6.3	.768	19.5
HY-NBH03022X-OH	●	2	.118	3	.866	22	20	21	120	.295	7.5	.827	21.0
HY-NBH03522X-OH	●	2	.138	3.5	.866	22	20	21	120	.346	8.8	.965	24.5
HY-NBH04022X-OH	●	2	.157	4	.866	22	20	21	120	.394	10.0	1.102	28.0
HY-NBH05022X-OH	●	2	.197	5	.866	22	20	21	120	.492	12.5	1.378	35.0
HY-NBH02025.0K-OH	●	2	.079	2	.984	25.0	20	24	125	.197	5.0	.709	18.0
HY-NBH02525.0K-OH	●	2	.098	2.5	.984	25.0	20	24	125	.248	6.3	.768	19.5
HY-NBH03025.0K-OH	●	2	.118	3	.984	25.0	20	24	125	.295	7.5	.827	21.0
HY-NBH03525.0K-OH	●	2	.138	3.5	.984	25.0	20	24	125	.346	8.8	.965	24.5
HY-NBH04025.0K-OH	●	2	.157	4	.984	25.0	20	24	125	.394	10.0	1.102	28.0
HY-NBH05025.0K-OH	●	2	.197	5	.984	25.0	20	24	125	.492	12.5	1.378	35.0
HY-NBH02025.4K-OH	●	2	.079	2	1	25.4	20	24	125	.197	5.0	.709	18.0
HY-NBH02525.4K-OH	●	2	.098	2.5	1	25.4	20	24	125	.248	6.3	.768	19.5
HY-NBH03025.4K-OH	●	2	.118	3	1	25.4	20	24	125	.295	7.5	.827	21.0
HY-NBH03525.4K-OH	●	2	.138	3.5	1	25.4	20	24	125	.346	8.8	.965	24.5
HY-NBH04025.4K-OH	●	2	.157	4	1	25.4	20	24	125	.394	10.0	1.102	28.0
HY-NBH05025.4K-OH	●	2	.197	5	1	25.4	20	24	125	.492	12.5	1.378	35.0

Insert bars ➡V12 Cutting condition ➡V4

Quick-change Coolant Components



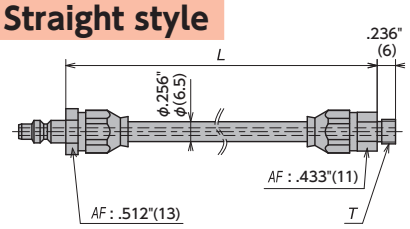
- Up to 2900psi
- High quality flexible stainless steel braided hose
- Reduce machine downtime

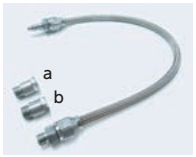


Conversion Adapter

① Plug-in Style Flexible Hose

Straight style

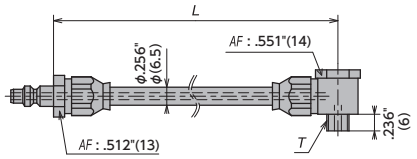


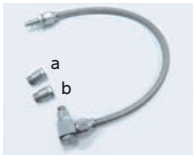


a : Convert M8×1 to M10×1
b : Convert M8×1 to G1/8 (PF1/8)

Figure-1

L-style





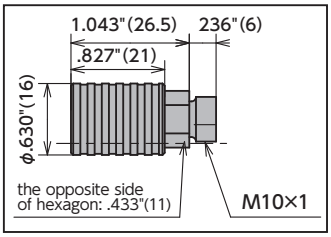
a : Convert M8×1 to M10×1
b : Convert M8×1 to G1/8 (PF1/8)

Figure-2

Item Number	Figure	Stock	L (Inch)	L (mm)	T	Comes with
HOSE-ST-1/8NPT-4IN	1	●	4.000	101.6	NPT1/8	—
HOSE-ST-1/8NPT-6IN	1	●	6.000	152.4	NPT1/8	—
HOSE-ST-1/8NPT-10IN	1	●	10.000	254.0	NPT1/8	—
HOSE-ST-M8*1	1	●	11.811	300.0	M8 × 1	Conversion Adapter a and b
HOSE-AN-M8*1	2	●	11.890	302.0	M8 × 1	Conversion Adapter a and b

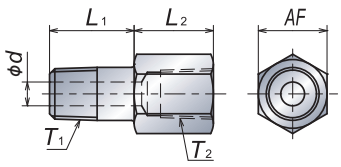
② Quick Change Coupling





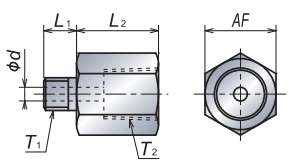
Item Number	Stock	Comes with
COUP-M10*1	●	Seal Plug

③ Conversion / Extension Joint



For square shank holders

Figure-3



For sleeves

Figure-4

Item Number	Figure	Stock	T_1 (mm)	T_2 (mm)	L_1 (mm)	L_2 (mm)	AF (mm)	d (mm)
SCJ-M6-RC1/8-L	3	○	M6 × 1	Rc1/8 (PT1/8)	16	15	13	2.5
SCJ-NPT1/8-M10-L	3	●	NPT1/8	M10 × 1	16	12	13	4.5
SCJ-R1/8-M10-L	3	○	R1/8 (PT1/8)	M10 × 1	16	12	13	4.5
SCJ-R1/8-RC1/8-L	3	○	R1/8 (PT1/8)	Rc1/8 (PT1/8)	16	15	13	4.5
SCJ-R1/8-NPT1/8-L	3	●	R1/8 (PT1/8)	NPT1/8	16	15	13	4.5
SCJ-M6-M10	4	○	M6 × 1	M10 × 1	6	15	12	2.5
SCJ-M6-RC1/8	4	○	M6 × 1	Rc1/8 (PT1/8)	6	15	13	2.5
SCJ-M6-NPT1/8	4	●	M6 × 1	NPT1/8	6	15	13	2.5
SCJ-M8-RC1/8	4	○	M8 × 1	Rc1/8 (PT1/8)	6	15	13	3.5
SCJ-R1/8-M10	4	○	R1/8 (PT1/8)	M10 × 1	10	15	12	4.5
SCJ-R1/8-NPT1/8	4	●	R1/8 (PT1/8)	NPT1/8	10	15	13	4.5

● : Stock ○ : 1-2 week delivery 💧 : Coolant through

Y-axis Toolholders

Chip control by gravity

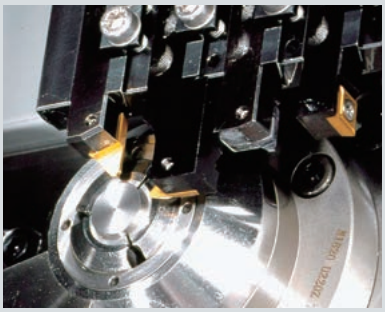


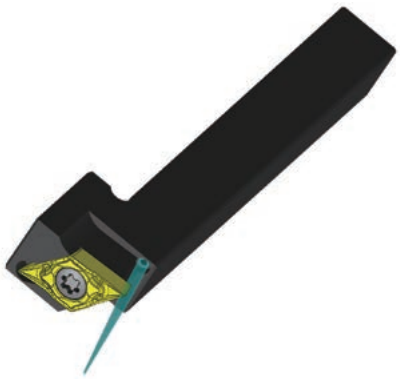
Features

WATCH ON YouTube

- Chip drops down to the bed of the machine due to gravity, and chip control problem is solved
- Available in coolant through style
- Front turning, grooving, and back turning operations can be performed by utilizing Y-axis control







- Perfect solution for chip problems
- Less wear, more stable dimensions

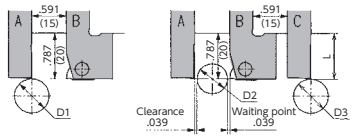
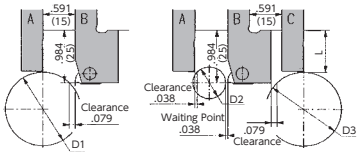
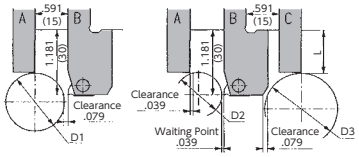
Programming guidance

Regular Toolholder					Y-axis Toolholder				
①T300				Select tool	①T300				
②G0	X .450	Z .000	T3	Position tool	②G0	Y .450	Z .000	T3	
③					③	X .000			
④G1	X .300		F .003	Move to OD to cut	④G1	Y .300		F .003	
⑤		Z .200	F .002	Cut .200" length	⑤		Z .200	F .002	
⑥	X .400			Cut face	⑥	Y .450			
⑦G0	X .450				⑦G0	X .450			
	Cut by X-axis					Cut by Y-axis			

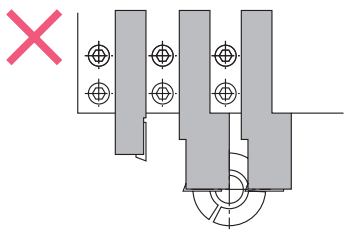
Note: Need Y-offset for holder shank size.

Machinable OD Dimensions

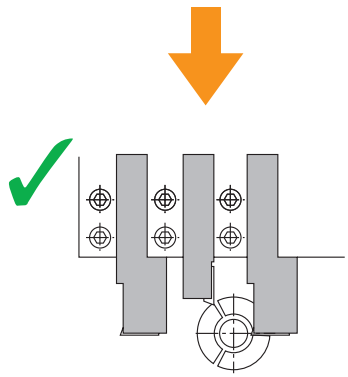
*Machinable ODs with Y-GTTR type grooving toolholders are shown as an example (The dimensions apply to other Y-axis toolholders as well)

Y-axis Holder Overhang	Tool Layout	Situation	Overhang Amount (L)		
			.787 (20mm)	.866 (22mm)	.984 (25mm)
.787 (20mm)		D1 Max machinable OD with Holder A	No limitation	No limitation	No limitation
		D2 Max machinable OD with Holder B	.512 (13mm)	.512 (13mm)	.512 (13mm)
		D3 Max machinable OD with Holder C	No limitation	No limitation	No limitation
.984 (25mm)		D1 Max machinable OD with Holder A	1.496 (38mm)	2.283 (58mm)	No limitation
		D2 Max machinable OD with Holder B	.587 (14.9mm)	.535 (13.6mm)	.512 (13mm)
		D3 Max machinable OD with Holder C	1.496 (38mm)	2.283 (58mm)	No limitation
1.181 (30mm)		D1 Max machinable OD with Holder A	1.055 (26.8mm)	1.142 (29mm)	1.516 (38.5mm)
		D2 Max machinable OD with Holder B	.811 (20.6mm)	.705 (17.9mm)	.587 (14.9mm)
		D3 Max machinable OD with Holder C	1.299 (33mm) 1.055 (26.8mm) for TBP style	1.457 (37mm) 1.142 (29mm) for TBP style	2.028 (51.5mm) 1.516 (38.5mm) for TBP style

Important Notes for Using Y-axis Toolholders



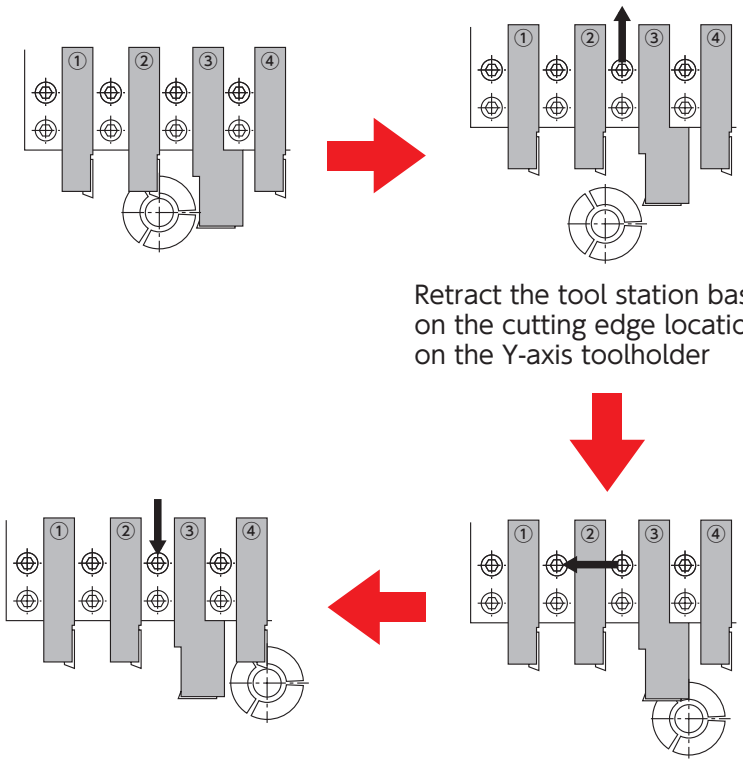
To avoid interference, two Y-axis toolholders should not be installed next to each other



Install a standard toolholder between the two Y-axis toolholders

For tool change, determine a retraction point based on the overhang of the Y-axis toolholder

● Example: Tool change from No.2 to No.4



Retract the tool station based on the cutting edge location on the Y-axis toolholder

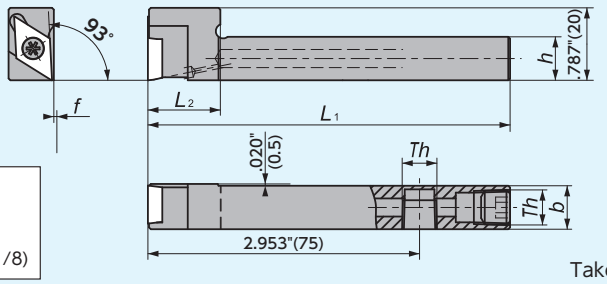
NTK Unique Tooling

Front Turning

DC.. Series - Toolholders

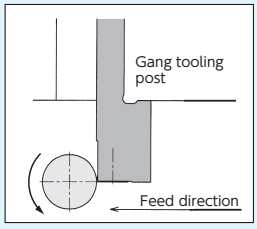
Y-SDJC-OH (Coolant through)

NEW



Th (Thread type)
3/8" holder : M6×1
1/2", 5/8" holder : NPT1/8
Metric size holder: Rc1/8 (PT1/8)

Figure-1



Right-Hand style shown
Takes Right-hand or Neutral insert

Y-SDJC

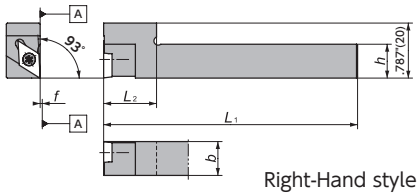


Figure-2

Right-Hand style shown
Takes Right-hand or Neutral insert

Y-SDNC

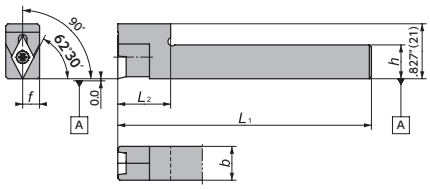


Figure-3

Takes Right-hand or Neutral insert

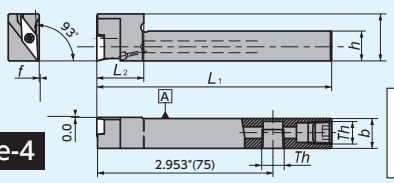
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Th	Clamp Screw	Wrench
			N														
DC..21.5.. DC..21.5..WP	Y-SDJCR062H-IN-OH	1	●		3/8		3/8		3.937	100	0	0	.984	25	M6 × 1	LRIS-2.5 × 7	CLR-15S
	Y-SDJCR082H-IN-OH	1	●		1/2		1/2		3.937	100	0	0	.984	25	NPT1/8	LRIS-2.5 × 7	CLR-15S
DC..32.5.. DC..32.5..WP	Y-SDJCR083H-IN-OH	1	●		1/2		1/2		3.937	100	0	0	.984	25	NPT1/8	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR103H-IN-OH	1	●		5/8		5/8		3.937	100	0	0	.984	25	NPT1/8	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR1212H11S-OH	1	●		.472	12.0	.472	12.0	3.937	100	0	0	.787	20	Rc1/8(PT1/8)	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR1616H11-OH	1	○		.630	16.0	.630	16.0	3.937	100	0	0	.984	25	Rc1/8(PT1/8)	LRIS-4 × 10	LLR-25S-20 × 65
DC..21.5.. DC..21.5..WP	Y-SDJCR062-IN	2	●		3/8		3/8		4.724	120	0	0	.984	25	–	LRIS-2.5 × 7	CLR-15S
	Y-SDJCR082-IN	2	●		1/2		1/2		4.724	120	0	0	.984	25	–	LRIS-2.5 × 7	CLR-15S
	Y-SDJCR10-07S	2	○		.394	10.0	.394	10	4.724	120	0	0	.787	20	–	LRIS-2.5 × 7	CLR-15S
	Y-SDJCR12-07S	2	○		.472	12.0	.472	12	4.724	120	0	0	.787	20	–	LRIS-2.5 × 7	CLR-15S
DC..32.5.. DC..32.5..WP	Y-SDJCR083-IN	2	●		1/2		1/2		4.724	120	0	0	.984	25	–	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR103-IN	2	●		5/8		5/8		4.724	120	0	0	.984	25	–	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR10-11MS	2	○		.394	10.0	.394	10	4.724	120	0	0	.866	22	–	LRIS-2.5 × 7	CLR-15S
	Y-SDJCR10-11S	2	○		.394	10.0	.394	10	4.724	120	0	0	.787	20	–	LRIS-2.5 × 7	CLR-15S
	Y-SDJCR12-11MS	2	○		.472	12.0	.630	16	4.724	120	0	0	.866	22	–	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR12-11S	2	○		.472	12.0	.630	16	4.724	120	0	0	.787	20	–	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR16-11S	2	○		.630	16.0	.630	16	4.724	120	0	0	.787	20	–	LRIS-4 × 10	LLR-25S-20 × 65
DC..32.5..	Y-SDNCN083-IN	3	●		1/2		1/2		4.724	120	1/4	6.35	.984	25	–	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDNCN12-11S	3	○		.472	12.0	.472	12	4.724	120	.236	6.0	.787	20	–	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDNCN16-11S	3	○		.630	16.0	.630	16	4.724	120	.315	8.0	.787	20	–	LRIS-4 × 10	LLR-25S-20 × 65

Inserts ➡Q20

VC.. Series - Toolholders

Y-SVJCR-OH (Coolant through)

NEW



Th (Thread type)
Inch size holder:
NPT1/8

Figure-4

Y-SVJCR

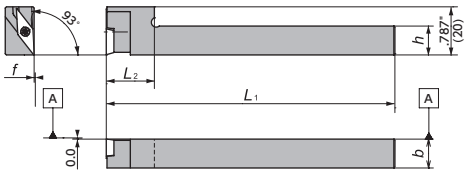


Figure-5

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Th	Clamp Screw	Wrench
			N														
VC..22..	Y-SVJCR082HS-IN-OH	4	●		1/2		1/2		3.937	100	0.0	0.0	.787	20	NPT1/8	LRIS-2.5 × 7	CLR-15S
	Y-SVJCR102H-IN-OH	4	●		5/8		5/8		3.937	100	0.0	0.0	.984	25	NPT1/8	LRIS-2.5 × 7	CLR-15S
VC..22..	Y-SVJCR062-IN	5	●		3/8		3/8		4.724	120	0.0	0.0	.787	20	–	LRIS-2.5 × 7	CLR-15S
	Y-SVJCR082-IN	5	●		1/2		1/2		4.724	120	0.0	0.0	.787	20	–	LRIS-2.5 × 7	CLR-15S
	Y-SVJCR102-IN	5	●		5/8		5/8		4.724	120	0.0	0.0	.984	25	–	LRIS-2.5 × 7	CLR-15S

Inserts ➡Q29

Back Turning

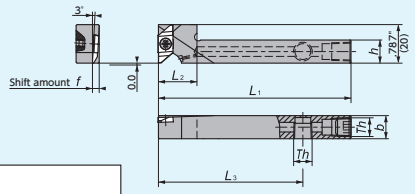
TBP Series - Toolholders

Y-TBP-OH (Coolant through)

Screw accessible from both sides

NEW

Figure-1



Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: M6, Rc1/8 (PT1/8)

Right-Hand style shown
Takes Right-hand Insert

Y-TBP

Screw accessible from both sides

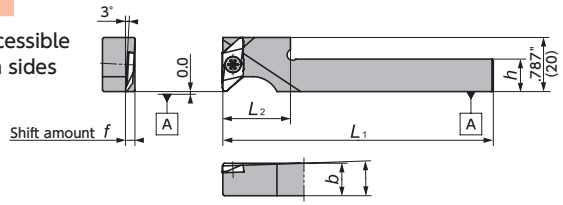


Figure-2

Right-Hand style shown
Takes Right-hand Insert

TBP

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch) (mm)	b (Inch) (mm)	h_1 (Inch) (mm)	L_1 (Inch) (mm)	f (Inch) (mm)	L_2 (Inch) (mm)	h_2 (Inch) (mm)	L_3 (Inch) (mm)	Th	Clamp Screw	Wrench
 TBP..	Y-TBP□08H-IN-OH 💧	1	●		1/2	1/2	— —	3.937 100	.138 3.5	.984 25	— —	2.953 75	NPT1/8	LRIS-4 × 12PW	CLR-15S
	Y-TBP□12HS-OH 💧	1	●		.472 12	.472 12	— —	3.937 100	.138 3.5	.787 20	— —	2.953 75	Rc1/8 (PT1/8)	LRIS-4 × 12PW	CLR-15S
	Y-TBP□16H-OH 💧	1	○		.630 16	.630 16	— —	3.937 100	.138 3.5	.984 25	— —	2.953 75	Rc1/8 (PT1/8)	LRIS-4 × 12PW	CLR-15S
	Y-TBP□06-IN	2	●		3/8	3/8	— —	2.756 70	.138 3.5	.984 25	— —	— —	—	LRIS-4 × 10PW	CLR-15S
	Y-TBP□08-IN	2	●		1/2	1/2	— —	2.756 70	.138 3.5	.984 25	— —	— —	—	LRIS-4 × 12PW	CLR-15S
	Y-TBP□10-IN	2	●		5/8	5/8	— —	2.756 70	.138 3.5	.984 25	— —	— —	—	LRIS-4 × 12PW	CLR-15S
	Y-TBP□10MS	2	○		.394 10	.394 10	— —	4.724 120	.138 3.5	.866 22	— —	— —	—	LRIS-4 × 10PW	CLR-15S
	Y-TBP□10S	2	○		.394 10	.394 10	— —	4.724 120	.138 3.5	.787 20	— —	— —	—	LRIS-4 × 10PW	CLR-15S
	Y-TBP□12MS	2	○		.472 12	.472 12	— —	4.724 120	.138 3.5	.866 22	— —	— —	—	LRIS-4 × 12PW	CLR-15S
	Y-TBP□12S	2	○		.472 12	.472 12	— —	4.724 120	.138 3.5	.787 20	— —	— —	—	LRIS-4 × 12PW	CLR-15S

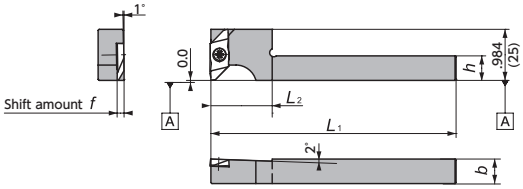
Inserts ➡R9

TBPA (CTPA) Series - Toolholders

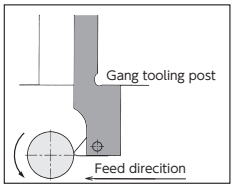
Y-CTPA

Screw accessible from both sides

Figure-3



Right-Hand style shown
Takes Right-hand Insert



CTPA

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch) (mm)	b (Inch) (mm)	h_1 (Inch) (mm)	L_1 (Inch) (mm)	f (Inch) (mm)	L_2 (Inch) (mm)	h_2 (Inch) (mm)	L_3 (Inch) (mm)	Th	Clamp Screw	Wrench
 TBPA..	Y-CTPA□08L-IN	3	●		1/2	1/2	— —	4.724 120	1.34 34	1.181 30	— —	— —	—	LRIS-4 × 12PW	CLR-15S

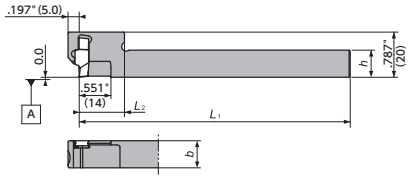
Inserts ➡R11

TBDP Series - Toolholders

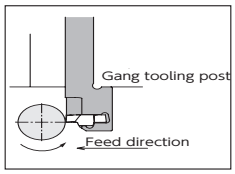
Y-TBDP

NEW

Figure-4



Right-Hand style shown



TBDP

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch) (mm)	b (Inch) (mm)	h_1 (Inch) (mm)	L_1 (Inch) (mm)	f (Inch) (mm)	L_2 (Inch) (mm)	h_2 (Inch) (mm)	L_3 (Inch) (mm)	Clamp Screw	Wrench
 TBDP..	Y-TBDPR12S	4	○		.472 12	.472 12	— —	4.724 120	.081 2.05	.787 20	— —	— —	LRIS-4 × 12	LLR-25S

● : Stock ○ : 1-2 week delivery 💧 : Coolant through

Inserts ➡R12 Cutting condition ➡R3

NTK Unique Tooling

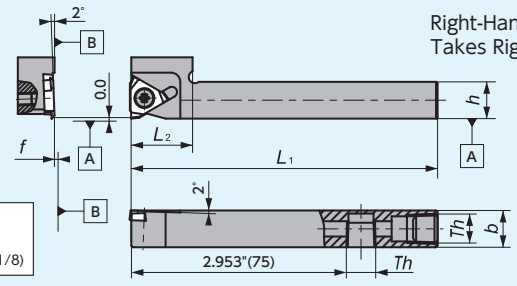
Grooving / Side turning / Back turning

GTT Series

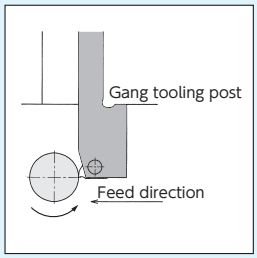
Y-GTT-OH (Coolant through)

Screw accessible from both sides

NEW



Right-Hand style shown
Takes Right-hand Insert

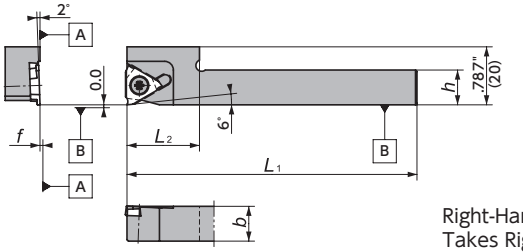


Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: M6, Rc1/8 (PT1/8)

Figure-1

Y-GTT

Screw accessible from both sides



Right-Hand style shown
Takes Right-hand Insert

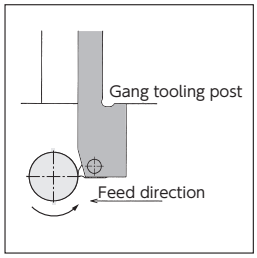


Figure-2

GTT

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	a_r (Inch)	a_r (mm)	h_2 (Inch)	h_2 (mm)	Th	Clamp Screw	Wrench
TBMH32.. GTM.32.. TMG32	Y-GTT⅛08H-IN-OH	1	●		1/2		1/2		–	–	3.937	100	.000	0	.984	25.0	.063	1.6	–	–	NTP1/8	LR-S-4×10PW	CLR-15S
	Y-GTT⅛12H00S-OH	1	●		.472	12	.472	12	–	–	3.937	100	.000	0	.787	20.0	.063	1.6	–	–	Rc1/8(PT1/8)	LR-S-4×10PW	CLR-15S
	Y-GTT⅛16H00-OH	1	○		.630	16	.472	16	–	–	3.937	100	.000	0	.984	25.0	.063	1.6	–	–	Rc1/8(PT1/8)	LR-S-4×10PW	CLR-15S
	Y-GTTR⅛06-IN	2	●		3/8		3/8		–	–	4.724	120	.000	0	.984	25.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTTR⅛08-IN	2	●		1/2		1/2		–	–	4.724	120	.000	0	.984	25.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTTR⅛10-IN	2	●		5/8		5/8		–	–	4.724	120	.000	0	.984	25.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT⅛10MS	2	○		.394	10	.394	10	–	–	4.724	120	.000	0	.866	22.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT⅛10S	2	○		.394	10	.394	10	–	–	4.724	120	.000	0	.787	20.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT⅛12MS	2	○		.472	12	.472	12	–	–	4.724	120	.000	0	.866	22.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT⅛12S	2	○		.472	12	.472	12	–	–	4.724	120	.000	0	.787	20.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S

Inserts GTM..32 ➔T12
Inserts TBMH32.. ➔R19

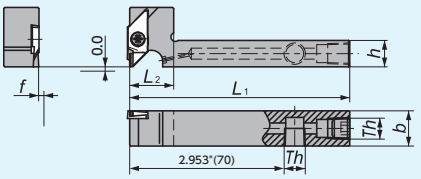
Multi-functional Grooving for non-ferrous material

GTPA Series - Inserts

Y-GTPA-OH (Coolant through)

Screw Accessible from both sides

NEW



Th (Thread type)
Metric size holder:
Rc1/8 (PT1/8)

Figure-1

Right-Hand style shown

Y-GTPA

Screw Accessible from both sides

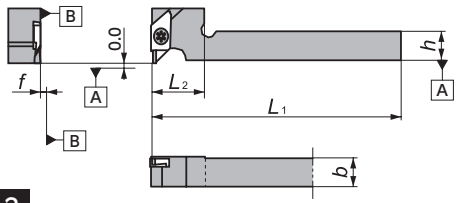


Figure-2

Right-Hand style shown

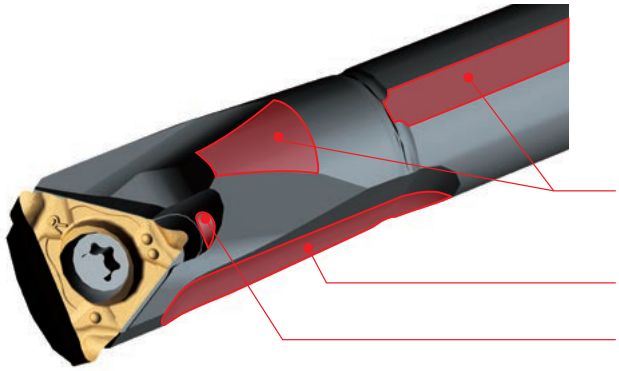
GTPA

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Th	Clamp Screw	Wrench
 GTPA	Y-GTPA⅛1216HS-OH	1	○		.472	12	.630	16	–	–	2.756	70	.004	0.1	.787	20	Rc1/8(PT1/8)	LR1S-4 × 12PW	CLR-15S
	Y-GTPA⅛1216H-OH	1	○		.630	16	.630	16	–	–	2.756	70	.004	0.1	.984	25	Rc1/8(PT1/8)	LR1S-4 × 12PW	CLR-15S
	Y-GTPA⅛1216	2	○		.472	12	.630	16	–	–	4.724	120	.004	0.1	.787	20	–	LR1S-4 × 12PW	CLR-15S

Inserts ➔T24

Mogul Bar

High rigidity boring bars



WATCH ON YouTube

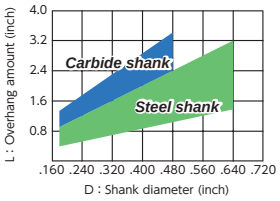
Features

- ***High rigidity + Minimal flat widths Reduce vibration***
- ***Large clearance for improved chip evacuation***
- ***All Mogul Bar boring bars are coolant through***

Recommended amount of overhang

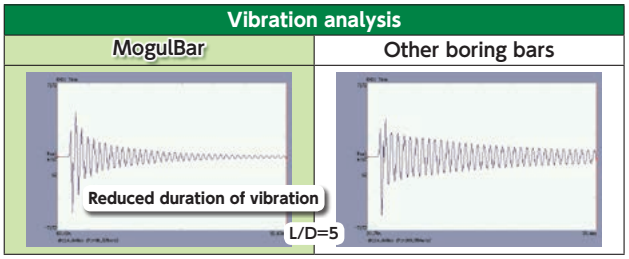
Steel Shank	L/D≦5
Carbide Shank	L/D≦7

L : Overhang
D : Shank diameter



[Cutting condition example]
Work materials: Alloy steel, stainless
260 SFM, .002 - .004 IPR, .004" - .020" DOC WET

Vibration analysis



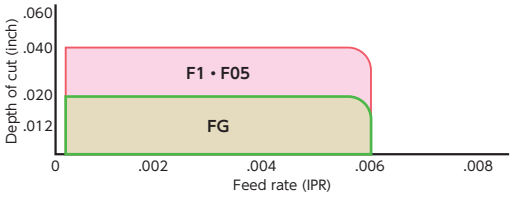
Note: Assuming a 100N load is applied. An equal amount of force was applied to both bars for vibration analysis.
Boring bar used in above analysis: S08H-STUPR09D10-OH

F Chipbreakers - Evacuate chips BACKWARD

- F chipbreakers allow chips to evacuate backward
- Combination of the F-chipbreakers and Mogul Bar delivers the best performance



Recommended Cutting Condition Range



F Chipbreakers - Features

	DOC (inch)	Feed (IPR) .002	Feed (IPR) .004
FG Chipbreaker ● Best for finishing ● Works for small DOC (.020" or less) ● High rake angle 	.004		
	.012		
F1/F05 Chipbreakers ● Cover wide condition range ● Ground chipbreaker 	.020		

Note: Right-hand inserts with FG and F1 chipbreakers should be used with right-hand holders

[Cutting condition example]
4140 Carbon Steel Diameter : ϕ.472"
260 SFM Depth of Bore : .787" Wet
Holder : S10K-STUPR11D12-OH Insert : TPGH221

Holders ➡V23

DS-ACH Toolholders

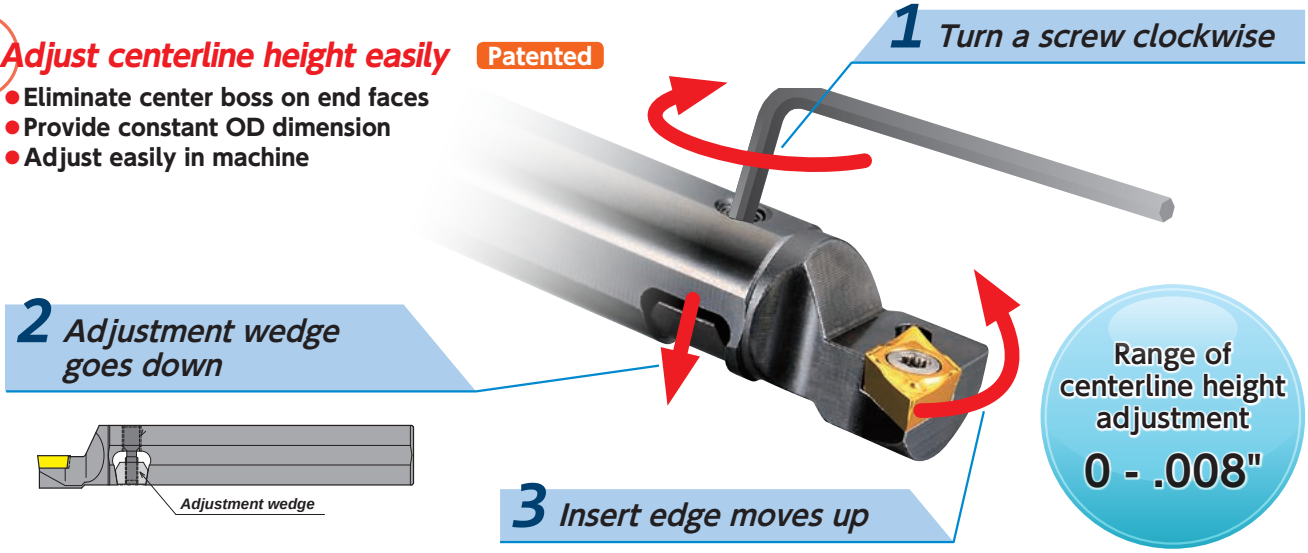
Features

WATCH ON YouTube

- Adjust centerline height simply with a wrench

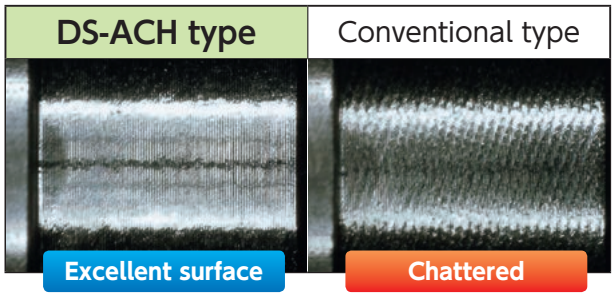
1 Adjust centerline height easily Patented

- Eliminate center boss on end faces
- Provide constant OD dimension
- Adjust easily in machine



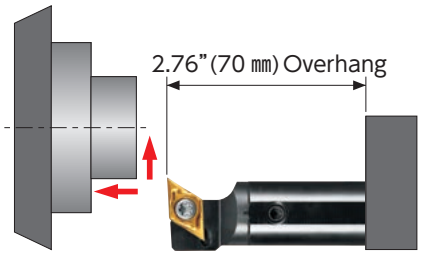
2 Optimized design reduces vibration

Improved chatter resistance.



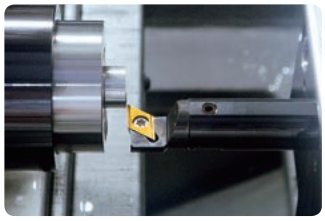
Tested cutting conditions (304 SS)

Work material : 304 SS
Holder : DS-SDUL19-11-ACH
Insert : DCGT32.508MCL TM4
Cutting condition : 250 SFM .002 IPR .079" DOC WET

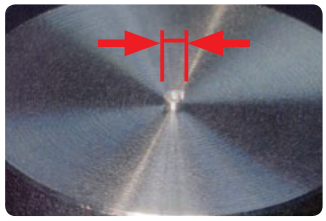


How to use

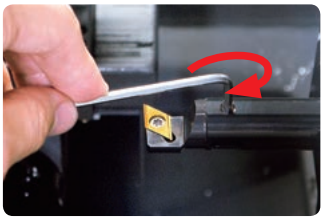
Insert moves in an upward direction only. (Loosen wedge screw before making any adjustment)



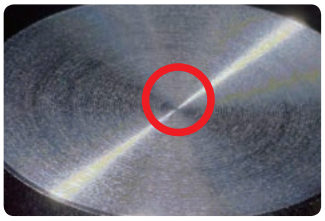
①Install the holder slightly below centerline. Then take a facing test cut.



②Measure the diameter of the centerboss.



③Raise the center height by one half of the diameter of the boss. Adjustment references are available in the tool case.



④Re-machine the end face.

*Adjustment instructions are supplied in the tool case

DS Toolholders

For making the most of vacant drill sleeves

DS / DS-ACH Toolholders



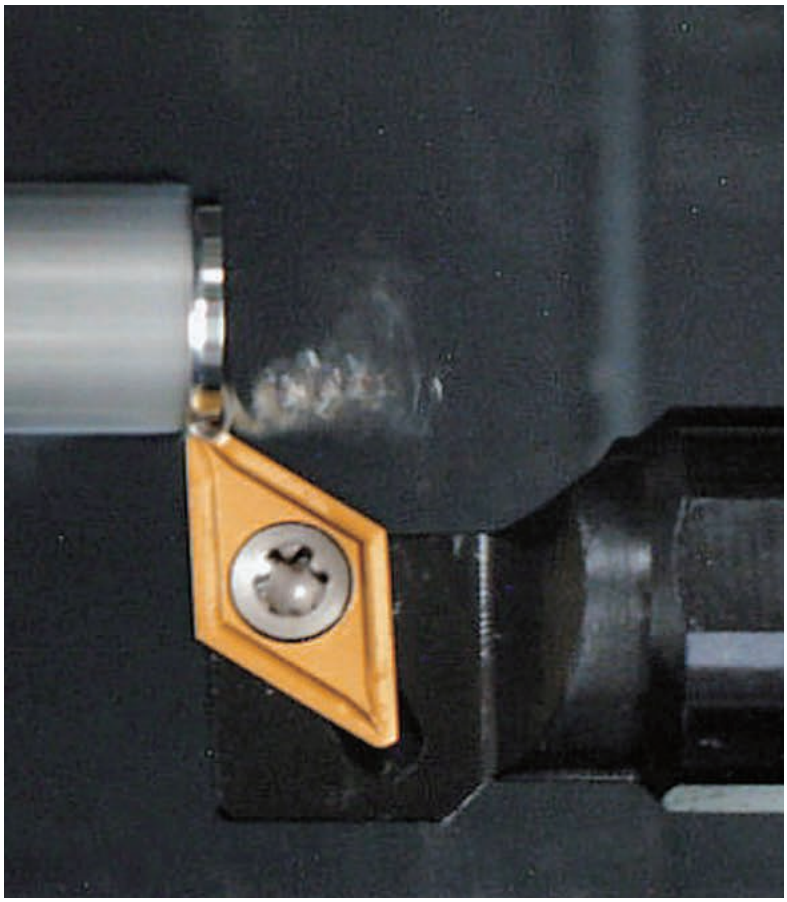
Industry Proven Concept

Are you satisfied with the number of tool positions in your machine?

NTK DS type toolholder is useful when additional tool positions are required

Front turning, Back turning, Grooving, Threading, and Small boring which fit into the machines' vacant drill sleeves

DS Series toolholders can be used with both Swiss or non-Swiss type CNC lathes



Features

- More turning tools without any hassle
- Available for Front turning, Back turning, Grooving, Threading, Micro-boring, and interchangeable tooling
- Available shank size range: from .511"(14㎜) to 1"(25.4㎜)

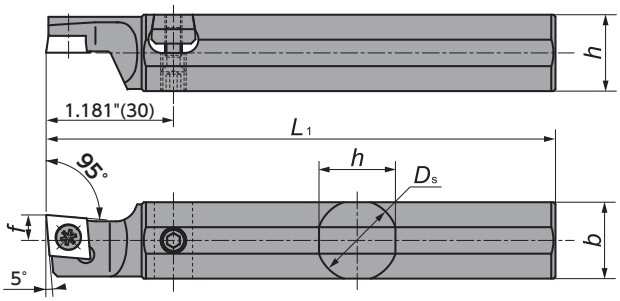
Front Turning

CC.. Series - Toolholders

DS-SCLL-ACH (Adjustable centerline height)

〈Parts〉

Shank	Wedge	Screw for Wedge
ϕ.630" (16)	ACH-W18 (5805601)	WS060415-003 (5795539)
ϕ3/4" (19.05)		
ϕ.787" (20)		WS060419-004 (5799226)
ϕ.866" (22)		
ϕ1" (25.4)	ACH-W24 (5805619)	



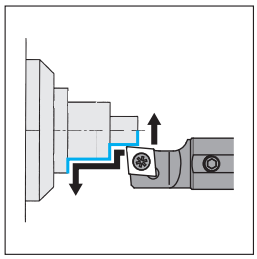


Figure-1

Left-Hand style shown
Takes Right-hand or Neutral insert

DS-SCL

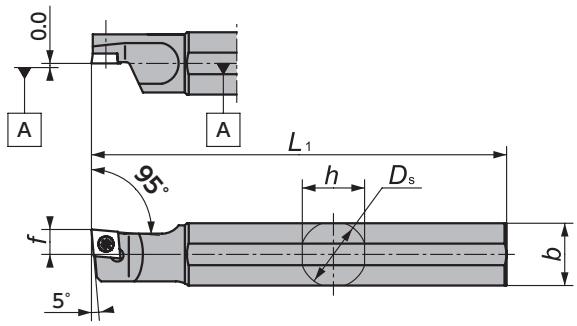


Figure-2

DS-SCL (Coolant through)

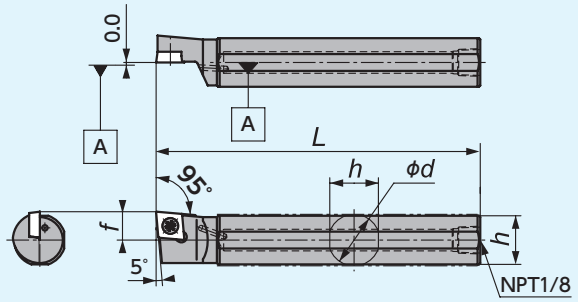


Figure-3

Left-Hand style shown
Takes Right-hand or Neutral insert

DS-SCL (Takes right-hand or neutral insert)

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
CC..21.5..	DS-SCL□14F-06	2		○	.551	14.000	.512	13	.512	13	3.150	80	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□15H-06	2		○	5/8	15.875	.591	15	.591	15	3.937	100	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□16F-06	2		○	.630	16.000	.591	15	.591	15	3.150	80	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□19-06	2		●	3/4	19.050	.709	18	.709	18	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□20X-06	2		○	.787	20.000	.748	19	.748	19	3.740	95	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□20-06	2		●	.787	20.000	.748	19	.748	19	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□22-06	2		○	.866	22.000	.827	21	.827	21	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□25-06MET	2		●	.984	25.000	.945	24	.945	24	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□25-06	2		●	1	25.400	.945	24	.945	24	5.906	150	.236	6.0	LRIS-2.5 × 7	CLR-15S
CC..32.5..	DS-SCL□14F-09	2		○	.551	14.000	.512	13	.512	13	3.150	80	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□15H-09	2		○	5/8	15.875	.591	15	.591	15	3.937	100	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□16F-09	2		○	.630	16.000	.591	15	.591	15	3.150	80	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□19GX-09	2		○	3/4	19.050	.709	18	.709	18	3.346	85	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□19-09	2		●	3/4	19.050	.709	18	.709	18	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□19-09-004	3		●	3/4	19.050	.709	18	.709	18	4.724	120	.413	10.5	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□20X-09	2		○	.787	20.000	.748	19	.748	19	3.740	95	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□20-09	2		●	.787	20.000	.748	19	.748	19	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□22-09	2		●	.866	22.000	.827	21	.827	21	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□22-09-005	3		●	.866	22.000	.827	21	.827	21	4.724	120	.472	12.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□25-09MET	2		○	.984	25.000	.945	24	.945	24	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□25-09	2		●	1	25.400	.945	24	.945	24	5.906	150	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□32-09	2		○	1.260	32.000	1.181	30	1.181	30	5.906	150	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□16F-09-ACH	1		●	.630	16.000	.610	15.5	.610	15.5	3.150	80	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□19-09-ACH	1		●	3/4	19.050	.709	18.0	.709	18.0	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□20-09-ACH	1		●	.787	20.000	.748	19.0	.748	19.0	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□22-09-ACH	1		●	.866	22.000	.827	21.0	.827	21.0	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□25-09MET-ACH	1		●	.984	25.000	.945	24.0	.945	24.0	5.906	150	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□25-09-ACH	1		●	1	25.400	.945	24.0	.945	24.0	5.906	150	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65

Inserts ➡Q12

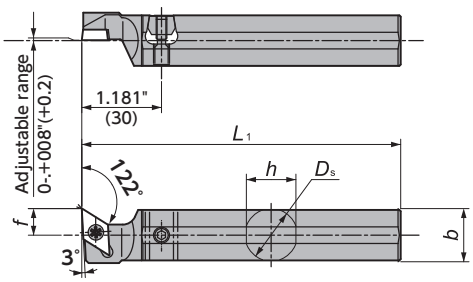
DC.. Series - Toolholders

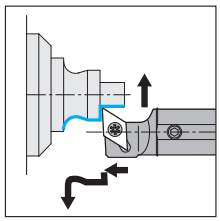
DS-SDU-ACH (Adjustable centerline height)

〈Parts〉

Shank	Wedge	Screw for Wedge
ϕ.630" (16)	ACH-W18 (5805601)	WS060415-003 (5795539)
ϕ3/4" (19.05)		
ϕ.787" (20)		WS060419-004 (5799226)
ϕ.866" (22)		
ϕ1" (25.4)	ACH-W24 (5805619)	

Figure-1

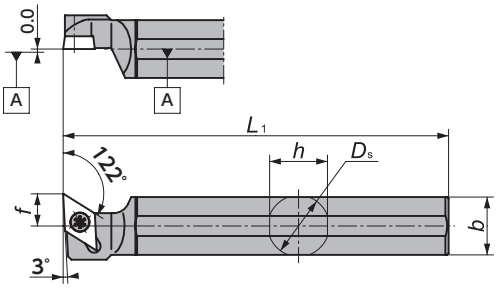


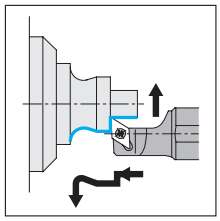


Left-Hand style shown
Takes Right-hand or Neutral insert

DS-SDU

Figure-2





Left-Hand style shown
Takes Right-hand or Neutral insert

DS-SDX / DS-SDX (Coolant through)

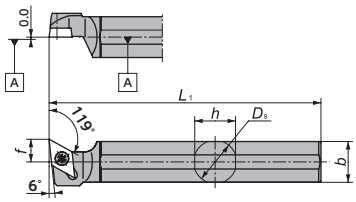


Figure-3

DS-SDXL22-11-006 (Coolant through)

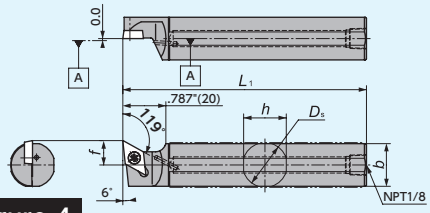
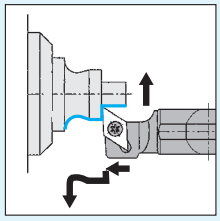


Figure-4



Left-Hand style shown
Takes Right-hand or Neutral insert

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
DC..21.5.. DC..21.5..WP	DS-SDU**R**¼14F-07	2		○	.551	14.000	.512	13.0	.512	13.0	3.150	80	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU**R**¼15H-07	2		○	5/8	15.875	.591	15.0	.591	15.0	3.937	100	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU**R**¼16F-07	2		○	.630	16.000	.591	15.0	.591	15.0	3.150	80	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU**R**¼16X-07	2		○	.630	16.000	.591	15.0	.591	15.0	3.740	95	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU**R**¼19-07	2		○	3/4	19.050	.709	18.0	.709	18.0	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU**R**¼20X-07	2		○	.787	20.000	.748	19.0	.748	19.0	3.740	95	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU**R**¼20-07	2		●	.787	20.000	.748	19.0	.748	19.0	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU**R**¼22-07	2		●	.866	22.000	.827	21.0	.827	21.0	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
DC..32.5.. DC..32.5..WP	DS-SDU**R**¼14F-11	2		○	.551	14.000	.512	13.0	.512	13.0	3.150	80	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼16F-11	2		○	.630	16.000	.591	15.0	.591	15.0	3.150	80	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼19-11	2		●	3/4	19.050	.709	18.0	.709	18.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼19-11SPL	2		○	3/4	19.050	.709	18.0	.709	18.0	6.300	160	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼20X-11	2		○	.787	20.000	.748	19.0	.748	19.0	3.740	95	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼20-11	2		●	.787	20.000	.748	19.0	.748	19.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼22-11	2		●	.866	22.000	.827	21.0	.827	21.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼23-11-007	2		○	.906	23.000	.866	22.0	.866	22.0	2.756	70	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼25-11MET	2		●	.984	25.000	.945	24.0	.945	24.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼25-11	2		●	1	25.400	.945	24.0	.945	24.0	5.906	150	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼25-11SPL	2		○	1	25.400	.945	24.0	.945	24.0	5.906	150	.492	12.5	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼16F-11-ACH	1		●	.630	16.000	.610	15.5	.610	15.5	3.150	80	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼19-11-ACH	1		●	3/4	19.050	.709	18.0	.709	18.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼20-11-ACH	1		●	.787	20.000	.748	19.0	.748	19.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼22-11-ACH	1		●	.866	22.000	.827	21.0	.827	21.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼25-11MET-ACH	1		●	.984	25.000	.945	24.0	.945	24.0	5.906	150	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU**R**¼25-11-ACH	1		●	1	25.400	.945	24.0	.945	24.0	5.906	150	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDX**R**¼22-11-006 💧	4		●	.866	22.000	.827	21.0	.827	21.0	4.724	120	.472	12.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDX**R**¼19-11	3		○	3/4	19.050	.709	18.0	.709	18.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDX**R**¼20X-11	3		○	.787	20.000	.748	19.0	.748	19.0	3.740	95	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDX**R**¼20-11	3		○	.787	20.000	.748	19.0	.748	19.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDX**R**¼25-11MET	3		○	.984	25.000	.945	24.0	.945	24.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDX**R**¼32-11	3		○	1.260	32.000	1.181	30.0	1.181	30.0	5.906	150	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65

Inserts ➡Q20

● : Stock ○ : 1-2 week delivery 💧 : Coolant through

Cutting condition ➡Q4

VC.. Series - Toolholders

DS-SVX

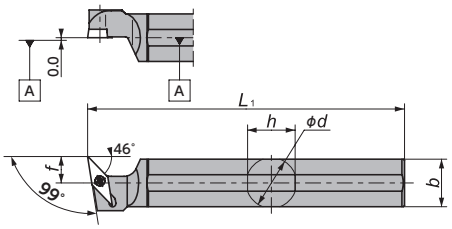


Figure-1

Gage Insert	Item Number	Figure	Stock R	Stock L	ϕ d (Inch)	ϕ d (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L1 (Inch)	L1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
VC..22..	DS-SVXR/L14F-11	1		○	.551	14.000	.512	13	.512	13	3.150	80	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L15H-11	1		○	5/8	15.875	.591	15	.591	15	3.937	100	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L16F-11	1		●	.630	16.000	.591	15	.591	15	3.150	80	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L19-11	1		●	3/4	19.050	.709	18	.709	18	4.724	120	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L19-11SPL	1		○	3/4	19.050	.709	18	.709	18	6.299	160	.433	11.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L20X-11	1		○	.787	20.000	.748	19	.748	19	3.740	95	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L20-11	1		●	.787	20.000	.748	19	.748	19	4.724	120	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L22-11	1		●	.866	22.000	.827	21	.827	21	4.724	120	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L25-11MET	1		○	.984	25.000	.945	24	.945	24	5.906	150	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L25-11	1		●	1	25.400	.945	24	.945	24	5.906	150	.394	10.0	LRIS-2.5 × 7	CLR-15S

Inserts ➡Q29

VP..08 Series - Toolholders

DS-SVXP

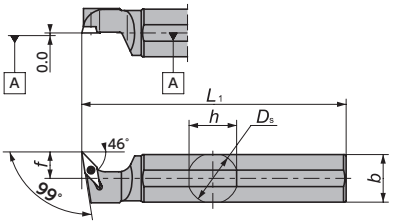
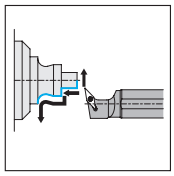
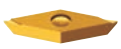


Figure-2



Left-Hand style shown
Takes Right-hand or Neutral insert

Gage Insert	Item Number	Figure	Stock R	Stock L	Ds (Inch)	Ds (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L1 (Inch)	L1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 VP..0802	DS-SVXPR/L19-08	2		○	3/4	19.050	.709	18	.709	18	4.724	120	.394	10	LRIS-2 × 6	CLR-13S
	DS-SVXPR/L20-08	2		○	.787	20.000	.748	19	.748	19	4.724	120	.394	10	LRIS-2 × 6	CLR-13S
	DS-SVXPR/L22-08	2		○	.866	22.000	.827	21	.827	21	4.724	120	.394	10	LRIS-2 × 6	CLR-13S
	DS-SVXPR/L25-08	2		○	1	25.400	.945	24	.945	24	5.906	150	.394	10	LRIS-2 × 6	CLR-13S

Inserts ➡Q30

VP..22 Series - Toolholders

DS-SVVP-ACH (Adjustable centerline height)

〈Parts〉

Shank	Wedge	Screw for Wedge
ϕ.630" (16)	ACH-W18 (5805601)	WS060415-003 (5795539)
ϕ3/4" (19.05)		
ϕ.787" (20)		WS060419-004 (5799226)
ϕ.866" (22)		
ϕ1" (25.4)	ACH-W24 (5805619)	

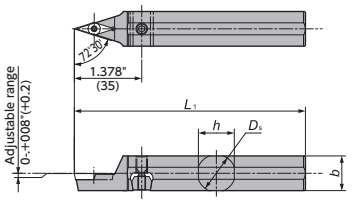


Figure-3

DS-SVVP

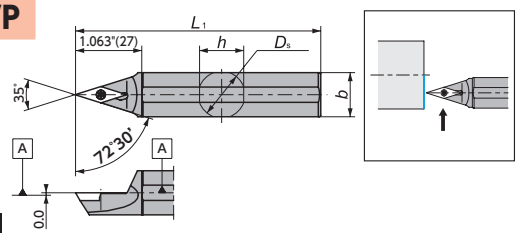


Figure-4

Gage Insert	Item Number	Figure	Stock Neutral	Ds (Inch)	Ds (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L1 (Inch)	L1 (mm)	Clamp Screw	Wrench
 VP..22	DS-SVVPN19-11	4	○	3/4	19.050	.709	18.0	.709	18	4.724	120	LRIS-2.5 × 7	CLR-15S
	DS-SVVPN22-11	4	○	.866	22.000	.827	21.0	.827	21	4.724	120	LRIS-2.5 × 7	CLR-15S
	DS-SVVPN16-11-ACH	3	●	.630	16.000	.610	15.5	.610	15	4.724	120	LRIS-2.5 × 7	CLR-15S
	DS-SVVPN19-11-ACH	3	●	3/4	19.050	.709	18.0	.709	18	4.724	120	LRIS-2.5 × 7	CLR-15S
	DS-SVVPN20-11-ACH	3	●	.787	20.000	.748	19.0	.748	19	4.724	120	LRIS-2.5 × 7	CLR-15S
	DS-SVVPN22-11-ACH	3	●	.866	22.000	.827	21.0	.827	21	4.724	120	LRIS-2.5 × 7	CLR-15S
	DS-SVVPN25-11-ACH	3	●	1	25.400	.945	24.0	.945	24	5.906	150	LRIS-2.5 × 7	CLR-15S

Inserts ➡Q31

TN.. Series - Toolholders

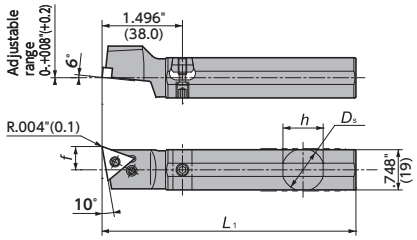
DS-PTX-ACH (Adjustable centerline height)

〈Parts〉

Shank	Wedge	Screw for Wedge
ϕ.630" (16)	ACH-W18 (5805601)	WS060415-003 (5795539)
ϕ3/4" (19.05)		
ϕ.787" (20)		WS060419-004 (5799226)
ϕ.866" (22)		
ϕ1" (25.4)	ACH-W24 (5805619)	

Figure-1

Shim	Clamp Pin	Spring
—	LCL33N	—



Left-Hand style shown
Takes Right-hand or Neutral insert.

DS-PTX

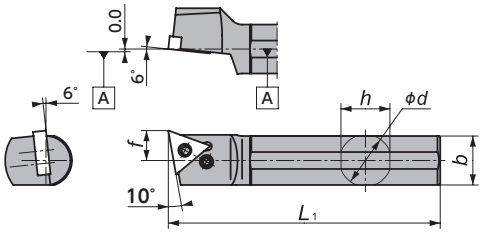
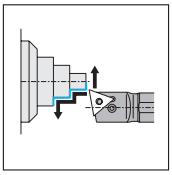


Figure-2

Shim	Clamp Pin	Spring
—	LCL33N	—



Left-Hand style shown
Takes Right-hand or Neutral insert.



■DS-PTX / DS-PTX-ACH

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
TN..33..	DS-PTXR/L19-33	2		○	3/4	19.050	.709	18.0	.709	18	4.724	120	.433	11.0	LCS33	LW-2
	DS-PTXR/L20-33	2		○	.787	20.000	.748	19.0	.748	19	4.724	120	.433	11.0	LCS33	LW-2
	DS-PTXR/L22-33	2		○	.866	22.000	.827	21.0	.827	21	4.724	120	.472	12.0	LCS33	LW-2
	DS-PTXR/L25M-33	2		○	1	25.400	.945	24.0	.945	24	5.906	150	.512	13.0	LCS33	LW-2
TN..33..	DS-PTXR/L16-33-ACH	1		●	.630	16.000	.610	15.5	.591	15	4.724	120	.433	11.0	LCS33	LW-2
	DS-PTXR/L19-33-ACH	1		●	3/4	19.050	.709	18.0	.709	18	4.724	120	.433	11.0	LCS33	LW-2
	DS-PTXR/L20-33-ACH	1		●	.787	20.000	.748	19.0	.748	19	4.724	120	.433	11.0	LCS33	LW-2
	DS-PTXR/L22-33-ACH	1		●	.866	22.000	.827	21.0	.827	21	4.724	120	.472	12.0	LCS33	LW-2
	DS-PTXR/L25-33MET-ACH	1		●	1	25.000	.945	24.0	.945	24	5.906	150	.512	13.0	LCS33	LW-2
	DS-PTXR/L25-33-ACH	1		●	1	25.400	.945	24.0	.945	24	5.906	150	.512	13.0	LCS33	LW-2

Inserts ➡Q36
Cutting condition ➡Q4

■ Back Turning

TBP.. Series - Toolholders

DS-TBP

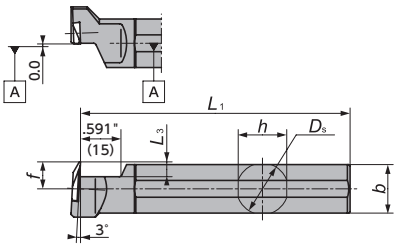
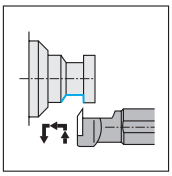


Figure-1



Left-Hand style shown
Takes Right-hand Insert

■DS-TBP (Takes right-hand inserts)

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_3 (Inch)	L_3 (mm)	Clamp Screw	Wrench
 TBP..FR..	DS-TBPR/L19	1		○	3/4	19.050	.709	18	.709	18	4.724	120	.433	11.0	.217	5.5	LRIS-4 × 10	LLR-25S-20×65
	DS-TBPR/L20	1		○	.787	20.000	.748	19	.748	19	4.724	120	.433	11.0	.217	5.5	LRIS-4 × 10	LLR-25S-20×65
	DS-TBPR/L25	1		○	1.00	25.400	.945	24	.945	24	5.906	150	.512	13.0	.217	5.5	LRIS-4 × 10	LLR-25S-20×65

Inserts ➡R9
Cutting condition ➡R3

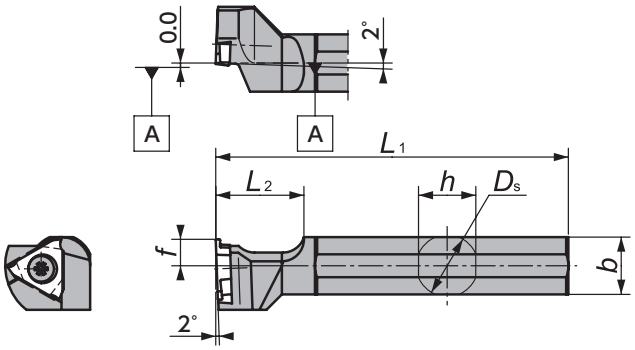
● : Stock ○ : 1-2 week delivery

NTK Unique Tooling

Grooving / Side Turning / Back Turning

GTT.. Series - Toolholders

DS-GTT



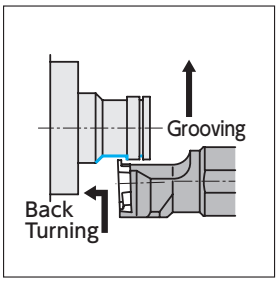


Figure-1

Left-Hand style shown
Takes Right-hand Insert

DS-GTT

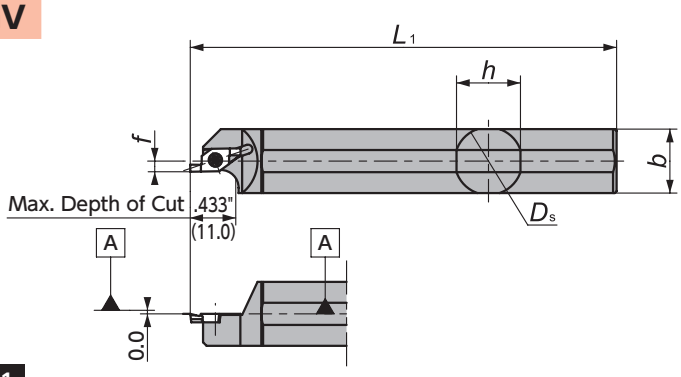
Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Clamp Screw	Wrench
 TBMH32.. GTM.32 TMG32	DS-GTT⅛14F	1		○	.551	14.000	.512	13	.512	13	3.150	80	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT⅛15H	1		○	.518	15.875	.591	15	.591	15	3.937	100	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT⅛16X	1		●	.630	16.000	.591	15	.591	15	3.740	95	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT⅛19	1		●	3/4	19.050	.709	18	.709	18	4.724	120	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT⅛20	1		●	.787	20.000	.748	19	.748	19	4.724	120	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT⅛22	1		●	.866	22.000	.827	21	.827	21	4.724	120	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT⅛25-MET	1		○	.984	25.000	.945	24	.945	24	4.724	120	.394	10	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT⅛25	1		●	1	25.400	.945	24	.945	24	5.906	150	.394	10	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT⅛32	1		○	1.260	32.000	1.181	30	1.181	30	5.906	150	.394	10	.787	20	LR-S-4 × 9	RLR-20S

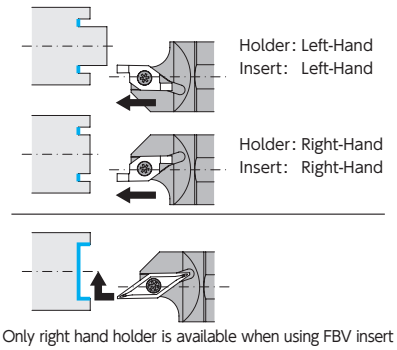
Inserts GTM..32 ➡T12
Inserts TBMH32.. ➡R19

Face Grooving

FGV.. Series - Toolholders

DS-FGV





Only right hand holder is available when using FBV insert

Figure-1

Right-Hand with FGV style shown

DS-FGV

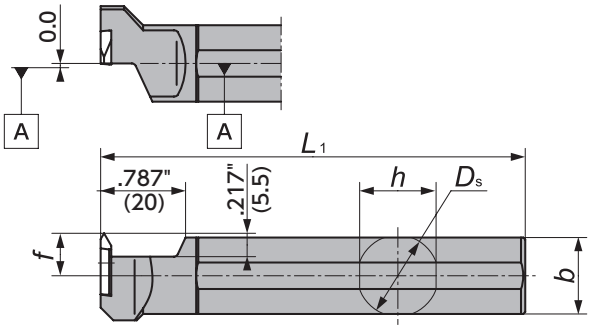
Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 FGV FBV	DS-FGV⅛16-012	1	○	○	.630	16.000	.591	15	.591	15	3.150	80	.118	3.0	LRIS-2.5 × 7	CLR-15S
	DS-FGV⅛19	1	○	○	3/4	19.050	.709	18	.709	18	4.724	120	.118	3.0	LRIS-2.5 × 7	CLR-15S
	DS-FGV⅛20	1	○	○	.787	20.000	.748	19	.748	19	4.724	120	.118	3.0	LRIS-2.5 × 7	CLR-15S
	DS-FGV⅛22	1	○	○	.866	22.000	.827	21	.827	21	4.724	120	.118	3.0	LRIS-2.5 × 7	CLR-15S
	DS-FGV⅛22M	1	○	○	.866	22.000	.827	21	.827	21	5.906	150	.118	3.0	LRIS-2.5 × 7	CLR-15S
	DS-FGV⅛25-MET	1	○	○	.984	25.000	.945	24	.945	24	5.906	150	.118	3.0	LRIS-2.5 × 7	CLR-15S
	DS-FGV⅛25	1	○	○	1	25.400	.965	24.5	.965	24.5	4.724	120	.118	3.0	LRIS-2.5 × 7	CLR-15S

Inserts ➡T23
Cutting condition ➡T4・T21

Threading

TTP.. Series - Toolholders

DS-TTP



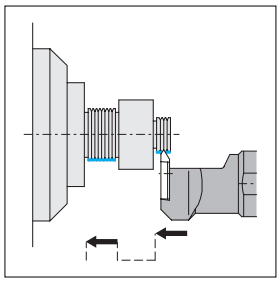


Figure-1

Left-Hand style shown
Takes Right-Hand insert.

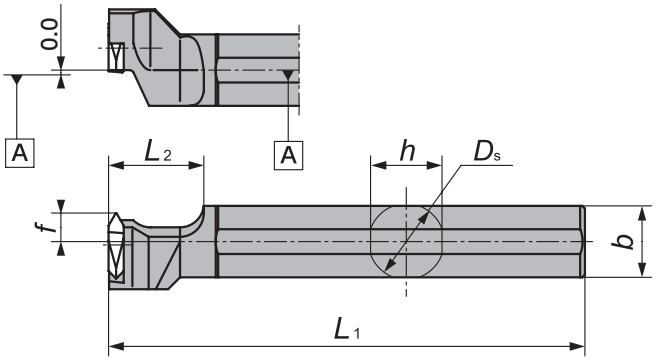
DS-TTP

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 TTP..	DS-TTP¾16F	1		○	.630	16.000	.591	15	.591	15	3.150	80	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-TTP¾19	1		●	3/4	19.050	.709	18	.709	18	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-TTP¾20	1		●	.787	20.000	.748	19	.748	19	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-TTP¾22	1		●	.866	22.000	.827	21	.827	21	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-TTP¾25-MET	1		○	.984	25.000	.945	24	.945	24	5.906	150	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-TTP¾25	1		●	1	25.400	.945	24	.945	24	5.906	150	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65

Inserts ➡U11

STTN.. Series - Toolholders

DS-STT



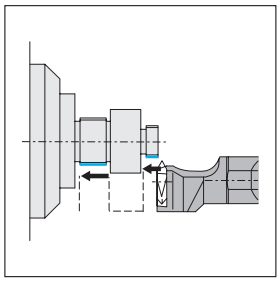


Figure-2

Left-Hand style shown
Takes Right-Hand insert.

DS-STT¾

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 TTMH3260	DS-STT¾14F	2		○	.551	14.000	.512	13	.512	13	3.150	80	.236	6.0	LR-S-4 × 9	RLR-20S
	DS-STT¾15H	2		○	5/8	15.875	591	15	591	15	3.937	100	.236	6.0	LR-S-4 × 9	RLR-20S
	DS-STT¾16X*	2		○	.630	16.000	591	15	591	15	3.346	85	.236	6.0	LR-S-4 × 9	RLR-20S

Inserts ➡U14

● : Stock ○ : 1-2 week delivery

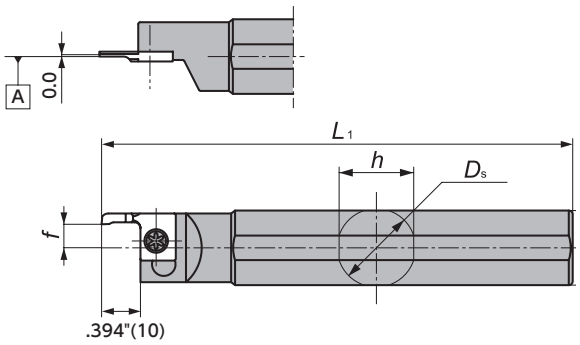
Cutting condition ➡U4

NTK Unique Tooling

ID Boring

LBM.. Series - Toolholders

DS-LBMB



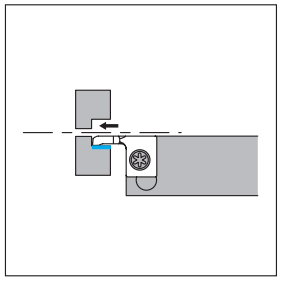


Figure-1

Left-Hand style shown

LBMAR / CH-TTPL

Gage Insert	Item Number	Figure	Stock	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 Long type	**DS-LBMBL14F**	1	○	.551	14.000	.512	13	.512	13	–	–	3.150	80 ＊1	＊3	＊3	LRIS-4 × 10PW	CLR-15S
	DS-LBMBL15H	1	○	5/8	15.875	.591	15	.591	15	–	–	3.937	100 ＊1	＊3	＊3	LRIS-4 × 10PW	CLR-15S
	DS-LBMBL16X	1	●	.630	16.000	.591	15	.591	15	–	–	3.740	95 ＊1	＊2	＊2	LRIS-4 × 10PW	CLR-15S
	DS-LBMBL19	1	●	3/4	19.050	.709	18	.709	18	–	–	4.724	120 ＊1	＊2	＊2	LRIS-4 × 10PW	CLR-15S
	DS-LBMBL20	1	●	.787	20.000	.748	19	.748	19	–	–	4.724	120 ＊1	＊2	＊2	LRIS-4 × 10PW	CLR-15S
	DS-LBMBL22	1	●	.866	22.000	.827	21	.827	21	–	–	4.724	120 ＊1	＊2	＊2	LRIS-4 × 10PW	CLR-15S
	DS-LBMBL25-MET	1	○	.984	25.000	.945	24	.945	24	–	–	4.724	120 ＊1	＊2	＊2	LRIS-4 × 10PW	CLR-15S
	DS-LBMBL25	1	○	1	25.400	.945	24	.945	24	–	–	5.906	150 ＊1	＊2	＊2	LRIS-4 × 10PW	CLR-15S

Inserts ➡V7
Cutting condition ➡V4

Interchangeable Tooling

CSV.. Series - Toolholders

DS-CSVL

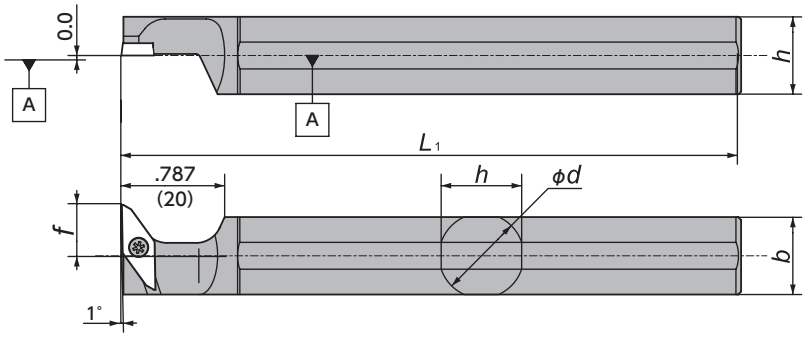


Figure-1

Left-Hand style shown
Takes right-hand inserts

DS-CSVL (Takes right-hand insert)

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 CSV..11FR..	**DS-CSVL15**	1		●	5/8	15.875	.591	15	.591	15	4.724	120	.394	10	LRIS-2.5 × 7	CLR-15S

Inserts ➡O29

DS Sleeve

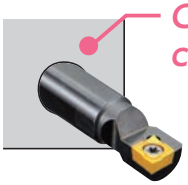
Features

WATCH ON YouTube

- Prevents coolant and chips from damaging live tool stations
- Accepts DS Series holders to perform various back working
- Designed exclusively for 22mm(.886") and 34mm(1.339") round shank stations
- Compatible with 16mm(.630") / 22mm(.886") round shank DS Series holders



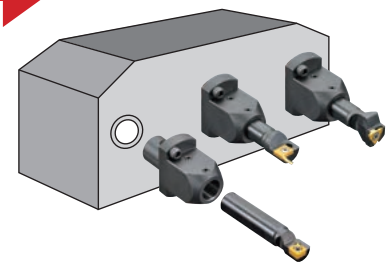
First Recommendation for Turning



Coolant and chips sneak in.

When DS holders are used directly in live tool stations, coolant and chips sneak in from the flat of holders to damage the live stations

How it works

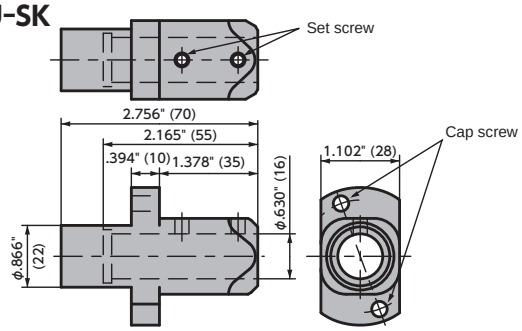


Stop coolant and chips from damaging live tool stations.

By using the DS Sleeve, you can use the DS Series holders without any worry about damaging live stations

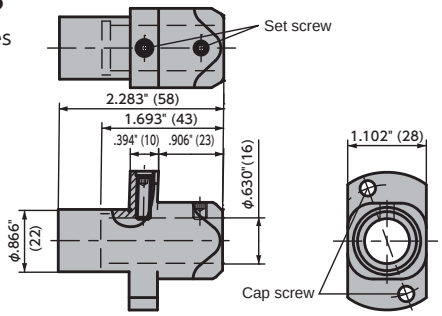
For Back 4-spindle unit

■SS-DSU-SK



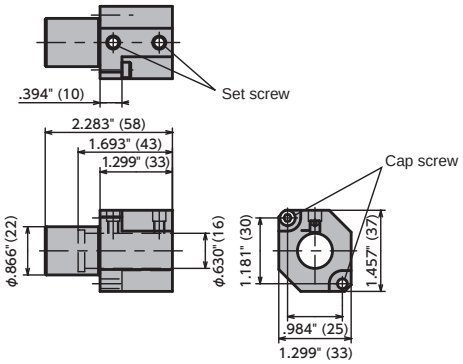
■SS-DSU-L23

For DS-ACH series

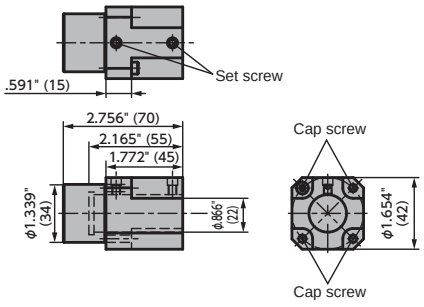


For Back 8-spindle unit

■SS-DSU-B8L23



■SS-DSU-B8D34



Item number	Stock	Spare parts				Coment
		Cap screw	Wrench	Set screw	Wrench	
SS-DSU-SK	●	CS0515	LW-4	SS0506	LW-2.5	
SS-DSU-L23	●	CS0515	LW-4	SS0506 SS0515	LW-2.5	For DS-ACH Series
SS-DSU-B8L23	●	CS0415	LW-3	SS0506	LW-2.5	Can take DS-ACH Series
SS-DSU-B8D34	●	CS0506	LW-3	SS0506	LW-2.5	

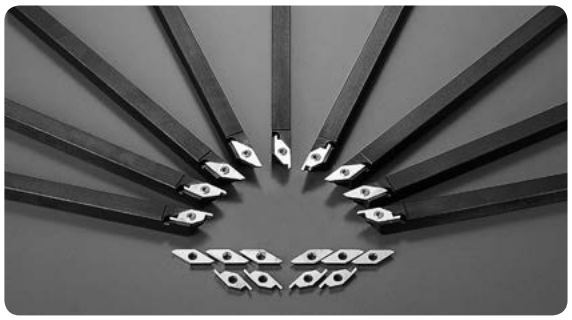
● : Stock ○ : 1-2 week delivery

Machine Information ➔Y27

CSV Series

Tooling for small diameter parts

Best tool for up to .200" diameter material



Features

- Very up- sharp edge with mirror finish provides superior precise machining
- Interchangeable tool :
  All the inserts can use the same toolholder
- Specially designed edge shape for small diameter machining

CSV toolholder



CSVF



Front turning

CSVT



Threading

CSVB



Back turning

CSVC

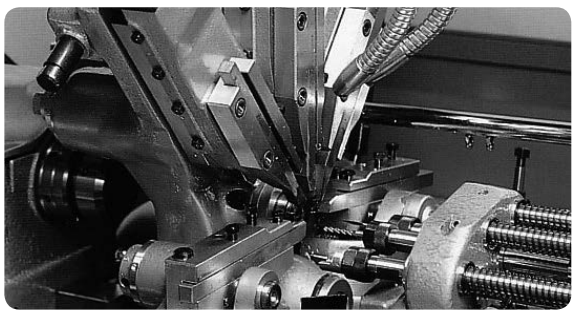


Cut-off

CSVG



Grooving



- Holders for Cam-style machine also available

CSV Series - Toolholders

Best for up to .200" diameter material

CSV-NC

For Gang-style machine

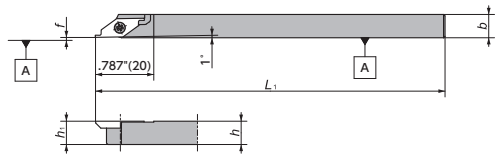


Figure-1

Right-Hand style shown

CSV

For Cam-style machine

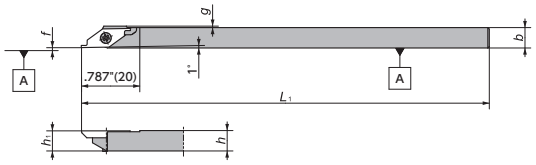


Figure-2

Right-Hand style shown

DS-CSVL

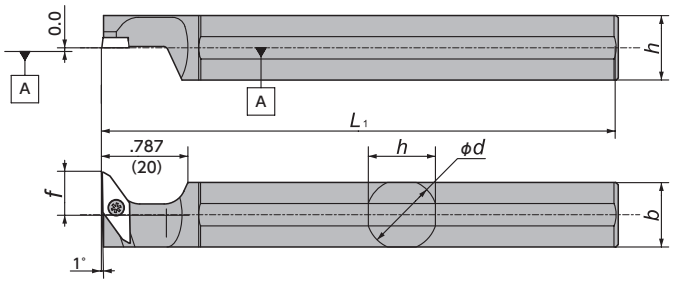


Figure-3

Left-Hand style shown
Takes right-hand inserts

CSV Series - Toolholders

■CSVR/L / CSVR/L-NC

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	g (Inch)	g (mm)	Clamp Screw	Wrench
 CSV..11..	CSVR/L06-IN-NC	1	●	●	3/8		3/8		3/8		4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L08-IN-NC	1	●	●	1/2		1/2		1/2		4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L08NC	1	○	○	.315	8	.315	8	.315	8	4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L08NC-F	1	○		.315	8	.315	8	.315	8	4.724	120	0–.004	0.0–0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L10GXNC	1	○		.394	10	.394	10	.394	10	3.346	85	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L10NC	1	○	○	.394	10	.394	10	.394	10	4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L12NC	1	●	●	.472	12	.472	12	.472	12	4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L07GX	2	○		.275	7	.275	7	.275	7	3.346	85	.004	0.1	.020	0.5	LRIS-2.5 × 7	CLR-15S
	CSVR/L07	2	○	●	.275	7	.275	7	.275	7	5.512	140	.004	0.1	.020	0.5	LRIS-2.5 × 7	CLR-15S
	CSVR/L08GX	2	○		.315	8	.315	8	.315	8	3.346	85	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L08	2	●	●	.315	8	.315	8	.315	8	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L095	2	○		.374	9.5	.374	9.5	.374	9.5	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L10	2	●	○	.394	10	.394	10	.394	10	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L12GX	2	○		.472	12	.472	12	.472	12	3.346	85	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L12	2	●		.472	12	.472	12	.472	12	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S

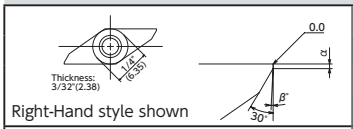
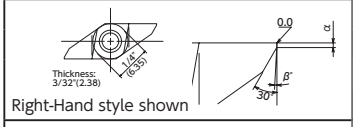
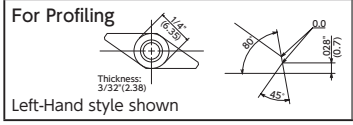
■DS-CSVL (Takes right-hand insert)

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 CSV..11FR..	DS-CSVL15	3		●	5/8	15.875	.591	15	.591	15	4.724	120	.394	10	LRIS-2.5 × 7	CLR-15S

CSV Series - Inserts

Front turning

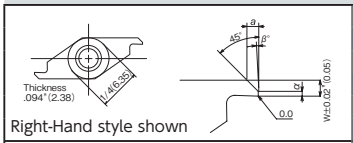
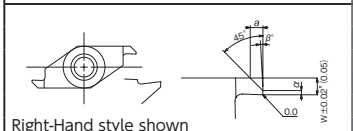
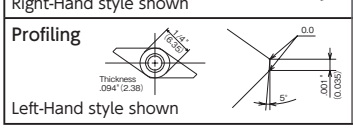
■CSVF Mirror finish

Shape	Item Number	Chip-breaker	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	Edge Geometry (α × β°) (Inch)	Edge Geometry (α × β°) (mm)	Coated Carbide DT4 R	DT4 L	VM1 R	VM1 L	ZM3 R	ZM3 L
 Right-Hand style shown	CSVF11F[R/L]V (M)	No	–	–	.012 × 5°	0.3 × 5°			○	○		
	CSVF11F[R/L]V-A (M)	No	–	–	.012 × 2°	0.3 × 2°			○			
	CSVF11F[R/L]V-M (M)	No	–	–	.006 × 2°	0.15 × 2°	●		●	●	○	
	CSVF11F[R/L]V-C (M)	No	–	–	.006 × 5°	0.15 × 5°			○			
 Right-Hand style shown	CSVF11F[R/L]VB (M)	Yes	.118	3	.012 × 5°	0.3 × 5°			●	○		
	CSVF11F[R/L]VB-A (M)	Yes	.118	3	.012 × 2°	0.3 × 2°			○			
	CSVF11F[R/L]VB-M (M)	Yes	.118	3	.006 × 2°	0.15 × 2°	●		●	●	○	
	CSVF11F[R/L]VB-C (M)	Yes	.118	3	.006 × 5°	0.15 × 5°			○			
For Profiling  Left-Hand style shown	CSVF11F[R/L]VX (M)	No	–	–						○		

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

Back turning

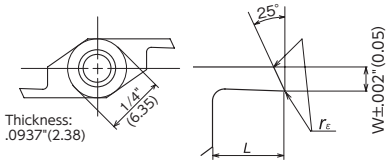
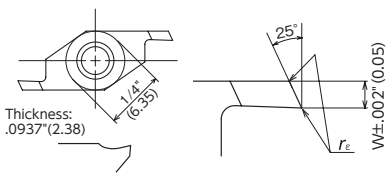
■CSVB Mirror finish

Shape	Item Number	Chip-breaker	Length of Blade (Inch)	Length of Blade (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	W (Inch)	W (mm)	Edge Geometry (α × β°) (Inch)	Edge Geometry (α × β°) (mm)	Coated Carbide DT4 R	DT4 L	VM1 R	VM1 L	ZM3 R	ZM3 L
 Right-Hand style shown	CSVB11F[R/L]V (M)	No	.028	0.7	.079	2.0	.039	1.00	.012 × 5°	0.3 × 5°			○	○		
	CSVB11F[R/L]V-A (M)	No	.028	0.7	.079	2.0	.039	1.00	.012 × 2°	0.3 × 2°			○			
	CSVB11F[R/L]V-M (M)	No	.028	0.7	.079	2.0	.039	1.00	.006 × 2°	0.15 × 2°	●		●	○	○	
	CSVB11F[R/L]V-C (M)	No	.028	0.7	.079	2.0	.039	1.00	.006 × 5°	0.15 × 5°			○			
	CSVB11F[R/L]V12 (M)	No	.031	0.8	.079	2.0	.047	1.20	.012 × 5°	0.3 × 5°			○			
	CSVB11F[R/L]V14 (M)	No	.039	1.0	.079	2.0	.055	1.40	.012 × 5°	0.3 × 5°			○			
 Right-Hand style shown	CSVB11F[R/L]VB (M)	Yes	.028	0.7	.079	2.0	.039	1.00	.012 × 5°	0.3 × 5°			○			
	CSVB11F[R/L]VB-A (M)	Yes	.028	0.7	.079	2.0	.039	1.00	.012 × 2°	0.3 × 2°			○			
	CSVB11F[R/L]VB-M (M)	Yes	.028	0.7	.079	2.0	.039	1.00	.006 × 2°	0.15 × 2°	●		●	○	○	
	CSVB11F[R/L]VB-C (M)	Yes	.028	0.7	.079	2.0	.039	1.00	.006 × 5°	0.15 × 5°			○			
	CSVB11F[R/L]VB12 (M)	Yes	.031	0.8	.079	2.0	.047	1.20	.012 × 2°	0.3 × 5°			○			
	CSVB11F[R/L]VB14 (M)	Yes	.039	1.0	.079	2.0	.055	1.40	.012 × 2°	0.3 × 5°			○			
Profiling  Left-Hand style shown	CSVB11F[R/L]VX (M)	No	–	–	–	–	–	–						○		

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

Cut-off

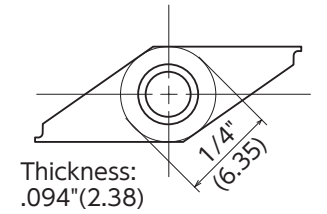
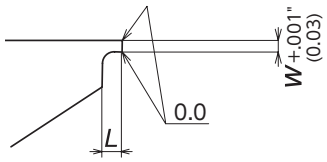
■CSVC Mirror finish

Shape	Item Number	Chip-breaker	Max. Cut-off Dia. φD (Inch)	Max. Cut-off Dia. φD (mm)	W (Inch)	W (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	VM1 R	VM1 L
 Right-Hand style shown	CSVC11F[R/L]V06 (M)	No	.118	3.0	.024	0.6	.079	2.0	0	0.0	○	
	CSVC11F[R/L]V07 (M)	No	.157	4.0	.028	0.7	.098	2.5	0	0.0	●	●
	CSVC11F[R/L]V08 (M)	No	.157	4.0	.031	0.8	.098	2.5	0	0.0	○	○
	CSVC11F[R/L]V09 (M)	No	.157	4.0	.035	0.9	.098	2.5	0	0.0	○	
	CSVC11F[R/L]V10 (M)	No	.197	5.0	.039	1.0	.118	3.0	0	0.0	●	●
	CSVC11F[R/L]V13 (M)	No	.197	5.0	.051	1.3	.118	3.0	0	0.0	●	○
	CSVC11F[R/L]V15 (M)	No	.197	5.0	.059	1.5	.118	3.0	0	0.0	○	○
 Right-Hand style shown	CSVC11F[R/L]VB06 (M)	Yes	.118	3.0	.024	0.6	.079	2.0	0	0.0	○	
	CSVC11F[R/L]VB07 (M)	Yes	.157	4.0	.028	0.7	.098	2.5	0	0.0	●	
	CSVC11F[R/L]VB08 (M)	Yes	.157	4.0	.031	0.8	.098	2.5	0	0.0	○	
	CSVC11F[R/L]VB09 (M)	Yes	.157	4.0	.035	0.9	.098	2.5	0	0.0	○	
	CSVC11F[R/L]VB10 (M)	Yes	.197	5.0	.039	1.0	.118	3.0	0	0.0	●	
	CSVC11F[R/L]VB13 (M)	Yes	.197	5.0	.051	1.3	.118	3.0	0	0.0	○	
	CSVC11F[R/L]VB15 (M)	Yes	.197	5.0	.059	1.5	.118	3.0	0	0.0	○	

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

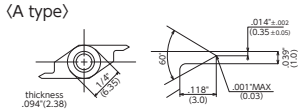
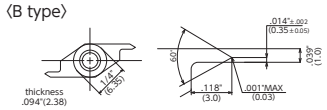
Grooving

■CSVG Mirror finish

Shape	Item Number	Chip-breaker	Groove Width W (Inch)	Groove Width W (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide VM1 R	Coated Carbide VM1 L
 Thickness: .094"(2.38)	CSVG11F☒V025 Ⓜ	No	.010	0.25	.006	0.15	.020	0.50	0.0	0.0	●	
	CSVG11F☒V030 Ⓜ	No	.012	0.30	.006	0.15	.020	0.50	0.0	0.0	●	
	CSVG11F☒V035 Ⓜ	No	.014	0.35	.006	0.15	.020	0.50	0.0	0.0	●	
	CSVG11F☒V040 Ⓜ	No	.016	0.40	.006	0.15	.020	0.50	0.0	0.0	●	
	CSVG11F☒V045 Ⓜ	No	.018	0.45	.018	0.45	.039	1.00	0.0	0.0	●	
	CSVG11F☒V050 Ⓜ	No	.020	0.50	.018	0.45	.039	1.00	0.0	0.0	●	
	CSVG11F☒V055 Ⓜ	No	.022	0.55	.018	0.45	.039	1.00	0.0	0.0	●	
	CSVG11F☒V060 Ⓜ	No	.024	0.60	.018	0.45	.039	1.00	0.0	0.0	●	
	CSVG11F☒V065 Ⓜ	No	.026	0.65	.018	0.45	.039	1.00	0.0	0.0	●	
	CSVG11F☒V070 Ⓜ	No	.028	0.70	.018	0.45	.039	1.00	0.0	0.0	●	
	CSVG11F☒V075 Ⓜ	No	.030	0.75	.050	1.40	.079	2.00	0.0	0.0	●	○
	CSVG11F☒V080 Ⓜ	No	.031	0.80	.050	1.40	.079	2.00	0.0	0.0	●	
	CSVG11F☒V085 Ⓜ	No	.033	0.85	.050	1.40	.079	2.00	0.0	0.0	●	
	CSVG11F☒V090 Ⓜ	No	.035	0.90	.050	1.40	.079	2.00	0.0	0.0	●	
	CSVG11F☒V095 Ⓜ	No	.037	0.95	.050	1.40	.079	2.00	0.0	0.0	●	○
	CSVG11F☒V100 Ⓜ	No	.039	1.00	.050	1.40	.079	2.00	0.0	0.0	●	
	CSVG11F☒V110 Ⓜ	No	.043	1.10	.102	2.60	.102	2.60	0.0	0.0	●	
	CSVG11F☒V120 Ⓜ	No	.047	1.20	.102	2.60	.102	2.60	0.0	0.0	●	○
	CSVG11F☒V130 Ⓜ	No	.051	1.30	.102	2.60	.102	2.60	0.0	0.0	●	
	CSVG11F☒V140 Ⓜ	No	.055	1.40	.102	2.60	.102	2.60	0.0	0.0	●	
Right-Hand style shown	CSVG11F☒V150 Ⓜ	No	.059	1.50	.102	2.60	.102	2.60	0.0	0.0	●	

Threading

■CSVT Mirror finish

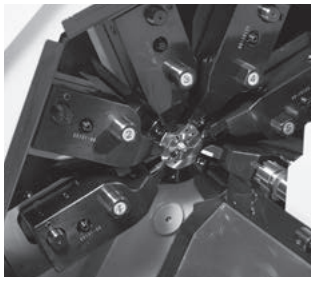
Shape	Item Number	Chip-breaker	r_ε (TPI)	r_ε (mm)	Pitch (TPI)	Pitch (mm)	Coated Carbide VM1 R	Coated Carbide VM1 L
〈A type〉  Right-Hand style shown	CSVT11F☒P60-035A Ⓜ	No	-R.001	R0.03 MAX	127 - 51	0.2 - 0.5	●	●
〈B type〉  Right-Hand style shown	CSVT11F☒P60-035B Ⓜ	No	-R.001	R0.03 MAX	127 - 51	0.2 - 0.5	●	●

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

● : Stock ○ : 1-2 week delivery Ⓜ : Mirror finish

CTPS Series

Tooling for Radial-style tool station



Features

- Best fit for Radial-style tool station.
- Interchangeable tools

SVACR1010X11N
Designed for Radial-style tool station

Front turning

CTPS Series



Back turning | Cut-off | Grooving | Threading

CTPS Series - Toolholders

CTPS

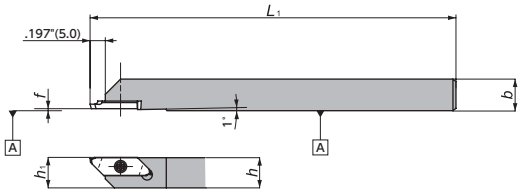


Figure-1

Right-Hand style shown

CTPSR-SUB Max. Cut-off Dia. .157" (4.0mm)

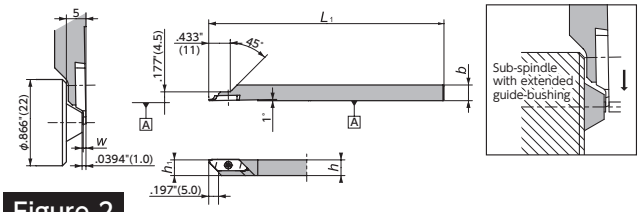


Figure-2

Right-Hand style shown

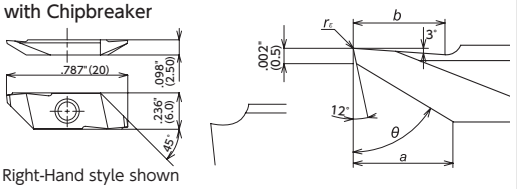
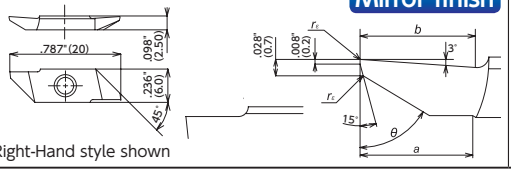
■CTPS / CTPSR

Gage Insert	Item Number	Figure	Stock R	Stock L	Max. Cut-off Dia. ϕD (Inch)	Max. Cut-off Dia. ϕD (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 CTPS..	**CTPSR06-IN**	1	●		**.394**	**10.0**	3/8		3/8		3/8		4.724	120	0	0.0	LR1S-2.5 × 7	CLR-15S
	CTPSR08-IN	1	●		**.394**	**10.0**	1/2		1/2		1/2		4.724	120	0	0.0	LR1S-2.5 × 7	CLR-15S
	CTPSR10	1	○		**.394**	**10.0**	.394	10	.394	10	.394	10	4.724	120	0	0.0	LR1S-2.5 × 7	CLR-15S
	CTPSR12	1	○		**.394**	**10.0**	.472	12	.472	12	.472	12	4.724	120	0	0.0	LR1S-2.5 × 7	CLR-15S
CTPS-001	**CTPSR08-SUB04**	2	○		**.157**	**4.0**	.315	8	.315	8	.315	8	4.724	120		—	LR1S-2.5 × 5	CLR-15S

CTPS Series - Inserts

Back turning

■TBPS

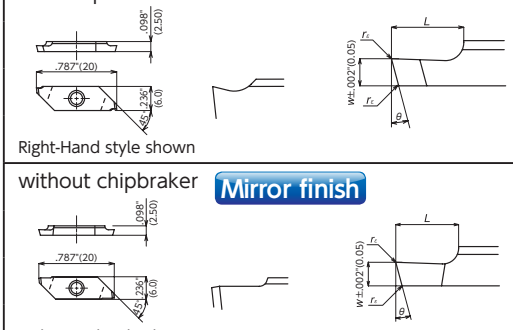
Shape	Item Number	Chip-breaker	Length of Blade a (Inch)	Length of Blade a (mm)	Max Depth of Cut b (Inch)	Max Depth of Cut b (mm)	θ	$r_ε$ (Inch)	$r_ε$ (mm)	Coated Carbide VM1	Coated Carbide ZM3
with Chipbreaker  Right-Hand style shown	**TBPS60FR00**	Yes	.122	3.1	.138	3.5	60°	0.0	0.0	○	○
	TBPS60FR10	Yes	.122	3.1	.138	3.5	60°	.004	0.1	○	○
without Chipbreaker Mirror finish  Right-Hand style shown	**TBPS60FRV** Ⓜ	No	.189	4.8	.189	4.8	60°	0.0	0.0	○	○

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

Cut-off

■CTPS

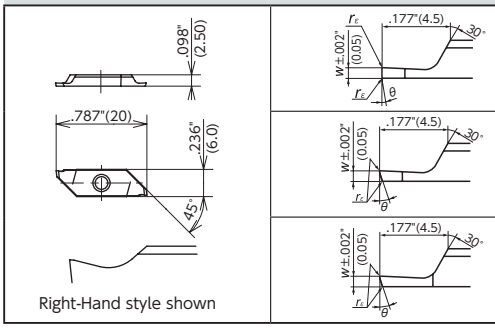
Shape	Item Number	Chip-breaker	Max. Cut-off Dia. ϕD (Inch)	(mm)	w (Inch)	(mm)	L (Inch)	(mm)	θ	r_ε (Inch)	(mm)	Coated Carbide VM1 R	VM1 L	ZM3 R	ZM3 L
with chipbraker	CTPS12FR	Yes	.157	4.0	.047	1.2	.138	3.5	16°	.002	0.05	○		●	
	CTPS15FR	Yes	.197	5.0	.059	1.5	.157	4.0	16°	.002	0.05	○		●	
	CTPS18FR	Yes	.335	8.5	.071	1.8	.217	5.5	16°	.002	0.05	○		●	
	CTPS20FR	Yes	.394	10.0	.079	2.0	.236	6.0	16°	.002	0.05	○		○	
without chipbraker Mirror finish	CTPS12FRV Ⓜ	No	.157	4.0	.047	1.2	.138	3.5	20°	0	0.0	●		○	
	CTPS15FRV Ⓜ	No	.197	5.0	.059	1.5	.157	4.0	20°	0	0.0	○		○	
	CTPS18FRV Ⓜ	No	.335	8.5	.071	1.8	.217	5.5	20°	0	0.0	○		○	
	CTPS20FRV Ⓜ	No	.394	10.0	.079	2.0	.236	6.0	20°	0	0.0	○		○	



Right-Hand style shown

■CTPS-001

Shape	Item Number	Chip-breaker	Max. Cut-off Dia. ϕD (Inch)	(mm)	w (Inch)	(mm)	θ	r_ε (Inch)	(mm)	Coated Carbide ZM3 R	ZM3 L
	CTPS07FRN-001	Yes	.157	4.0	.028	0.7	0°	.002	0.05	○	
	CTPS07FR-001	Yes	.157	4.0	.028	0.7	16°	.002	0.05	○	
	CTPS07FRV-001 Ⓜ	No	.157	4.0	.028	0.7	20°	0	0.0	○	

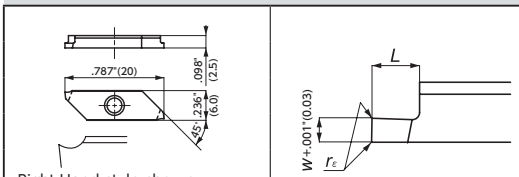


Right-Hand style shown

Grooving

■GTPS

Shape	Item Number	Groove Width w (Inch)	(mm)	Max Depth of Cut (Inch)	(mm)	r_ε (Inch)	(mm)	L (Inch)	(mm)	Coated Carbide VM1	ZM3
	GTPS075FR	.030	0.75	.039	1.0	0.0	0.0	.059	1.5	○	○
	GTPS095FR	.037	0.95	.059	1.5	0.0	0.0	.079	2.0	○	○
	GTPS100FR	.039	1.00	.059	1.5	0.0	0.0	.079	2.0	○	○
	GTPS120FR	.047	1.20	.098	2.5	0.0	0.0	.118	3.0	○	○
	GTPS150FR	.059	1.50	.098	2.5	0.0	0.0	.118	3.0	○	○
	GTPS200FR	.079	2.00	.098	2.5	0.0	0.0	.118	3.0	○	○

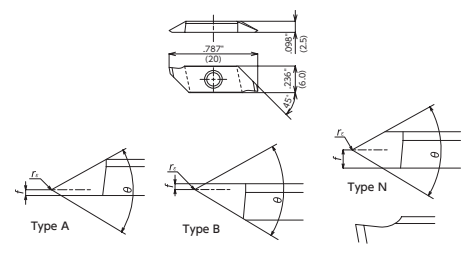


Right-Hand style shown
☆θ shows the angle when the holder is set.

Threading

■TTPS - Threading

Shape	Item Number	Type	θ	f (Inch)	(mm)	r_ε (Inch)	(mm)	Pitch (TPI)	(mm)	Coated Carbide VM1	ZM3
	TTPS60FR4A	A	60°	.016	0.4	.002 MAX Flat	(0.05) MAX Flat	127 - 34	0.2 - 0.75	○	○
	TTPS60FR4B	B	60°	.016	0.4	.002 MAX Flat	(0.05) MAX Flat	127 - 34	0.2 - 0.75	○	○
	TTPS60FR8A	A	60°	.031	0.8	R.002	(0.05)	63 - 21	0.4 - 1.25	○	○
	TTPS60FR8B	B	60°	.031	0.8	R.002	(0.05)	63 - 21	0.4 - 1.25	○	○
	TTPS60FR-N	N	60°	.049	1.25	R.004	(0.1)	25 - 17	1.0 - 1.5	○	○

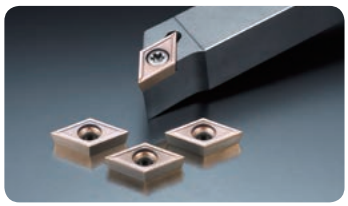


Right-Hand style shown

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

WP Series

Wiper insert with ISO style



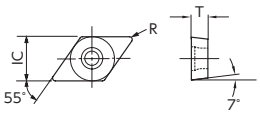
Features

- Wiper shape provides superior surface finish
- Higher feed rate brings shorter cycle time and good chip control
- AM3 chipbreaker is now available with DCGT style

WATCH ON YouTube

(inch)	IC	T
DC..21.5	1/4	3/32
DC..32.5	3/8	5/32

DCGT-WP(55°) 〈TFD style〉 ＊Can be used in SDJC and SDUC toolholders



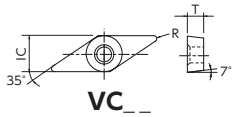
			Cermet					Carbide						
						PVD Coated		PVD Coated						
Steel	P		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Stainless Steel	M		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Cast Iron	K		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Non-Ferrous Material	N		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Heat Resistant Alloy	S		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Hardened Material	H		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
NEW wiper insert	DCGT 32.502 AM3-WP	TFD 11FR05AM3	3/8	.002							●					
	DCGT 32.506 AM3-WP	TFD 11FR15AM3	3/8	.006							●					
wiper insert	DCGT 21.502 R/L S-WP	TFD 07FR/L05	1/4	.002						R				Ⓡ	ⓇⓁ	
	DCGT 21.506 R/L S-WP	TFD 07FR/L15	1/4	.006						R					ⓇⓁ	
	DCGT 32.502 R/L S-WP	TFD 11FR/L05	3/8	.002						R				Ⓡ	Ⓡ	
	DCGT 32.506 R/L S-WP	TFD 11FR/L15	3/8	.006						R					Ⓡ	
wiper insert	DCGT 21.502 R/L U-WP	TFD 07FR/L05U	1/4	.002						Ⓡ				Ⓡ	Ⓡ	
	DCGT 21.506 R/L U-WP	TFD 07FR/L15U	1/4	.006						Ⓡ					Ⓡ	
	DCGT 32.502 R/L U1-WP	TFD 11FR/L05U1	3/8	.002						Ⓡ				Ⓡ	Ⓡ	
wiper insert	DCGT 32.506 R/L U1-WP	TFD 11FR/L15U1	3/8	.006						Ⓡ					Ⓡ	
wiper insert	DCGW 21.502RH-WP Ⓜ	TFD 07FR05H	1/4	.002												○
	DCGW 32.502RH-WP Ⓜ	TFD 11FR05H	3/8	.006												○

VCGT-WP(35°) 〈TFV style〉 ＊Can be used in SVAC toolholders

(inch)	IC	T
VC..22	1/4	1/8



VC_ _

			Cermet					Carbide						
						PVD Coated		PVD Coated						
Steel	P		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Stainless Steel	M		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Cast Iron	K		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Non-Ferrous Material	N		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Heat Resistant Alloy	S		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Hardened Material	H		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1

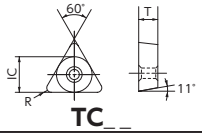
● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
wiper insert	VCGT 2202 R/L S-WP	TFV 11FR/L05SX	1/4	.002										R	Ⓡ	
	VCGT 2204 R/L S-WP	TFV 11FR/L10SX	1/4	.004										R	Ⓡ	
wiper insert	VCGT 2202 R/L U-WP	TFV 11FR/L05U	1/4	.002										Ⓡ	Ⓡ	
	VCGT 2204 R/L U-WP	TFV 11FR/L10U	1/4	.004										Ⓡ	Ⓡ	

TCGT-WP(60°) 〈TFT style〉 ＊Can be used in STAC toolholders

(inch)	IC	T
TC..21	1/4	3/32

(inch)	IC	T
TC..73	7/32	3/32



TC_ _

			Cermet					Carbide						
						PVD Coated		PVD Coated						
Steel	P		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Stainless Steel	M		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Cast Iron	K		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Non-Ferrous Material	N		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Heat Resistant Alloy	S		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
Hardened Material	H		XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	XT3	C7X	XN4	Q15	C7Z	QM3	DT4	DM4	TM4	VM1	ZM3	KM1
wiper insert	TCGT 7302 R/L S-WP	TFT 09FR/L05	.002	0.05											Ⓡ	
	TCGT 7306 R/L S-WP	TFT 09FR/L15	.006	0.15											Ⓡ	
	TCGT 21.502 R/L S-WP	TFT 11FR/L05	.002	0.05											Ⓡ	
	TCGT 21.506 R/L S-WP	TFT 11FR/L15	.006	0.15											Ⓡ	
wiper insert	TCGT 7302 R/L U-WP	TFT 09FR/L05U	.002	0.05											Ⓡ	
	TCGT 7306 R/L U-WP	TFT 09FR/L15U	.006	0.15											Ⓡ	
	TCGT 21.502 R/L U1-WP	TFT 11FR/L05U1	.002	0.05											Ⓡ	
wiper insert	TCGT 21.506 R/L U1-WP	TFT 11FR/L15U1	.006	0.15											Ⓡ	

UL Chipbreaker

6 corner insert for Swiss machines

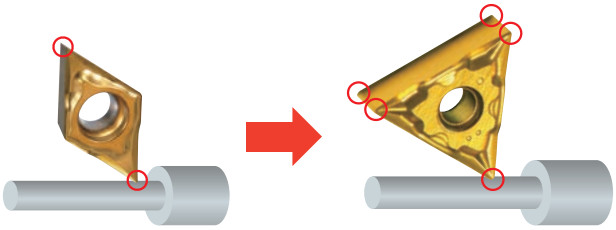


Features

WATCH ON YouTube

- First negative style insert designed for Swiss machines
- Less tool pressure and good chip control

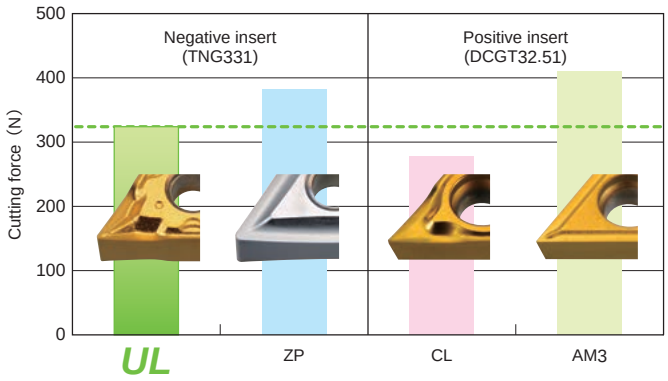
Reduce Cost in Swiss Machining



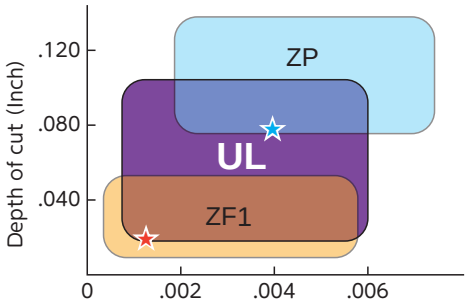
Positive insert with sharp cutting edge is required for Swiss machining.

With UL chipbreaker, negative insert provides sharp cutting edge AND more corners.

Cuts Like Positive Inserts



Covers a Wide Range of Cutting Conditions with Good Chip Control

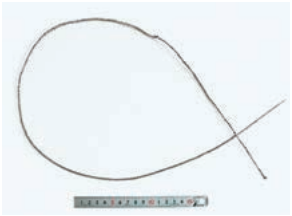


《304 SS》 260 SFM WET

★ .001 IPR .020" DOC



★ .004 IPR .079" DOC



Toolholders for Swiss Machines





Available in ACH (Adjustable centerline height) toolholder

Holders ➡Q34
Inserts ➡Q36

Shifted Toolholders

Toolholders for extended guide-bushing

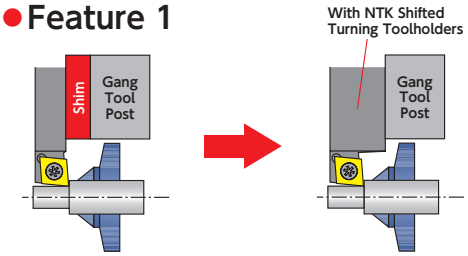


Two Major Features

WATCH ON YouTube

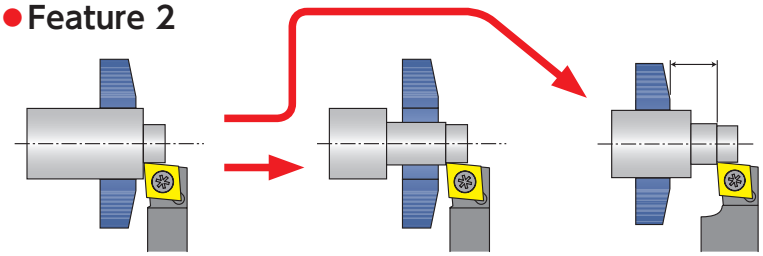
1. Eliminate shims for turning holders when extended guide bushing is used (especially in thread whirling)
2. Performs finish cut without retracting roughed section (bar) from guide bushing

● Feature 1



No shims required during thread whirling operation with an extended guide bushing

● Feature 2



Typical turning

With Conventional Holders: Roughed bar comes out when retracted for finish turn

With Shifted Holders: Finish turn can be done without retracting the roughed bar

➡Q10・Q16・Q26

SATURN DUO

Face turning / grooving tools

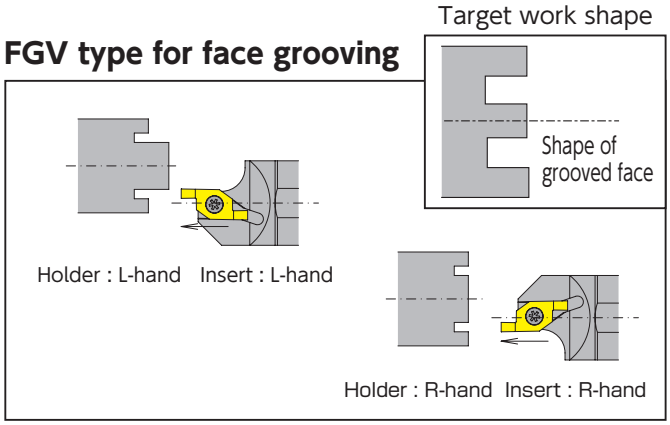


Features

WATCH ON YouTube

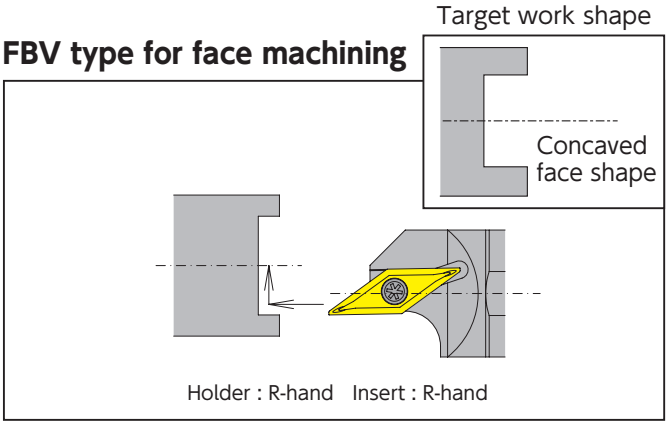
- FGV type for face grooving and FBV type for face machining
- Economical double-corner specification
- Improved tool rigidity by optimizing the overhang and holder shape
- Selection includes : gang-type, front-gang-type and sleeve holder type

FGV type for face grooving



- Grooving possible under a wide range of cutting conditions due to strengthened rigidity of both insert and holder
- Minimum machining diameter of ϕ.236", and groove width of .039"
- Left-hand types available for machining work with a boss

FBV type for face machining



- Further improved face machining efficiency
- Minimum machining diameter of ϕ.315"

➡T20

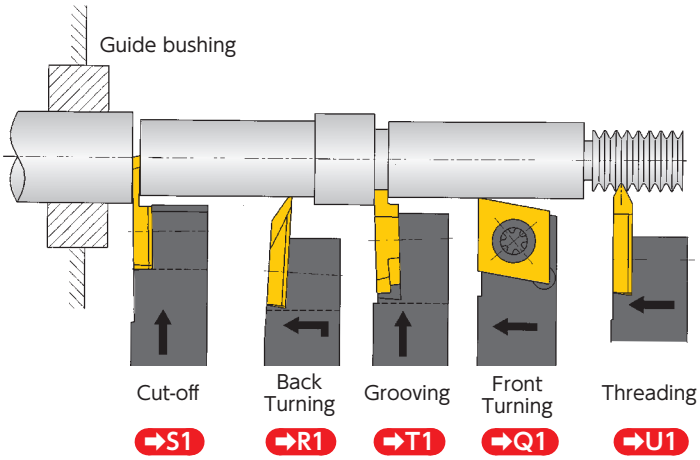
P

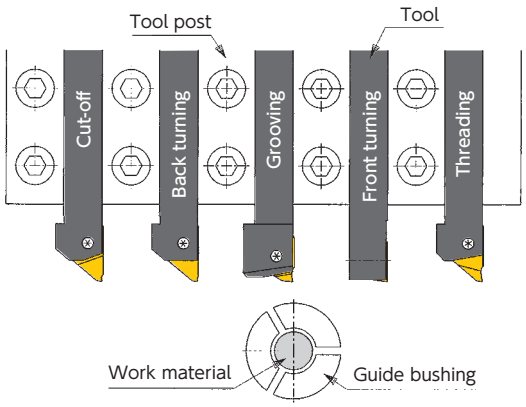


Tooling for Swiss-type Lathes

- Tooling ····· P2
- Grade Introduction ····· P5
- Recommended Insert Grade and Cutting Conditions ····· P17
- Chipbreaker Introduction ····· P21

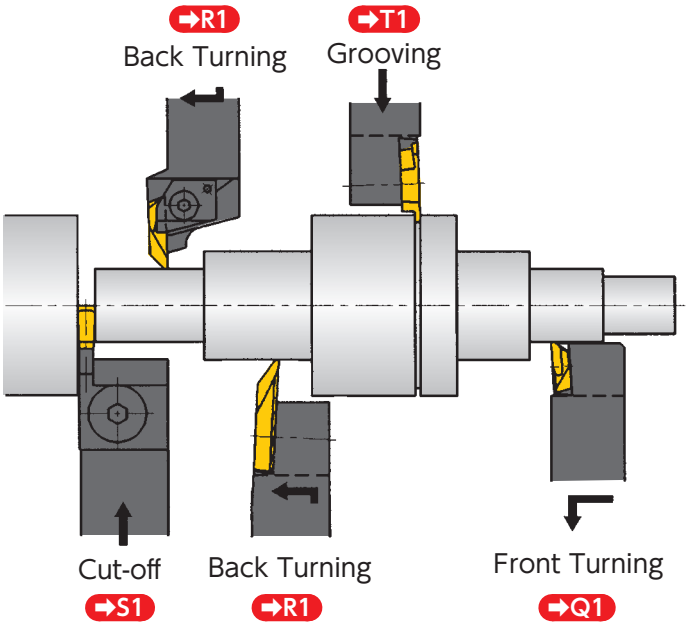
Tooling example for a small CNC automatic lathe (gang type)

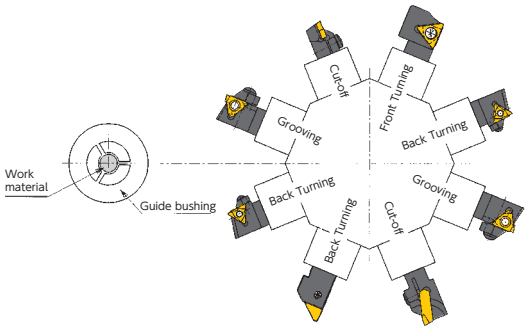




Tooling for gang type tool post

Tooling example for a small CNC automatic lathe (turret type)

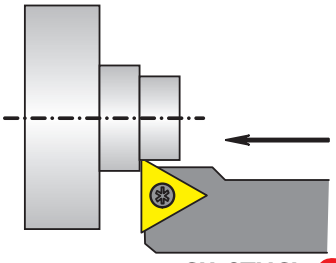




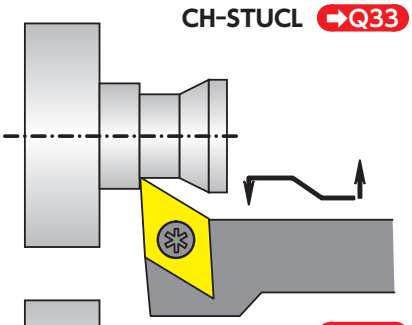
Tooling for turret type tool post

Tooling example for a small CNC automatic lathe (horizontal gang style)

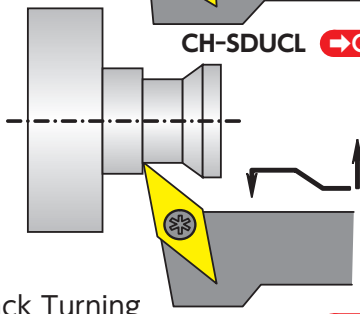
■Front Turning



CH-STUCL ➡Q33

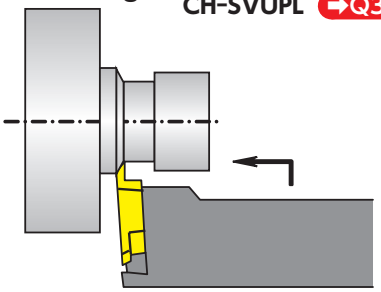


CH-SDUCL ➡Q17



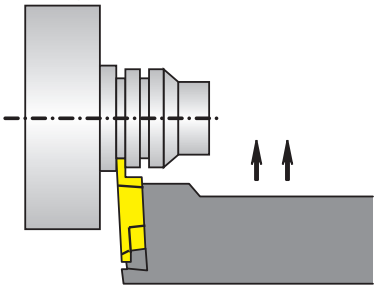
CH-SVUPL ➡Q30

■back Turning



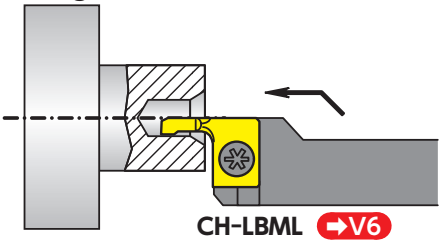
CH-GTTL ➡R18

■Grooving

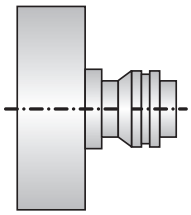


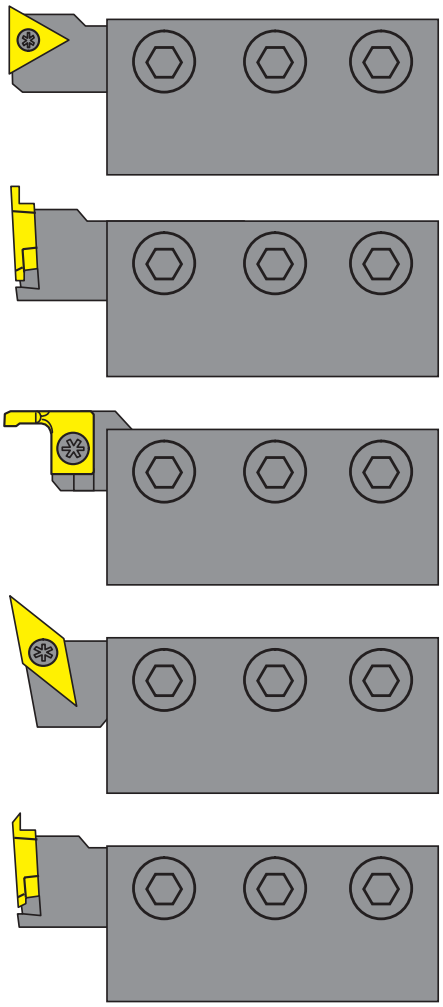
CH-GTTL ➡T10

■ID Boring



CH-LBML ➡V6





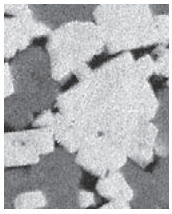
Micro-grain Carbide and PVD/CVD-coated Carbide



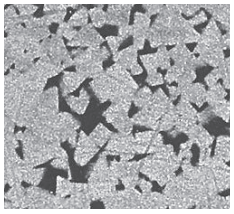
Excellence in precision machining and machining of hard-to-cut materials

These material grades use WC micro-grain carbide, the hard layer of which is granulated to a micro size 1 μm as the substrate. Furthermore, the substrate is coated by the PVD method with TiN, TiCN, and/or TiAlN. The end results are materials that are suitable for precision machining and machining of difficult-to-cut materials. Inserts in these grades are tougher and harder than carbide and come with precision sharp cutting edges. They even have superior toughness and sharper cutting edges than ultra micro-grain carbide grades, with excellent wear resistance and thermal crack resistance.

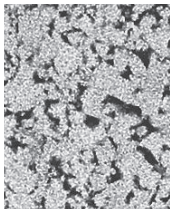
Carbide grade



General carbide structure



Micro-grain carbide structure

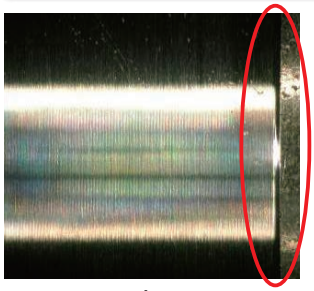


Super micro-grain carbide structure

The result of intensive reseach and development for improving carbide grades

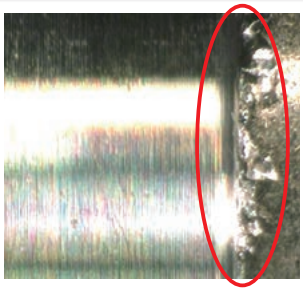
The NTK carbide grade series shows very stable performance under a wide range of conditions. NTK uses micro-grain carbide well balanced between wear resistance and toughness, as substrate.

Features Superior cutting performance



No burrs

Machined with our insert with a sharp cutting edge



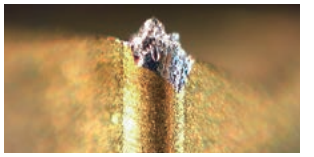
Burrs

Machined with a competitor's product with a honed cutting edge

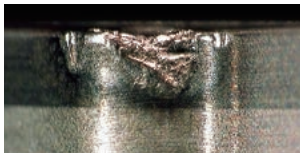
Relentless pursuit of better cutting performance

NTK takes pride in its carbide grade series for their outstanding cutting performance as a result of grinding ultra sharp cutting edges. This outstanding cutting performance benefits in better burr control, lower tool pressure, stabilized dimensions and improved work hardening control.

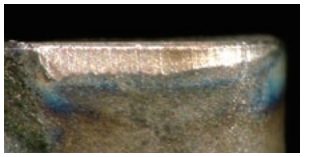
Features Precise analysis on insert wear patterns



Build-up edge



Chipping / fracture



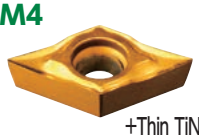
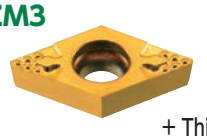
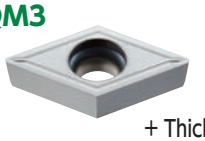
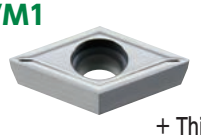
Flank wear



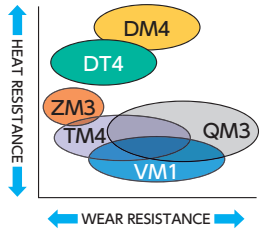
Wear on rake

Continuous research on insert tool life

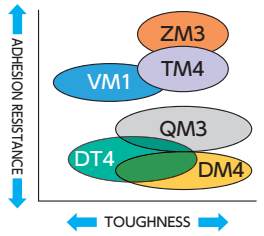
Damage to insert cutting edges varies depending on the machining process and the work material. There are various types of coatings that reduce such damage to prolong the tool life. NTK carbide series offers a variety of coated insert grades which have been developed to improve their resistance characteristics, including wear, fracture, adhesion, oxidation and the like, by utilizing our state-of-the-art technologies.

	Grade / Coating	Applications / Features	Physical properties*						Applications map
			Density g/cm³	Hardness HRA	Bending strength MPa	Young's modulus GPa	Thermal expansion coefficient X10⁻⁶/K	Thermal conductivity W/m・K	
PVD coated	**DM4**  Micro-grain carbide + Thick TiN-TiCN-TiAlN coat	P M S H ●Best oxidation resistance enable high temperature machining	14.4	91.0	3000	580	5.8	63	
	DT4  Micro-grain carbide + Thin TiN-TiCN-TiAlN coat	P M S H ●Excellent oxidation resistance for Swiss-type lathes	14.4	91.0	3000	580	5.8	63	
	TM4  Micro-grain carbide +Thin TiN-TiCN-TiN coat	P M N S ●Best combination of wear resistance and toughness and adhesion resistance for Swiss-type lathes	14.4	91.0	3000	580	5.8	63	
	ZM3  Micro-grain carbide + Thick TiN coat	P M N ●Best Adhesion resistance enables high accuracy machining	14.4	91.0	3000	580	5.8	63	
	QM3  Micro-grain carbide + Thick TiCN coat	P M S H ●Best wear resistance enable stable machining	14.4	91.0	3000	580	5.8	63	
	VM1  Micro-grain carbide + Thin TiCN coat	P M N ●Best edge sharpness and good wear resistance	14.8	92.0	2500	640	5.7	84	
Uncoated	**KM1**  Micro-grain carbide	P M N ●Best for non-ferrous material with mirror finish	14.8	92.0	2500	640	5.7	84	

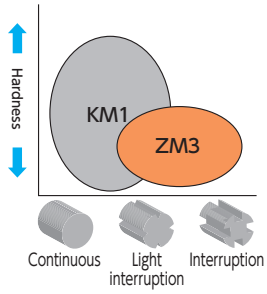
■Correlation chart 1



■Correlation chart 2



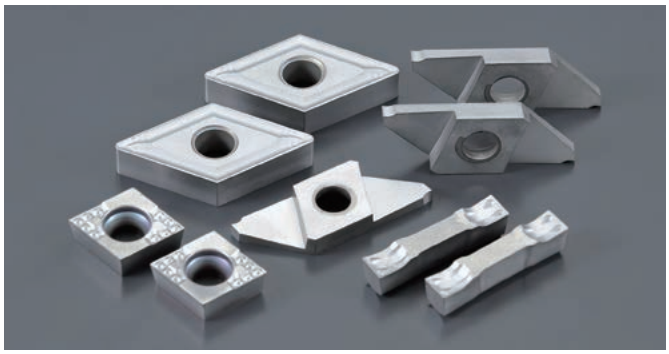
■Aluminum / Brass



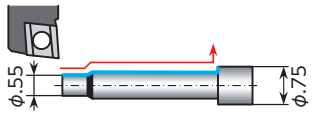
※For products with coating, the values of the base material are indicated.

QM3

Superb wear resistance and fracture resistance in interrupted cutting !



Spindle	
4135	
330 SFM	
.0012 IPR	
.008" DOC	
WET	
NTK : **QM3**	600 pcs
Competitor's PVD-coated carbide	300 pcs



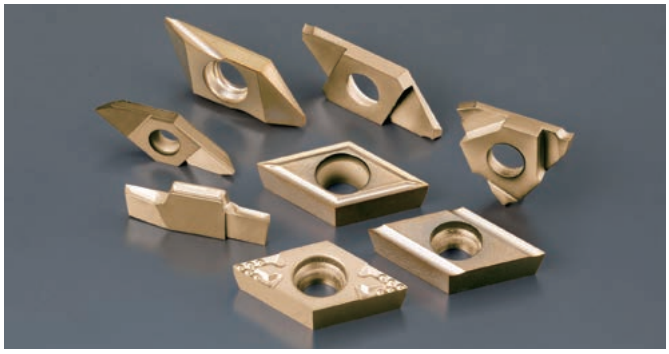
Features

- ***Excellent toughness and wear resistance for wide speed range***
- ***Stable interrupted machining of steel***

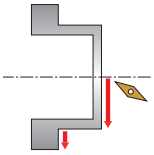
Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels ● Heat resistant alloys	Swiss-type lathes Conventional lathes	Wear resistance

NEW DT4

Excellent heat resistance for Swiss-type lathes !



Pin	
440 CSS	
260 SFM	
.002 IPR	
.039" DOC	
WET	
NTK : **DT4**	1100 pcs
Competitor's PVD-coated carbide	800 pcs



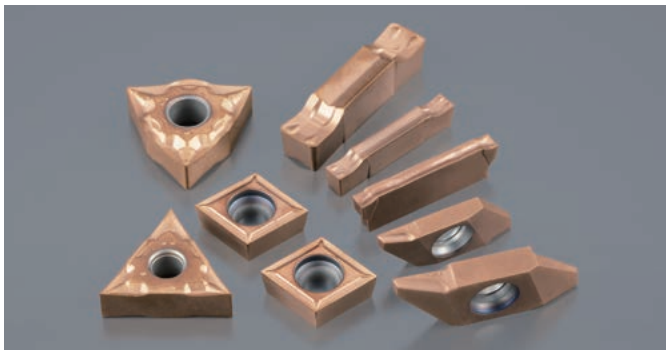
Features

- ***Excellent oxidation resistance for Swiss-type lathes***

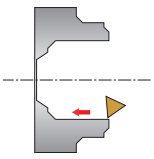
Best for	Optimized for	Excellent in
● Titanium alloys ● Stainless steels ● Alloy steels ● Carbon steels ● Heat resistant alloys	Swiss-type lathes	Oxidation Heat resistant

NEW DM4

Excellent oxidation resistance !



Case	
Inco 718	
130 SFM	
.001 IPR	
.008" DOC	
WET	
NTK : **DM4**	110 pcs
Competitor's PVD-coated carbide	90 pcs



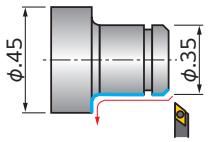
Features

- ***Best oxidation resistance for high temperature machining***
- ***Optimized for Conventional / Swiss-type lathes***

Best for	Optimized for	Excellent in
● Titanium alloys ● Stainless steels ● Alloy steels ● Carbon steels ● Heat resistant alloys	Conventional lathes Swiss-type lathes	Oxidation Heat resistant

TM4 Next generation standard insert grade for Swiss-type lathes !



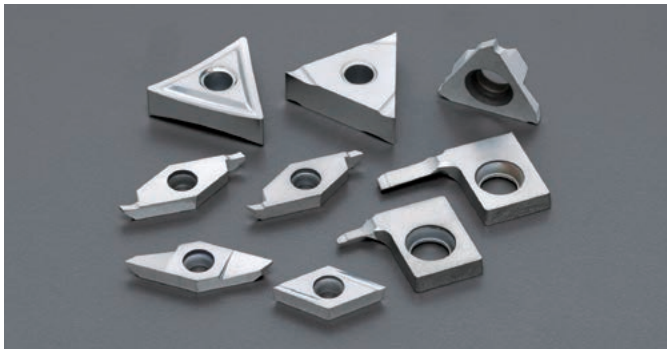
Automobile parts	
304 SS	
260 SFM	
.0008 IPR	
.047" DOC	
WET	
NTK : **TM4**	950 pcs
Competitor's PVD-coated carbide	500 pcs

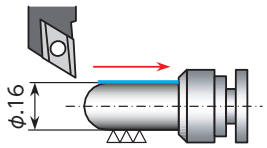
Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels	Swiss-type lathes	Balance

Features

- ***Excellent dimensional stability and tool life thanks to triple titanium layers with excellent adherence to insert substrate***

VM1 High precision machining of small diameter parts !



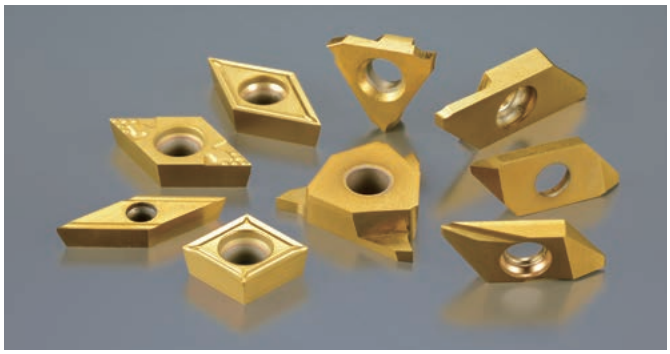
Plug	
12L14	
460 SFM	
.0006 IPR	
.004" DOC	
WET	
NTK : **VM1**	800-1000 pcs
Competitor's PVD-coated carbide	150 pcs

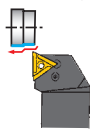
Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels	Swiss-type lathes	Edge sharpness

Features

- ***Especially for machining free cutting steels (SUM materials)***
- ***For high-precision machining with longer tool life even in the high-speed machining range***

ZM3 The best selling grade for automatic lathes !



Case	
1010	
330 SFM	
.0047 IPR	
.012"-.015" DOC	
WET	
NTK : **ZM3**	6000 pcs
Competitor's PVD-coated carbide	150 pcs

Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels ● Non-ferrous materials	Swiss-type lathes Conventional lathes	Adhesion resistance

Features

- ***Stabilizes machining dimensions thanks to the coating being firmly adhered to the substrate***
- ***A wide range of cutting tools in various sizes available for automatic lathes***

KM1

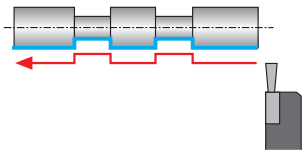
Good for non-ferrous materials like PEEK, Brass, Aluminum and Copper



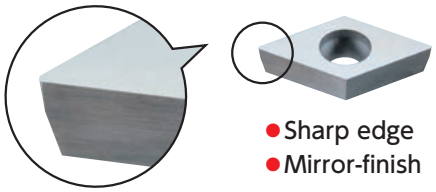
Features

- ***Very sharp cutting edges with uncoated Micro-grain carbide***
- ***Excellent adhesion resistance because of mirror-finish***
- ***A wide range of cutting tools in various types available for Swiss-type lathes***

Spool machining

5056 (Aluminium)	
300 ~ 560 SFM	
.0016 IPR	
.02"-.20" DOC	
WET	
NTK : **KM1**	300 pcs
Competitor's PVD-coated carbide	200 pcs

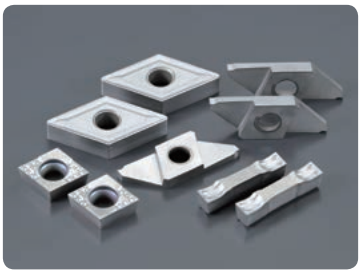
Best for	Optimized for	Excellent in
● Aluminium ● Plastic ● Non-ferrous materials	Swiss-type lathes	Edge sharpness



- Sharp edge
- Mirror-finish

PVD Coatings

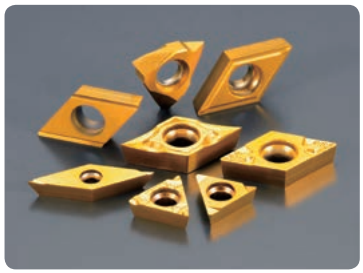
QM3/Q15 Q-Coat



Best wear resistance

- *stainless steel*
- *Carbon steel*
- *Alloy steel*

TM4 TM-Coat



Best balance of wear resistance and adhesion resistance

- *For small part machining in general*

DM4 DM-Coat



Best heat resistance

- *Heat resistant alloy*
- *Stainless steel*
- *Hardened material*

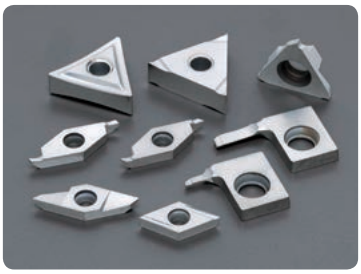
DT4 DT-Coat



Best balance of heat resistance and sharp edges

- *Titanium alloy*
- *Heat resistant alloy*
- *Stainless steel*
- *Hardened material*

VM1 V-Coat



Best edge sharpness

- *Titanium alloy*
- *Non-ferrous material*
- *Stainless steel*
- *Plastic*

ZM3/C7Z Z-Coat



Best adhesion resistance

- *General purpose machining*

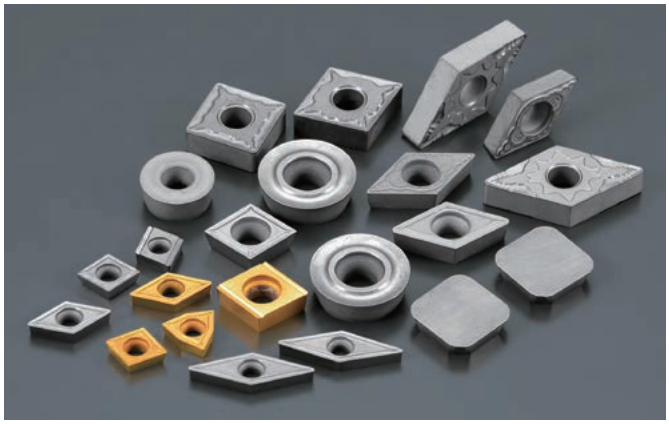
Coating Specifications

	Q-Coat	TM-Coat	DM-Coat	DT-Coat	V-Coat	Z-Coat
Thickness	Thick	Thin	Thick	Thin	Thin	Thick
Wear Resistance	◎	○	○	○	○	
Heat Resistance			◎	◎		○
Adhesion Resistance		○				◎
Edge Sharpness		○		○	◎	
Composition	TiCN	Multilayer	Multilayer	Multilayer	TiCN	TiN

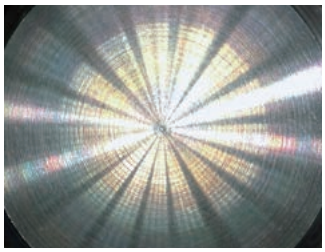
◎1st choice ○2nd choice

Cermet / PVD-coated Cermet

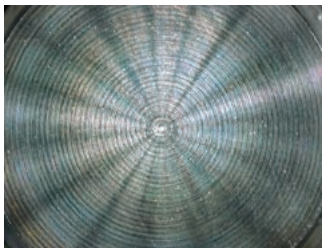
Cermet series



Cermet is a cutting tool material composed mainly of TiC (Titanium Carbide) and TiN (Titanium Nitride). The name, cermet, is derived from the words CERAMIC and METAL (representing carbide). As the name suggests, cutting performance is also in the mid-range of ceramic's and carbide's. The advantages of this material grade are high-quality and excellent surface finishes can be achieved with elevated cutting speeds. Cermets provide extended tool life.



Surface finished with cermet

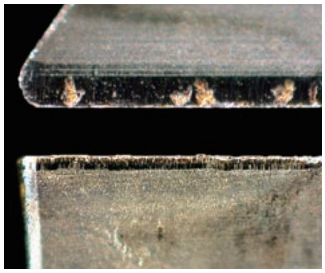


Surface finished with carbide

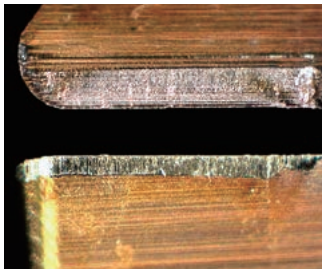
Features

High quality surface finish

The main components, TiC and TiN, have good BUE resistance as they have low affinity with work materials. Thus, machining with cermets brings high quality surface finish over extended periods of time.



Cermet



Carbide

High speed cutting

The main components, TiC and TiN, are more resistant to wear and oxidation at high temperature than WC (tungsten carbide), which is the main component of carbide tools. Because of excellent wear and oxidation resistance, cermet grades are less reactive with work materials and make stable high speed machining possible.

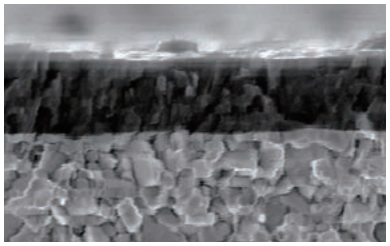
PVD-coated cermet series



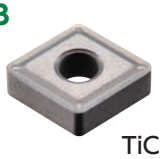
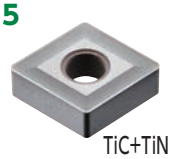
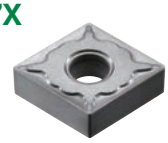


PVD TiN or TiCN coated cermet grades bring improved wear resistance. Since the coating layer does not contain any binder components, the coating maximizes the wear resistance of the titanium which delivers excellent performance and the tool life.

Features

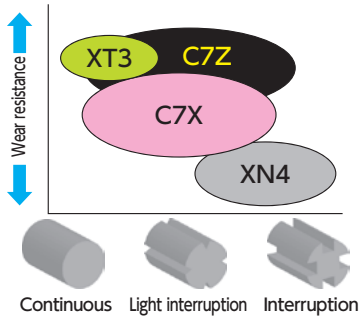


PVD coating with superb hardness and surface smoothness provide excellent wear resistance and adhesion resistance.

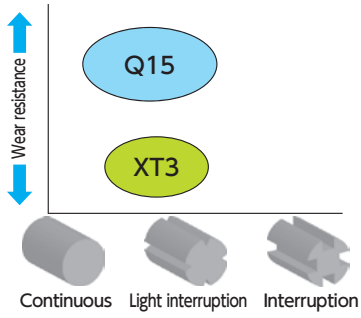
Grade / Coating	Applications / Features	Density g/cm³	Hardness HRA	Bending strength MPa	Young's modulus GPa	Thermal expansion coefficient X10⁻⁶/K	Thermal conductivity W/m・K
XT3  TiC+TiN base	P M K N ●Well balanced between wear resistance and toughness	6.3	92.5	1,700	450	8.4	21
Q15  TiC+TiN base+TiCN coat	P M K ●Superior wear resistance and toughness	6.3	92.5	1,700	450	8.4	21
C7X  TiCN base	P M K N ●Good combination of heat resistance and toughness	7.0	91.5	1,800	440	8.2	31
C7Z  TiCN base + TiN coat	P M K N ●Perfect combination of heat resistance and toughness	7.0	91.5	1,800	440	8.2	31
XN4  TiN base	P M ●Excellent toughness	5.9	91.5	1,900	450	8.9	42

Applications and ceramic property map

■ Steel



■ Ductile cast iron

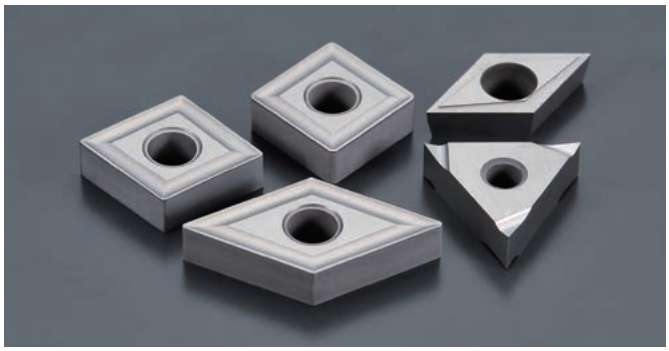


＊For coated grades, the values of the base material are indicated.

■ Applications

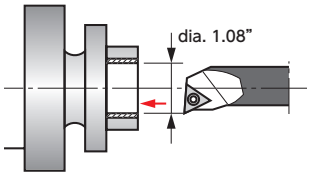
Material	General steel Carbon steel , Alloy steel					Stainless steel Stainless steel , Cast steel					Cast iron Gray cast iron , Ductile cast iron			
Cutting	Finish ←				→ Rough	Finish ←				→ Rough	Finish ←			→ Rough
Range	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30
Cermets	XT3					XT3					XT3			
		C7X						C7X						
				XN4										
PVD Coated cermets	Q15					Q15					Q15			
		C7Z						C7Z						

XT3 Well balanced combination of wear resistance and toughness !



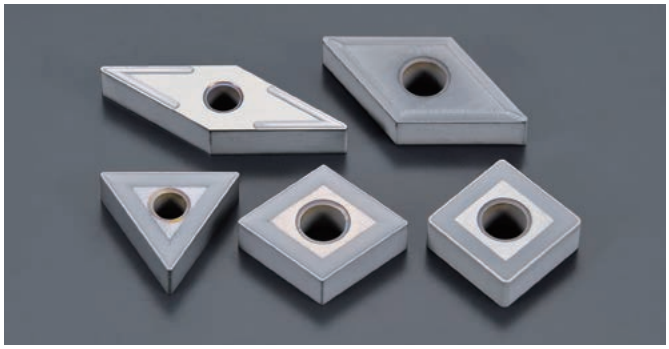
Features

- *Well-balanced combination of wear resistance and toughness*
- *Covers a wide range of steel cutting, from medium cutting to finishing of steel*

Crank shaft	
1049	
250 SFM	
.002 IPR	
.001" DOC	
WET	
NTK : **XT3**	100 pcs
Competitor's cermet	60 pcs

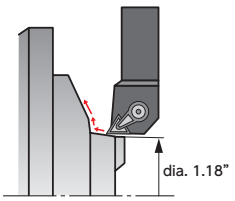
Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels ● Cast iron	Conventional lathes	Wear resistance

Q15 Coated cermet for high-speed finishing of ductile cast iron !



Features

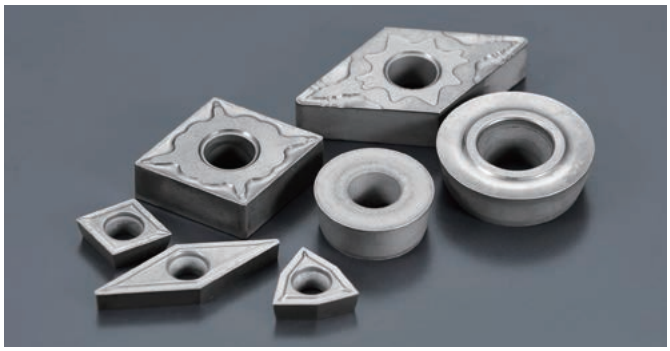
- *Further improved wear resistance and toughness from the TiCN-based coating*
- *The recommended grade for high-speed finishing of ductile cast iron*

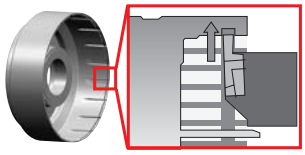
Differential case	
Ductile cast iron	
525 SFM	
.004 IPR	
.008" DOC	
WET	
NTK : **Q15**	35 pcs
Competitor's cermet	20 pcs

Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels ● Cast iron ● Ductile cast iron	Conventional lathes	Wear resistance

C7X

High-strength cermet grade that offers remarkable machining stability !



AT clutch	
SS	
800 SFM	
.0008-.0016 IPR	
.060" DOC	
WET	
NTK : **C7X**	200 pcs
Competitor's cermet	100 pcs

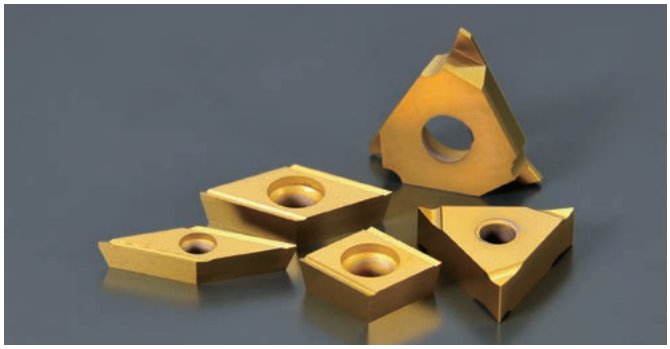
Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels ● Cast iron	Swiss-type lathes Conventional lathes	Balance

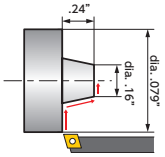
Features

- *Overcomes the traditional weakness of conventional cermet grades with improved thermal shock resistance*
- *Excellent grade for grooving and bearing machining*

C7Z

Combining the advantages of thermal shock resistance and fracture resistance !



Spring	
SS	
430 SFM	
.002 IPR	
.012" DOC	
WET	
NTK : **C7Z**	1600 pcs
Competitor's cermet	1200 pcs

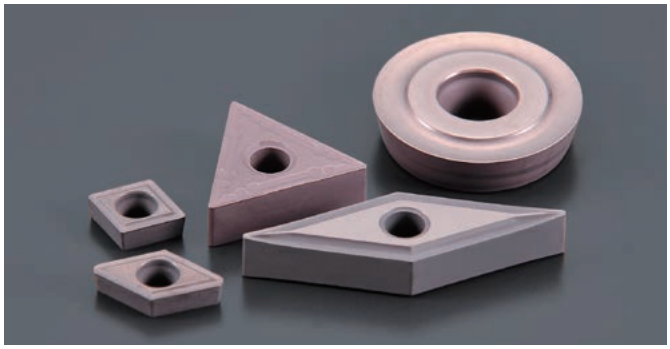
Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels ● Cast iron	Swiss-type lathes Conventional lathes	Balance

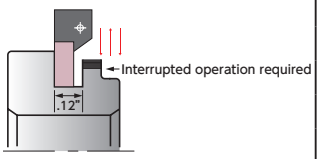
Features

- *Further improvement in wear resistance and thermal shock resistance with a TiN-based coating*
- *Excellent performance in grooving and bearing machining*
- *The most recommended grade for high-speed machining of steel*

XN4

Toughest cermet grade with excellent fracture resistance !



Gear	
5120H	
360 SFM	
.004 IPR	
WET	
NTK : **XN4**	300 pcs
Competitor's cermet	200 pcs

Best for	Optimized for	Excellent in
● Carbon steels ● Stainless steels ● Alloy steels	Conventional lathes	Toughness

Features

- *Allows for stable machining with longer tool life thanks to its excellent fracture resistance*

EZCUBE

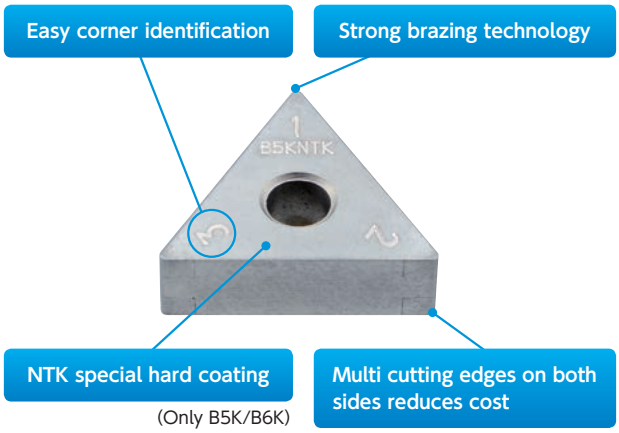
Excellent performance with superb versatility at a low price !



CBN (Cubic Boron Nitride)

Features

- ***Seven grades available to cover a variety of work materials***
- ***A wide selection in geometries***
- ***Multiple corners on both insert sides contributes to cost reduction***



● **NTK*EZCUBE* / EZ CUBE**

Material grade	Main binder	CBN content	Major application
B23	Ti-base	90%	High-speed semi roughing of cast iron/sintered alloys
B30	Ti-base	95%	High-speed finishing of cast iron
B6K/B36	TiCN-base	65%	Semi-interrupted to interrupted machining of hardened materials
B40	TiN-base	65%	Interrupted machining of highly hardened materials
B5K/B52	TiC-base	50%	Finishing of ductile cast iron and continuous machining of highly hardened materials

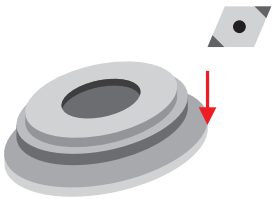
B23

Features

- ***Excellent wear resistance thanks to high CBN content***
- ***Ideal for roughing cast iron and machining sintered materials***

【Recommended cutting conditions】

Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Cast iron	Turning	Rough Semi finish	1300–3300	.004–.020	.008–.080	○	●
Sintered alloy	Turning	Rough–Finish	150–1000	.001–.008	.002–.020	●	●

Brake rotor	
Gray cast iron	
820 SFM	
.0079 IPR	
.079" DOC	
WET	
NTK : **B23**	210 pcs
Competitor's CBN	70 pcs

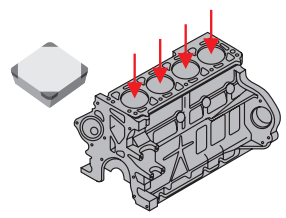
B30

Features

- ***Excellent wear resistance thanks to high CBN content***
- ***Designed for finishing cast iron***

【Recommended cutting conditions】

Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Cast iron	Turning	Semi finish Finish	1300–3300	.004–.020	.008–.080	○	●

Cylinder block	
Cast iron	
2600 SFM	
.012 IPR	
.004" DOC	
WET	
NTK : **B30**	800 pcs
Competitor's CBN	500 pcs

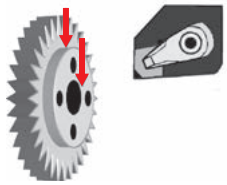
NEW B6K/B36

Features

- ***Excellent combination of wear resistance and toughness due to special TiCN binders***
- ***Best for semi-interrupted cutting of hardened materials***

【Recommended cutting conditions】

Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Hardened material	Turning (Light interrupted)	Rough–Finish	130–800	.002–.008	.004–.040	●	●

Gear (HRC61-65)	
5120H	
430 SFM	
.006 IPR	
.004" DOC	
DRY	
NTK : **B36**	50 pcs
Competitor's CBN	20 pcs

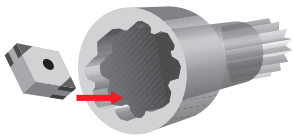
B40

Features

- ***Exceptional toughness thanks to special TiN binders***
- ***Designed for severely interrupted cutting of hardened materials***

【Recommended cutting conditions】

Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Hardened material	Turning (Heavy interrupted)	Rough–Finish	100–500	.002–.008	.004–.040	●	○

Universal joint (HRC62)	
1055	
360 SFM	
.0055 IPR	
.0059" DOC	
DRY	
NTK : **B40**	2300 pcs
Competitor's CBN	1500 pcs

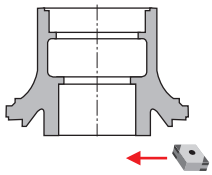
NEW B5K/B52

Features

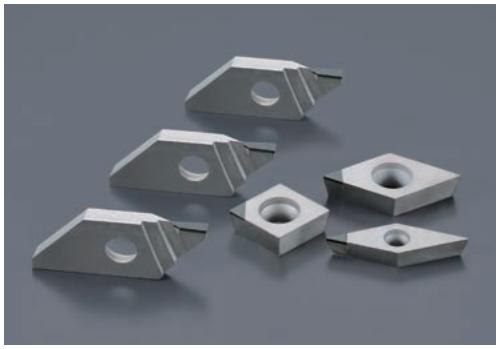
- ***Excellent wear resistance due to optimum CBN content with special TiC binders***
- ***Ideal for finishing ductile cast iron and continuous cuts for finishing hardened materials***

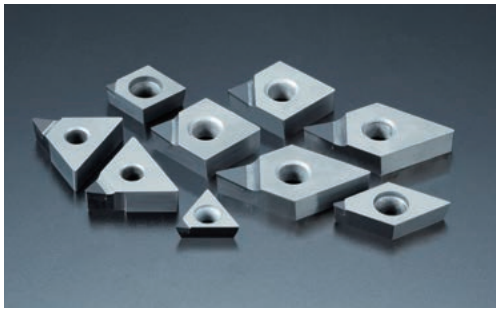
【Recommended cutting conditions】

Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR)	Depth of cut (inch)	DRY	WET
Ductile cast iron	Turning	Finish	300–1600	.004–.016	.012–.080	○	●
Hardened material	Turning (Continuous)	Rough–Finish	300–1000	.004–.020	.004–.040	○	●

Hub	
Ductile cast iron	
1150-1130 SFM	
.003 IPR	
.0079" DOC	
WET	
NTK : **B52**	60 pcs
Competitor's CBN	30 pcs

PCD (Polycrystalline Diamond)





Features

- *Faster cutting speeds than carbide*
- *Recommended for cutting aluminum and copper alloys thanks to its excellent adhesion resistance*
- *Incorporates a very sharp cutting edge*
- *Available for general turning and cut-off in addition to the inserts for milling cutters*

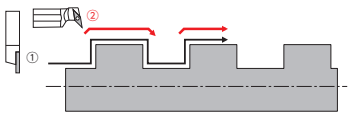
【Recommended cutting conditions】

Work material	Application	Purpose	Cutting speed (SFM)	Feed (IPR/IPT)	Depth of cut (inch)	DRY	WET
Aluminum alloy Non-ferrous material	Turning	Rough–Finish	–6500	–.006	–.200		●
	Milling	Rough–Finish	–25000	–.008	–.200		●

PD1

Features

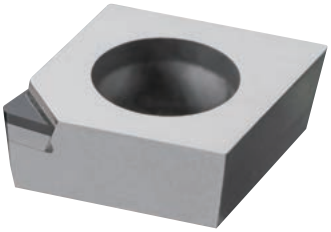
- *Sharp cutting edges*
- *Enables high precision and stable machining by controlling the potential for built-up edge*

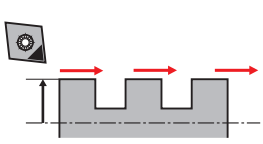
Spool		
①Rough	②Finish	
A6061	A6061	
660 SFM	660 SFM	
.004 IPR	.002 IPR	
.200 DOC	.008 DOC	
①NTK : **PD1**		30,000 pcs
②NTK : **PD1**		30,000 pcs

NEW PD2

Features

- *Super micro grain PCD maintains sharp cutting edges with increased chipping resistance*
- *Good chip control due to the high rake angle on the insert*



Spool	
A6061	
560 SFM	
.002 IPR	
.006 DOC	
NTK : **PD2**	15,000 pcs
Competitor's PCD	10,000 pcs

Recommended Insert Grade and Cutting Conditions

Front Turning

CSVF / CC.. / DC.. / VC.. / VB.. / TN.. / TF

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4			DT4	TM4	QM3	
	2nd choice	TM4 / QM3			QM3 / VM1	QM3	TM4 / DT4 / C7Z(X)	
Cutting Speed (SFM)		75 **125** 225	100 **200** 275		130 **230** 330	150 **300** 600	Carbide 150 **300** 500 C7Z(X) 400 **500** 800	
Recommended Chipbreaker Feed Rate (IPR)	≤.004 DOC	AMX KHG .0004 **.0008** .0012				AMX KHG .0004 **.0012** .0016		
	.004 to .060 DOC	CL S AM3 .0008 **.0016** .0024				CL AM3 AZ7 ZR S U/U1 UL .0008 **.0020** .0032		
	≥ .060 DOC	CL S AM3 .0008 **.0015** .0025				CL AM3 ZP .0012 **.0024** .0040		

Back Turning

CSVB

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4					VM1	
	2nd choice	VM1					DT4	
Cutting Speed (SFM)		75 **125** 225	100 **200** 275			100 **200** 300		
Feed Rate (IPR)	X Direction	.0004 **.0008** .0012						
	Z Direction	.0004 **.0012** .0016						

TBDP / TBMH / TBP / TBPA / TBVC

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4			DT4 / QM3	TM4	QM3	
	2nd choice	TM4 / QM3			VM1	QM3	TM4 / DT4 / C7Z(X)	
Cutting Speed (SFM)		75 **125** 225	100 **200** 275			150 **300** 500		
Feed Rate (IPR)	X Direction	.0004 **.0008** .0012				.0004 **.0008** .0016		
	Z Direction	.0008 **.0016** .0024				.0008 **.0016** .0031		

TB32 / TB43

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	ZM3					ZM3	
	2nd choice						Z15	
Cutting Speed (SFM)		50 **100** 150				ZM3 150 **300** 425 Z15 400 **600** 800		
Feed Rate (IPR)	X Direction	.0004 **.0012** .0020				.0004 **.0012** .0020		
	Z Direction	.0016 **.0020** .0031				.0016 **.0031** .0059		

Recommended Insert Grade and Cutting Conditions

Cut Off

CSVT

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4					VM1	
	2nd choice	VM1					DT4	
Cutting Speed (SFM)		100 160 230				100 200 300		
Feed Rate (IPR)		.0004 .0008 .0012				.0004 .0012 .0020		

CTP / CTPA / CTPS / CTPW

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4				TM4	QM3	
	2nd choice	TM4			QM3 / VM1	QM3	TM4 / DT4 / C7Z(X)	
Cutting Speed (SFM)		100 160 230				100 200 300		
Feed Rate (IPR)		.0008 .0012 .0020				.0008 .0016 .0024		

CTDP / CTV

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DM4				TM4	QM3	
	2nd choice	TM4 / QM3				QM3	TM4 / DM4	
Cutting Speed (SFM)		100 160 230				100 200 300		
Feed Rate (IPR)		.0012 .0020 .0031				.0016 .0031 .0047		

Grooving

CSV / GTG / GTMH / GTMT / GTMX / SBG

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4			DM4 / DT4	TM4	QM3	
	2nd choice	TM4 / QM3			QM3 / VM1	QM3	TM4 / DT4 / C7Z(X)	
Cutting Speed (SFM)		75 125 225	100 200 275		130 230 330	150 300 600	Carbide 150 300 500 C7Z(X) 400 500 800	
Feed Rate (IPR) A. Grooving B. Side turning*	Width .010-.020	A. .0002 - .0012 B. .0001 - .0002						
	.020-.040	A. .0008 - .0024 B. .0002 - .0004						A. .0008 - .0028 B. .0002 - .0004
	.040-.080	A. .0012 - .0028 B. .0008 - .0020						A. .0012 - .0031 B. .0012 - .0024
	> .080	A. .0012 - .0079 B. .0012 - .0024						

*When side turining, Max. DOC is under .0079". Under .016" width side turning impossible

GVW / Groove Duo

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	QM3						
	2nd choice							
Cutting Speed (SFM)		75 125 225	100 200 275		130 230 330	150 300 600	150 300 500	
Feed Rate (IPR) A. Grooving B. Side turning*	Width .118-.157	A. .0020 - .0059						
	.157-.197	A. .0039 - .0079					A. .0039 - .0098 B. .0059 - .0118	
	> .197	A. .0059 - .0138						

*Max DOC is 80% of width

GTPA

Work Material		Aluminum Alloy
Common Name		ASTM 5056 ASTM 6061
Grade	1st choice	PD1
	2nd choice	KM1
Cutting Speed (SFM)		PD1 330 650 1000 KM1 160 330 650
Feed Rate (IPR) A. Grooving B. Side turning		A. .0020 - .0079 B. .0039 - .0079

Recommended Insert Grade and Cutting Conditions

Threading

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	VM1			VM1 / ZM3		QM3	
	2nd choice	ZM3			QM3		VM1 / ZM3	
Cutting Speed (SFM)		75 125 225	100 200 275		130 230 330	150 300 600	150 300 500	

*Unless your machine is equipped with high speed threading program, please set the feed rate to 80 IPM or lower to prevent making incomplete threads

ID Boring

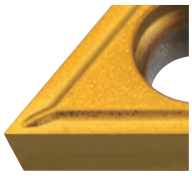
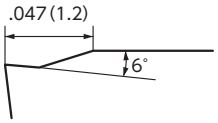
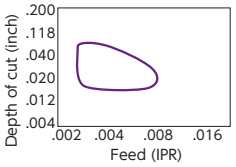
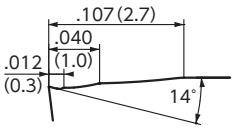
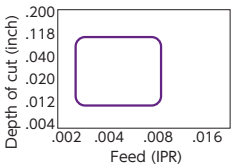
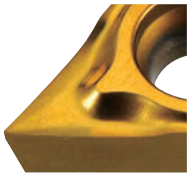
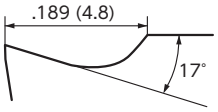
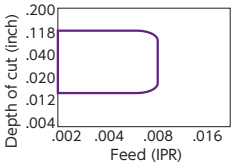
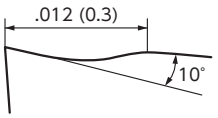
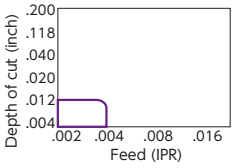
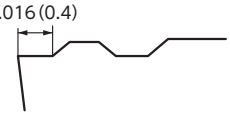
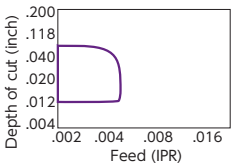
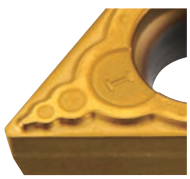
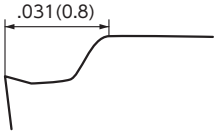
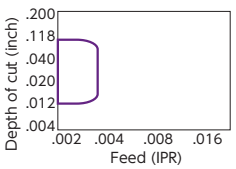
diameter ≤ .240" (LBM / STICK DUO)

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	TM4					VM1 / TM4	
	2nd choice	VM1 / ZM3					ZM3	
Cutting Speed (SFM)		60 160 230				100 200 300		
Feed Rate (IPR)		.0004 .0012 .0020						
Depth Of Cut (DOC)		.0020 .0031 .0039						

diameter > .240"

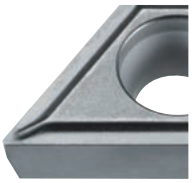
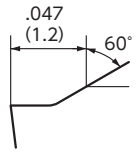
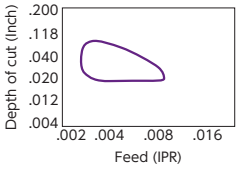
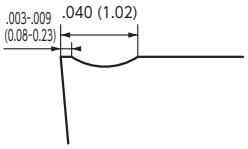
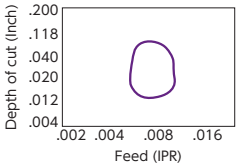
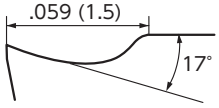
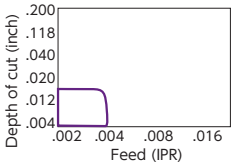
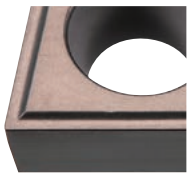
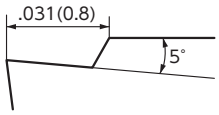
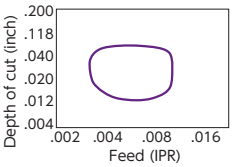
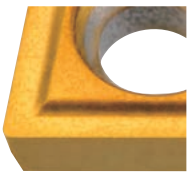
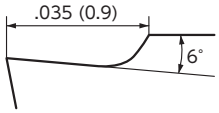
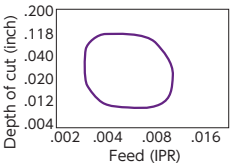
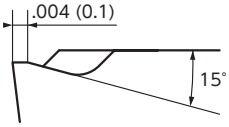
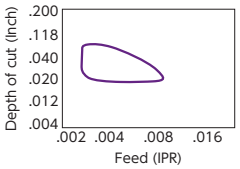
Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4			DT4	TM4	QM3	
	2nd choice	TM4			QM3 / TM4	QM3	TM4 / DT4 / C7Z(X)	
Cutting Speed (SFM)		150 230 330			130 230 330	150 300 600	Carbide 150 300 500 C7Z(X) 400 500 800	
Feed Rate (IPR)		.0008 .0024 .0047						
Depth Of Cut (DOC)		.0039 .0197 .0787						

Molded Chipbreakers for Positive Inserts

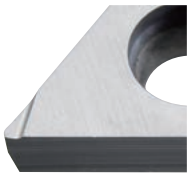
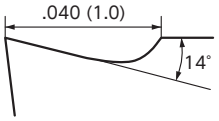
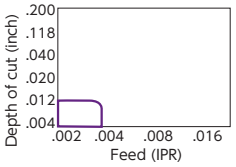
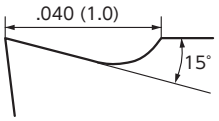
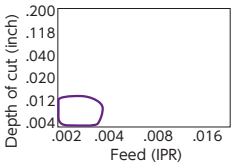
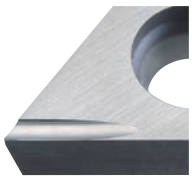
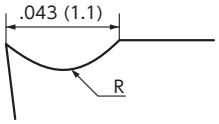
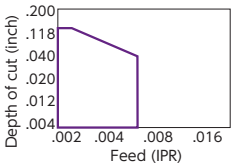
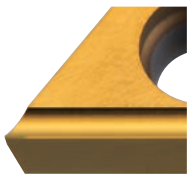
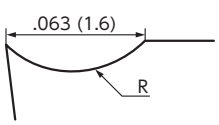
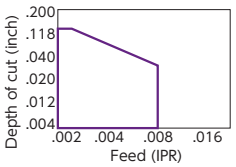
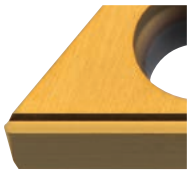
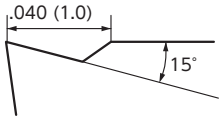
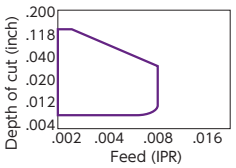
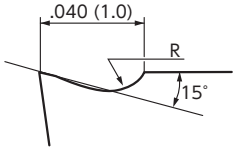
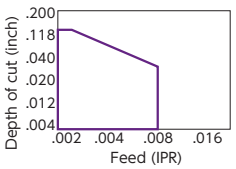
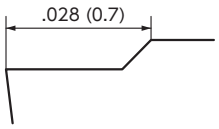
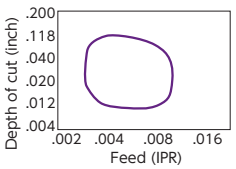
Name	Chipbreaker Geometry		Features	Chip Control Range
AM3	 ➡N8	 DCGT32.508 shown	●All purpose chipbreaker ●Sharp edge with toughness	
YL	NEW  WATCH ON YouTube ➡N8	 DCGT11T302MYL	●Great combination of sharpness and toughness ●Covers extremely wide range ●Excellent chip control	
CL	 WATCH ON YouTube ➡N8	 DCGT32.508M shown	●Sharpest molded Chipbreaker ●Excellent chip control ●Less tool pressure	
AMX	 WATCH ON YouTube ➡N8	 DCGT32.508M shown	●Designed for very light depth of cut ●Good sharpness	
AZ7	 WATCH ON YouTube	 DCGT32.508M shown	●Excellent chip control at light feed and light depth of cut	
ZR		 DCMT32.508 shown	●Covers a wide depth of cut range under high-speed and low-feed conditions	

Chipbreakers for Positive Inserts

Molded Chipbreakers for Positive Inserts (continued)

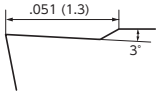
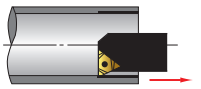
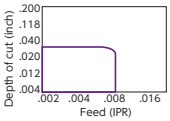
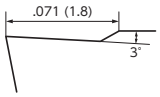
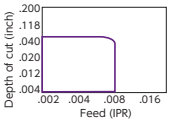
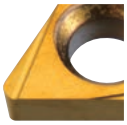
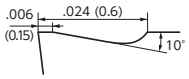
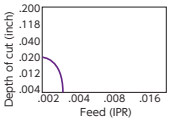
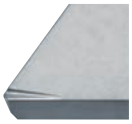
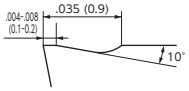
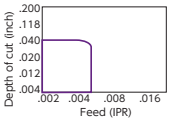
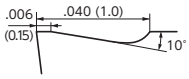
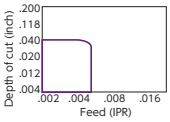
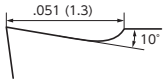
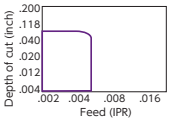
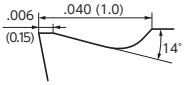
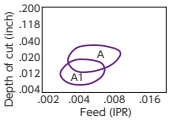
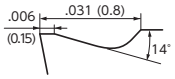
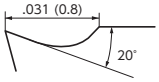
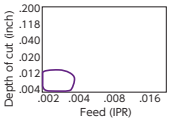
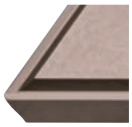
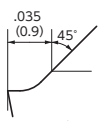
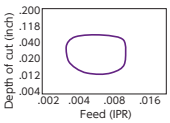
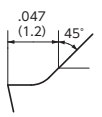
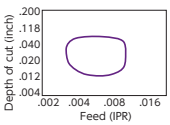
Name	Chipbreaker Geometry		Features	Chip Control Range
AF3		 DCGT32.508 shown	●Good chip control	
GA		 VBGT332 shown	●Sharp and tough cutting edge	
FG ➡O16		 TPGH221 shown	●Exclusively designed for ID boring ●Evacuates chips BACKWARD at light depth of cut ●Sharp cutting edge with high rake angle	
AF1		 CCGT32.508 shown	●Produces remarkable surfaces in semi-finishing of steels	
AM5		 CPGH21.508 shown	●Chipbreaker for boring ●Provides both good cutting performance and chip control	
QB		 WCGT5208 shown	●Sharp and tough cutting edge	

Ground Chipbreakers for Positive Inserts

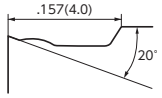
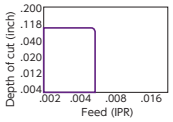
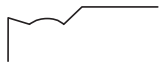
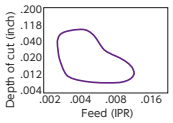
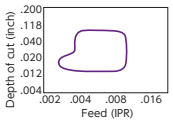
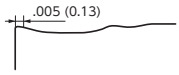
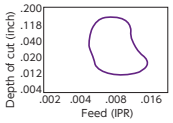
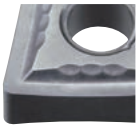
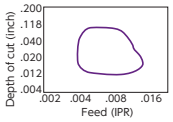
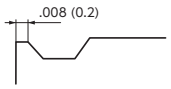
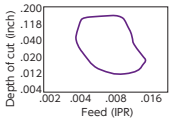
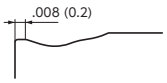
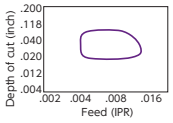
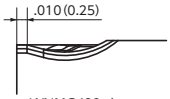
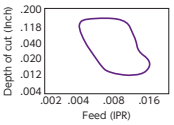
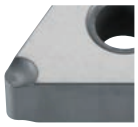
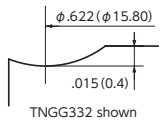
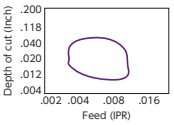
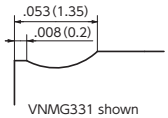
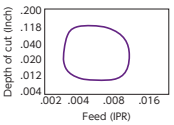
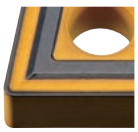
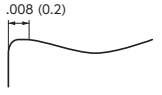
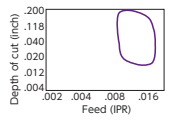
Name	Chipbreaker Geometry		Features	Chip Control Range
KHG		 DCET32.508 shown	●Excellent chip control on finishing cuts ●For super high-precision machining * Precision tolerance in corner radius: ±.0004"	
K		 TPGHP7308 shown	●Superb chip control on finishing applications ●Sharp cutting edge with the high rake angle	
UHG		 DCET32.504M shown	●Sharp cutting edge ●Covers wide cutting condition range * Precision tolerance in corner radius: ±.0004"	
U/U1		 DCGT32.508 shown	●Sharp cutting edge prevents materials from work hardening	
S		 DCGT320.508 shown	●Standard ground chipbreaker with wide cutting condition coverage ●Sharp cutting edge with excellent chip control	
AT		 DCGT32.508 shown	●Excellent adhesion resistance with dimensional stability ●Best for small diameter parts and for machining low carbon steels	
FM		 DCGT32.508 shown	●Full-peripheral ground chipbreaker	

Chipbreakers for Positive Inserts

Ground Chipbreakers for Positive Inserts (continued)

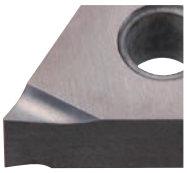
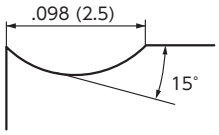
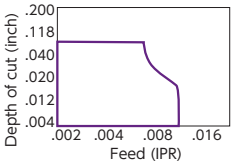
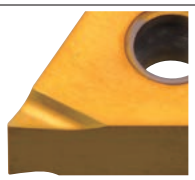
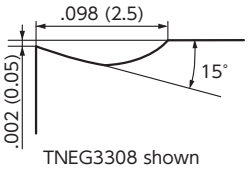
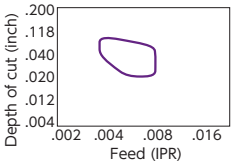
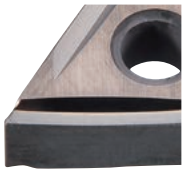
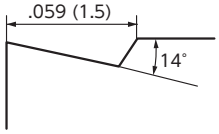
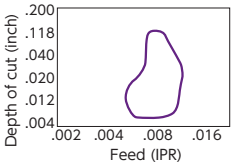
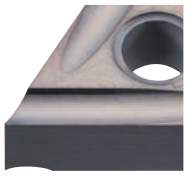
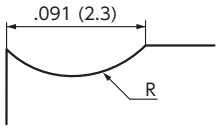
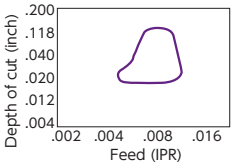
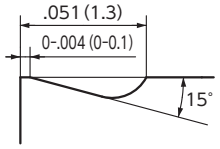
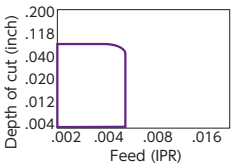
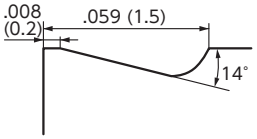
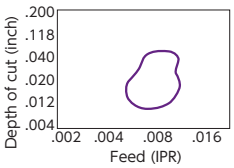
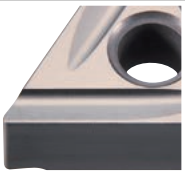
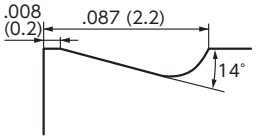
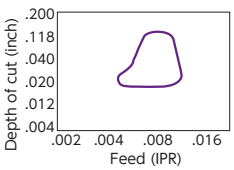
Name	Chipbreaker Geometry	Features	Chip Control Range
F05	 ➡O16	 TPGP5208 shown	●Exclusively designed for ID boring ●Evacuates chips BACKWARD ●Excellent choice for blind hole machining  Chip backward	
F1	 ➡O16	 TPGP2208 shown		
B1		 TCGP5208 shown	●Stable cutting when boring thanks to sharp and tough cutting edge	
P1		 TPGR321R shown		
B2		 TPGP7308 shown		
B3		 TPGP6308 shown		
A		 CPGP0308 shown	●Tough cutting edge and good chip control ●General-purpose ID chipbreaker	
A1		 CPGP8308 shown		
A2		 ERGP52Y shown	●Control chips at light feed and light depth of cut ●Sharp cutting edge due to large rake angle	
A283		 TPMR221 shown	●Breaks chip into small pieces	
A305		 TPMR332 shown		

Molded Chipbreakers for Negative Inserts

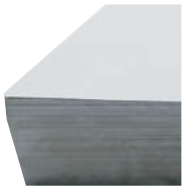
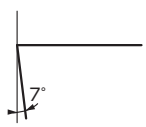
Name	Chipbreaker Geometry		Features	Chip Control Range
UL	 WATCH ON YouTube ➡O34	 .157(4.0) 20° TNGG3304M shown	●Negative insert with a positive insert's chipbreaker ●Reduced burr ●Improved microfinish ●Superb advantage in cost per corner over positive inserts	 Depth of cut (inch) .200 .118 .040 .020 .012 .004 .002 .004 .008 .016 Feed (IPR)
ZF1		 CNMG432 shown	●Produce small curled chips on finishing cuts	 Depth of cut (inch) .200 .118 .040 .020 .012 .004 .002 .004 .008 .016 Feed (IPR)
WM		 CNMG431 shown	●Remarkable chip control in the low feed range	 Depth of cut (inch) .200 .118 .040 .020 .012 .004 .002 .004 .008 .016 Feed (IPR)
ZW1		 .005 (0.13) CNMG432 shown	●Versatile chipbreaker with remarkable chip control performance in a wide range of conditions	 Depth of cut (inch) .200 .118 .040 .020 .012 .004 .002 .004 .008 .016 Feed (IPR)
ZP		 CNMG432 shown	●Double-positive rake and sharp cutting edge ●Low tool pressure even at heavy depth of cut	 Depth of cut (inch) .200 .118 .040 .020 .012 .004 .002 .004 .008 .016 Feed (IPR)
Z5		 .008 (0.2) CNMG432 shown	●Very tough insert ●Designed for machining with heavy interruption	 Depth of cut (inch) .200 .118 .040 .020 .012 .004 .002 .004 .008 .016 Feed (IPR)
WV		 .008 (0.2) CNMG432 shown	●Offers the advantages of both a tough cutting edge and chip control	 Depth of cut (inch) .200 .118 .040 .020 .012 .004 .002 .004 .008 .016 Feed (IPR)
WR		 .010 (0.25) WNMG432 shown	●Designed for cermet ●Covers wide range of conditions	 Depth of cut (inch) .200 .118 .040 .020 .012 .004 .002 .004 .008 .016 Feed (IPR)
R1		 ϕ.622 (ϕ15.80) .015 (0.4) TNGG332 shown	●Sharp cutting edge ●Good chip control	 Depth of cut (inch) .200 .118 .040 .020 .012 .004 .002 .004 .008 .016 Feed (IPR)
GE		 .053 (1.35) .008 (0.2) VNMG331 shown	●Sharp and tough cutting edge	 Depth of cut (inch) .200 .118 .040 .020 .012 .004 .002 .004 .008 .016 Feed (IPR)
G		 .008 (0.2) CNMG432 shown	●Tough chipbreaker for roughing with exceptional stability	 Depth of cut (inch) .200 .118 .040 .020 .012 .004 .002 .004 .008 .016 Feed (IPR)

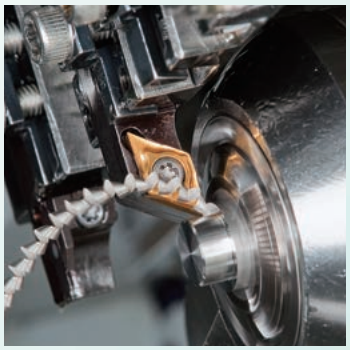
Chipbreakers for Negative Inserts

Ground Chipbreakers for Negative Inserts

Name	Chipbreaker Geometry	Features	Chip Control Range
DA	  TNGG3304 shown	●Excellent chip control and sharp cutting edge	
D1	  TNEG3308 shown		
N1	  TNGG3308 shown	●Double-positive design with the large rake angle ●Excellent chip control	
U2	  TNGG3308 shown	●Reduced burr and work hardening due to high rake design	
L2	  TNGG332R shown	●General-purpose chipbreaker with excellent toughness and chip control	
B	  TNGG331 shown		
C	  TNGG3308 shown		

Flat Top with Mirror Finish -Good for non-ferrous materials like PEEK, Brass, Aluminum and Copper-

Name	Chipbreaker Geometry	Features	Chip Control Range
V **P** **H**	 	●Very up-sharp edge with mirror finish V: Mirror finish on Top and Flank side with R0 nose radius P: Mirror finish on Top and Flank side H: Mirror finish on Top side	—

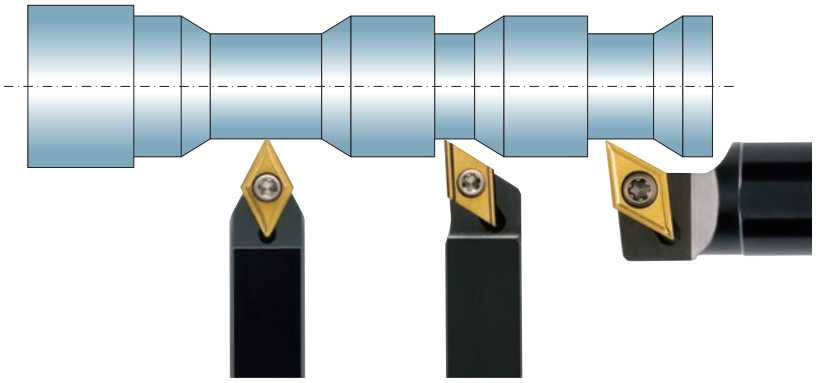


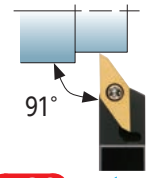
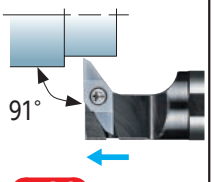
General Turning / Front Turning

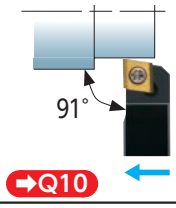
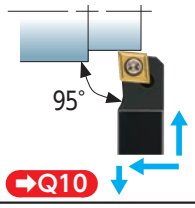
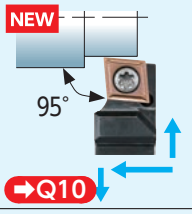
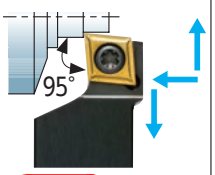
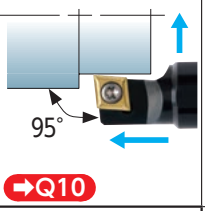
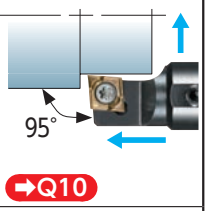
- Front Turning Tools ····· Q2
- Recommended Cutting Conditions ····· Q4
- General Information ····· Q4
- ANSI / ISO Insert Nomenclature ····· Q6
- Tool List ····· Q8

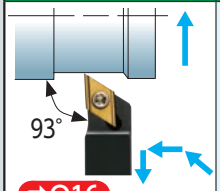
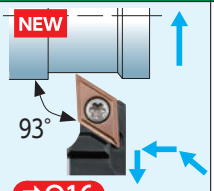
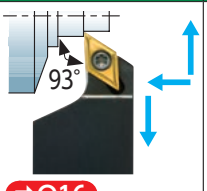
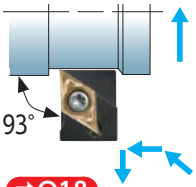
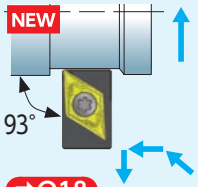
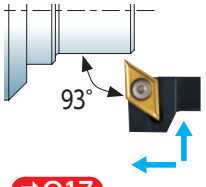
CSV Series ····· Q8
CC.. Series ····· Q10
DC.. Series ····· Q16
VB.. Series ····· Q24
VC.. Series ····· Q25
VP.. Series ····· Q30
TFT Series ····· Q32
TC.. Series ····· Q33
TN.. Series ····· Q34
CN.. Series ····· Q37
DN.. Series ····· Q38

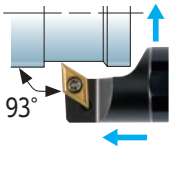
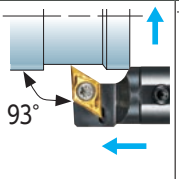
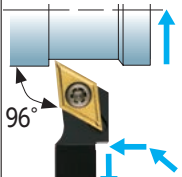
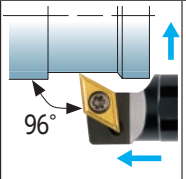
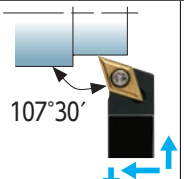
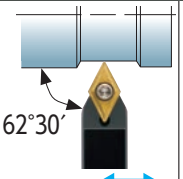
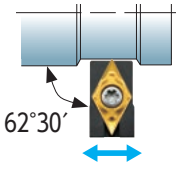
NTK General / Front Turning Tools - Product Lines

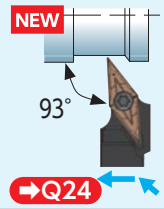
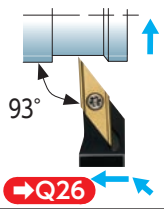
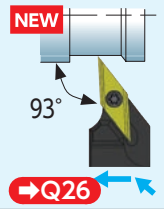
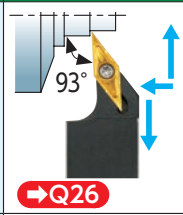
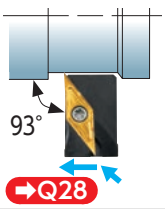
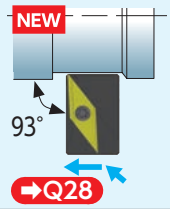


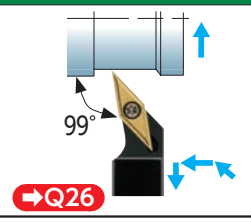
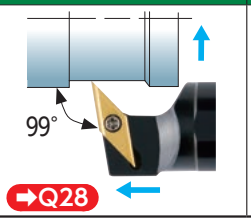
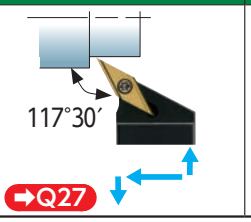
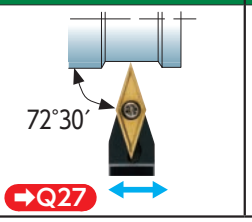
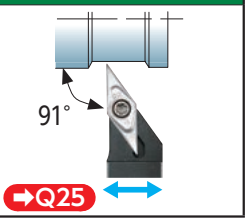
Insert	CSVF ➡Q9	
Holder	CSV	DS-CSV
	 ➡Q8	 ➡Q8

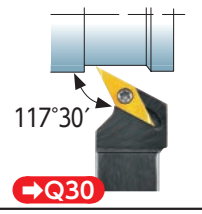
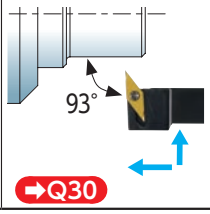
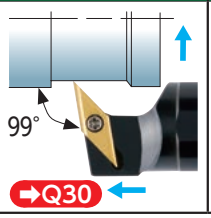
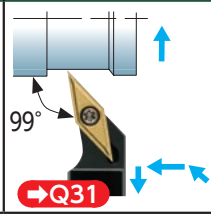
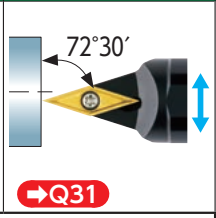
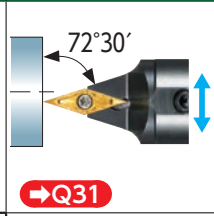
Insert	CC..21/32.5.. ➡Q12					
Holder	SCAC	SCLC	SCLC-OH	SCLC-F	DS-SCLL	DS-SCLL-ACH
	 ➡Q10	 ➡Q10	NEW  ➡Q10	 ➡Q10	 ➡Q10	 ➡Q10
			Coolant through	Shifted		DS-ACH

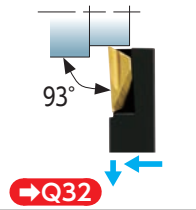
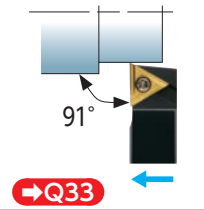
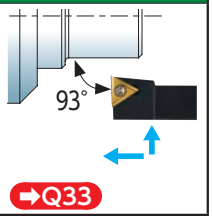
Insert	DC..21/32.5.. DC..21/32.5..WP.. ➡Q20					
Holder	SDJC	SDJC-OH	SDJC-F	Y-SDJC	Y-SDJC-OH	CH-SDUC
	 ➡Q16	NEW  ➡Q16	 ➡Q16	 ➡Q18	NEW  ➡Q18	 ➡Q17
		Coolant through	Shifted	Y-axis	Y-axis w/ Coolant through	

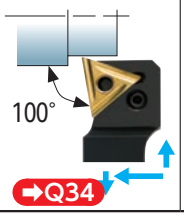
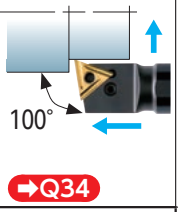
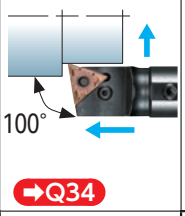
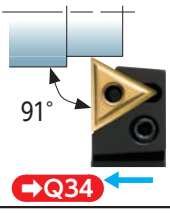
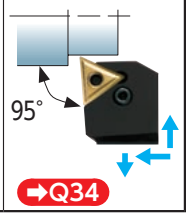
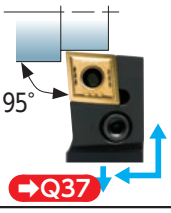
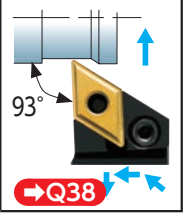
Insert	DC..21/32.5..WP.. ➡Q20		DC..21/32.5.. ➡Q20				
Holder	DS-SDUL	DS-SDUL-ACH	SDXC	DS-SDX	SDQC	SDNC	Y-SDNC
	 ➡Q19	 ➡Q19	 ➡Q16	 ➡Q19	 ➡Q16	 ➡Q16	 ➡Q18
		DS-ACH					Y-axis

Insert	VB..33 ➡Q24	VC..22..-WP	VC..22.. ➡Q29				
Holder	SVJB-OH	SVAC	SVJC	SVJC-OH	SVJC-F	Y-SVJC	Y-SVJC-OH
							
	Coolant through			Coolant through	Shifted	Y-axis	Y-axis w/ Coolant through

Insert	VC..22.. ➡Q29				VCGT21.5.. ➡Q25
Holder	SVXC	DS-SVXC	SVQC	SVVCN	SVAC-1L
					

Insert	VP..08020.. ➡Q30			VP..22.. ➡Q31		
Holder	SVQP	CH-SVUP	DS-SVXP	SVXP	DS-SVVPN	DS-SVVPN-ACH
						
						DS-ACH

Insert	TF33.. ➡Q32	TC..73../..21..-WP	TC..73../..21.. ➡Q33
Holder	TFT	STAC	CH-STUC
			

Insert	TN..33.. ➡Q36					CN..43.. ➡Q37	DN..43.. ➡Q38
Holder	PTXN	DS-PTX	DS-PTX-ACH	PTAN	PTLN	PCLN	PDJN
							
			DS-ACH				

Recommended Insert Grade and Cutting Conditions

Front Turning

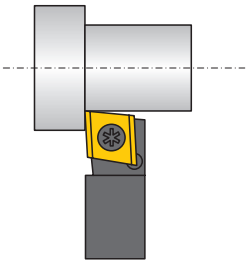
CSVF / CC.. / DC.. / VC.. / VB.. / TN.. / TF

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4			DT4	TM4	QM3	
	2nd choice	TM4 / QM3			QM3 / VM1	QM3	TM4 / DT4 / C7Z(X)	
Cutting Speed (SFM)		75 **125** 225	100 **200** 275		130 **230** 330	150 **300** 600	Carbide 150 **300** 500 C7Z(X) 400 **500** 800	
Recommended Chipbreaker Feed Rate (IPR)	≤.004 DOC	AMX KHG					AMX KHG	
		.0004 **.0008** .0012					.0004 **.0012** .0016	
	.004 to .060 DOC	CL YL AM3 S					CL YL AM3 AZ7 S U/U1 UL	
		.0008 **.0016** .0024					.0008 **.0020** .0032	
	≥ .060 DOC	CL YL AM3 S					CL YL AM3 ZP	
		.0008 **.0015** .0025					.0012 **.0024** .0040	

General Turning Inserts Explained

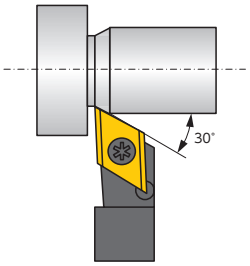
Advantage for each geometry

CC.. Style (80°)



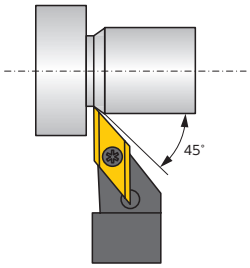
- Increased toughness. Cutting edge is close to insert pocket.
- Not applicable to undercut

DC.. Style (55°)



- Versatile geometry. Toughness of CC.. with flexibility of VC..
- Up to 30 deg. undercuts

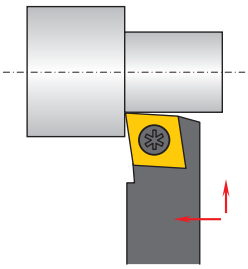
VB / VC / VP Style (35°)



- Wide coverage in work geometry.
- Up to 45 deg. undercuts

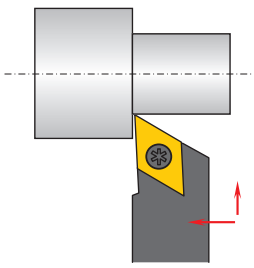
Chip Control and Finish

SCLCR ➡Q10



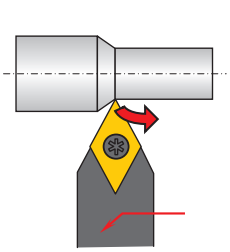
Rigid clamping
High dimensional repeatability

SDJCR ➡Q16



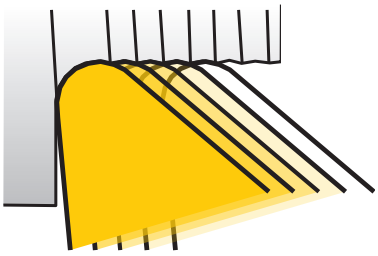
Increased room for chip evacuation creates better surface finish

SDNCN ➡Q16

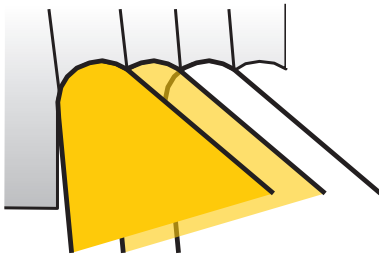


Chips flow away from the work

Surface Finish in General Turning Using Inserts with Wiper Flat

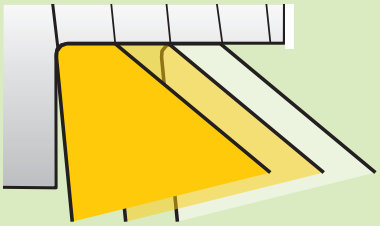


Slower feed rates create better finishes but sacrifices cycle time, chip control, and tool life.



Fast feed rates improve chip control but produce a bad surface finish.

Inserts with wiper



Inserts with a wiper flat create good chip control and surface finish.

Wiper Flat Insert - WP series

DCGT.. -WP (TFD) ➡Q20•Q22



for SDJC toolholders

TCGT.. -WP (TFT) ➡Q33



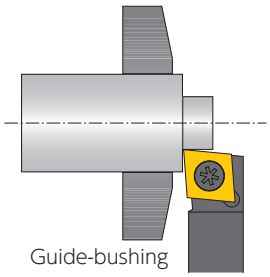
for STAC toolholders

VCGT.. -WP (TFV) ➡Q29

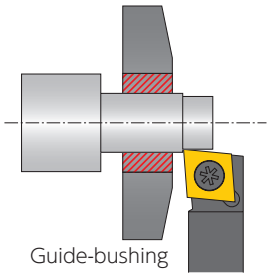


for SVAC toolholders

Roughing and Finishing Long Work on Swiss Lathes

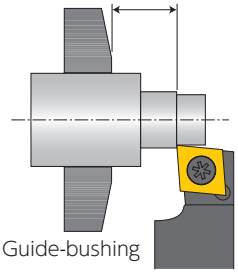


Single pass machining is common in Swiss front turning operations.



Conventional toolholders are not suitable for roughing or finishing of long parts. The guide-bushing cannot hold machined bar stock.

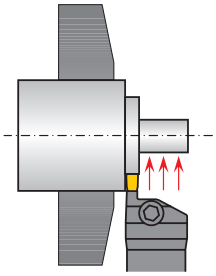
●Shifted Holders



Shifted Holders make a finishing process possible without worrying about the bar stock coming out of the guide-bushing.
Coolant flows effectively which improves chip control thanks to the increased room between the tools and guide-bushing.

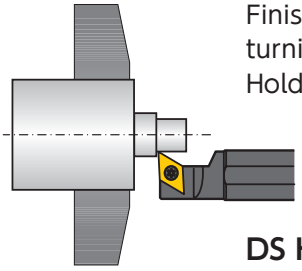
SCLC-N-F ➡Q10
SDJC-N-F ➡Q16
SVJC-N-F ➡Q26

●Combination of Grooving Tool and DS Holders



Rough with grooving tool for good chip control

GTWP Holders ➡T9

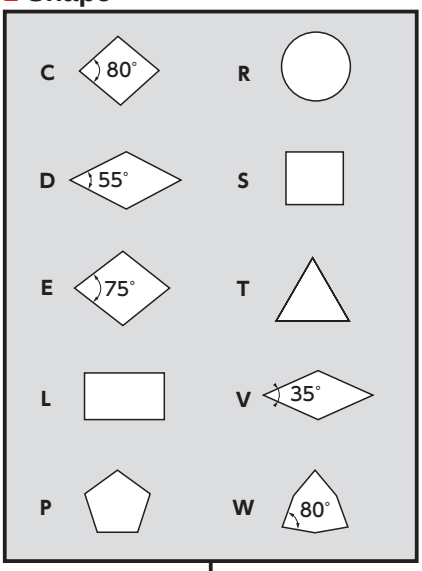


Finish by using general turning inserts with DS Holders

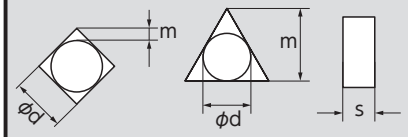
DS Holders

ANSI / ISO Insert Nomenclature

1 Shape



3 Tolerance Class



Symbol	d (inch)	m (inch)	s (inch)
A	±.0010	±.0002	±.0010
F	±.0050	±.0002	±.0010
C	±.0010	±.0005	±.0010
H	±.0050	±.0005	±.0010
E	±.0010	±.0010	±.0010
G	±.0010	±.0010	±.0050
J	±.0020	±.0020	±.0050
K	±.002 ~ ±.005	±.0005	±.0010
L	±.002 ~ ±.005	±.0010	±.0010
M	±.002 ~ ±.005	±.003 ~ ±.007	±.0050
N	±.002 ~ ±.005	±.003 ~ ±.007	±.0010
U	±.003 ~ ±.010	±.005 ~ ±.015	±.0050

C S T

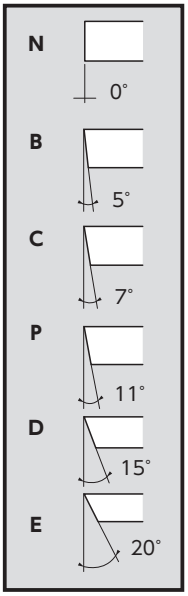
Inscribed Circle	M tolerance d (inch)	M tolerance m (inch)
1/4	±.002	±.003
3/8	±.002	±.003
1/2	±.003	±.005
5/8	±.004	±.006
3/4	±.004	±.006
1	±.005	±.007

D K

Inscribed Circle	M tolerance d (inch)	M tolerance m (inch)
1/4	±.002	±.004
3/8	±.002	±.004
1/2	±.003	±.006
5/8	±.004	±.006
3/4	±.004	±.007

	1	2	3	4
Inch	C	C	G	T
Metric	C	C	G	T

2 Clearances



4 Type

Type	Symbol	Type	Symbol
	N (E)	70°–90°	H
	F		
	R	70°–90°	B
	A		
	G	40°–60°	T
	M	40°–60°	W
Special design	X		

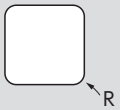
6 Thickness

Thickness S(inch)	Inch	Metric
3/32	1.5	02
1/8	2	03
5/32	2.5	T3
3/16	3	04
1/4	4	06
5/16	5	07
3/8	6	09
1/2	8	12

5 Cutting Edge Length

Inch		Metric					
Inscribed Circle		C	D	R	S	T	V	W
1/4	2	06	07	06	11	11	04
3/8	3	09	11	09	16	16	06
1/2	4	12	15	12	22	22	08
5/8	5	16	19	15	27	27	10
3/4	6	19	23	19	33	33	13
1	8	25	31	25	44	44	17

7 Nose Radius



Corner Radius	Inch	Metric
.001	01	00
.003	04M	01M
.004	04	01
.007	08M	02M
.008	08	02
.015	1M	04M
.016 (1/64)	1	04
.031 (1/32)	2	08

3	2.5	08M	F	N	AM3
5	6	7	8	9	10
09	T3	02M	F	N	AM3

8 Edge Sharpness

F	Up-sharp edge (without any edge preparation)
(Blank)	Non up-sharp edge

9 Hand of Chipbreaker

N	Neutral*
R	Right-hand
L	Left-hand

* Omitted when edge is not "up-sharp"

10 Type of Chipbreaker

See page C8 to C13 for chipbreaker information

11 Wiper insert

"-WP" after chipbreaker

CSV Series

Best for up to .200" diameter material

CSV-NC

For Gang-style machine

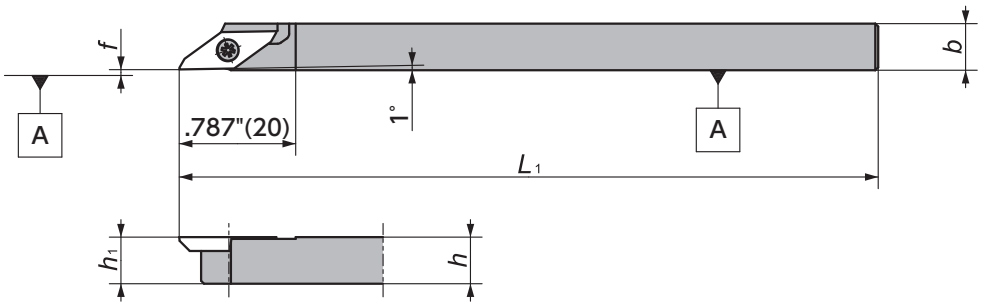


Figure-1

Right-Hand style shown

CSV

For Cam-style machine

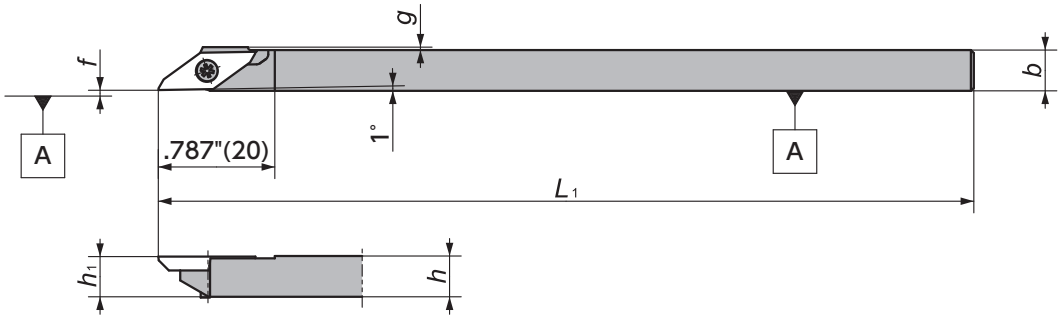


Figure-2

Right-Hand style shown

DS-CSVL

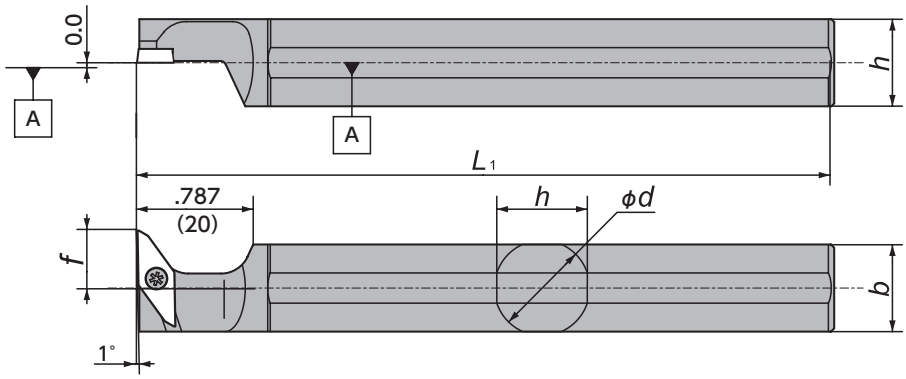


Figure-3

Left-Hand style shown
Takes Right-hand insert

CSV Series - Toolholders

■CSVR/L / CSVR/L-NC

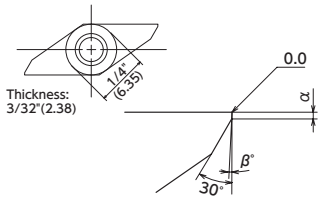
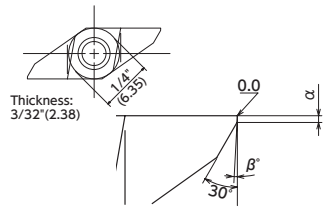
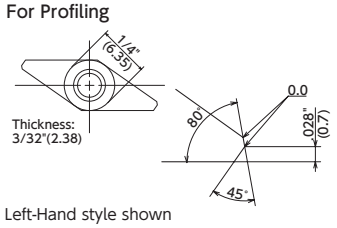
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	g (Inch)	g (mm)	Clamp Screw	Wrench
 CSV..11..	CSVR/L06-IN-NC	1	●	●	3/8		3/8		3/8		4.724	120	.004	0.1	–	–	LR1S-2.5 × 7	CLR-15S
	CSVR/L08-IN-NC	1	●	●	1/2		1/2		1/2		4.724	120	.004	0.1	–	–	LR1S-2.5 × 7	CLR-15S
	CSVR/L08NC	1	○	○	.315	8	.315	8	.315	8	4.724	120	.004	0.1	–	–	LR1S-2.5 × 7	CLR-15S
	CSVR/L08NC-F	1	○		.315	8	.315	8	.315	8	4.724	120	0–.004	0.0–0.1	–	–	LR1S-2.5 × 7	CLR-15S
	CSVR/L10GXNC	1	○		.394	10	.394	10	.394	10	3.346	85	.004	0.1	–	–	LR1S-2.5 × 7	CLR-15S
	CSVR/L10NC	1	○	○	.394	10	.394	10	.394	10	4.724	120	.004	0.1	–	–	LR1S-2.5 × 7	CLR-15S
	CSVR/L12NC	1	●	●	.472	12	.472	12	.472	12	4.724	120	.004	0.1	–	–	LR1S-2.5 × 7	CLR-15S
	CSVR/L07GX	2	○		.275	7	.275	7	.275	7	3.346	85	.004	0.1	.020	0.5	LR1S-2.5 × 7	CLR-15S
	CSVR/L07	2	○	●	.275	7	.275	7	.275	7	5.512	140	.004	0.1	.020	0.5	LR1S-2.5 × 7	CLR-15S
	CSVR/L08GX	2	○		.315	8	.315	8	.315	8	3.346	85	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L08	2	●	●	.315	8	.315	8	.315	8	5.512	140	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L095	2	○		.374	9.5	.374	9.5	.374	9.5	5.512	140	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L10	2	●	○	.394	10	.394	10	.394	10	5.512	140	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L12GX	2	○		.472	12	.472	12	.472	12	3.346	85	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L12	2	●		.472	12	.472	12	.472	12	5.512	140	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S

■DS-CSVL (Takes right-hand insert)

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 CSV..11FR..	DS-CSVL15	3		●	5/8	15.875	.591	15	.591	15	4.724	120	.394	10	LR1S-2.5 × 7	CLR-15S

CSV Series - Inserts

■CSVF - Front Turning Mirror finish

Shape	Item Number	Chip-breaker	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	Edge Geometry (α × β°) (Inch)	Edge Geometry (α × β°) (mm)	Coated Carbide DT4 R	DT4 L	VM1 R	VM1 L	ZM3 R	ZM3 L
 Right-Hand style shown	CSVF11FR/LV (M)	No	–	–	.012 × 5°	0.3 × 5°			○	○		
	CSVF11FR/LV-A (M)		–	–	.012 × 2°	0.3 × 2°			○			
	CSVF11FR/LV-M (M)		–	–	.006 × 2°	0.15 × 2°	●		●	●	○	
	CSVF11FR/LV-C (M)		–	–	.006 × 5°	0.15 × 5°			○			
 Right-Hand style shown	CSVF11FR/LVB (M)	Yes	.118	3	.012 × 5°	0.3 × 5°			●	○		
	CSVF11FR/LVB-A (M)		.118	3	.012 × 2°	0.3 × 2°			○			
	CSVF11FR/LVB-M (M)		.118	3	.006 × 2°	0.15 × 2°	●		●	●	○	
	CSVF11FR/LVB-C (M)		.118	3	.006 × 5°	0.15 × 5°			○			
For Profiling  Left-Hand style shown	CSVF11FR/LVX (M)	No	–	–						○		

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

● : Stock ○ : 1-2 week delivery (M) : Mirror finish

CSV series ➡O27 Cutting condition ➡Q4

Toolholders for CC.. Inserts

SCAC-N

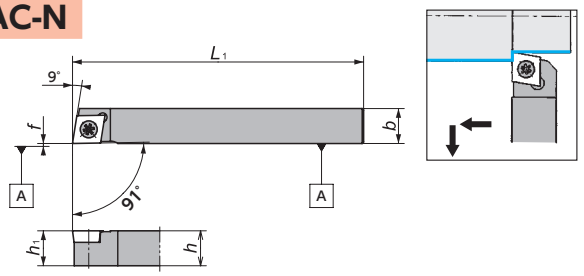


Figure-1

Right-Hand style shown

SCLC-N

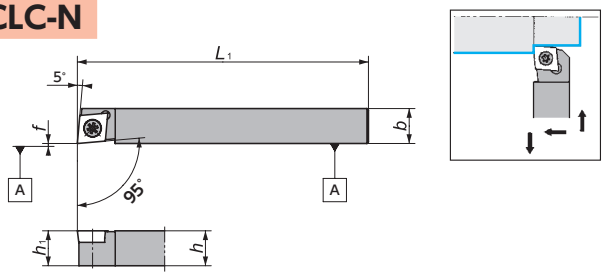
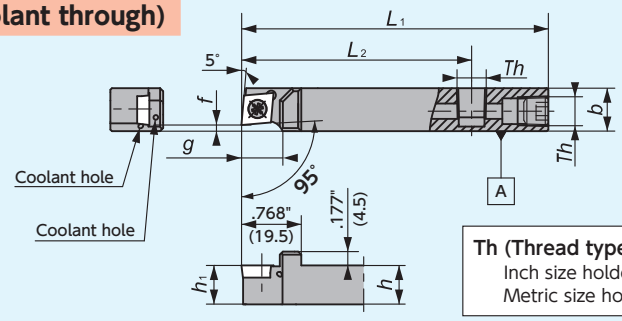


Figure-2

Right-Hand style shown

SCLC-N-OH (Coolant through)

NEW



Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: M6, Rc1/8 (PT1/8)

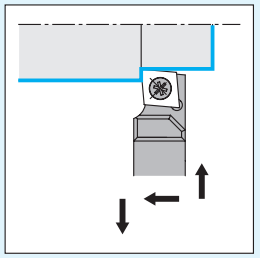
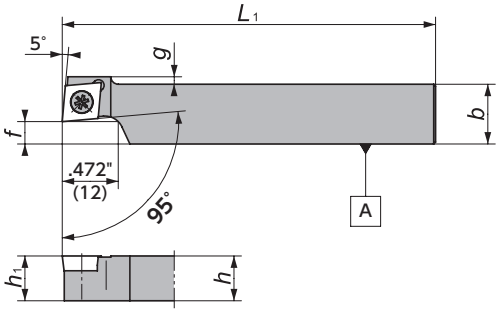


Figure-3

Right-Hand style shown

SCLC-N-F (Shifted)



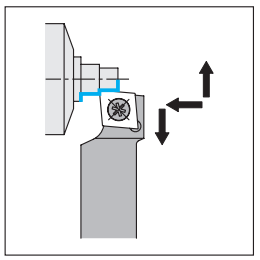


Figure-4

Right-Hand style shown

DS-SCL

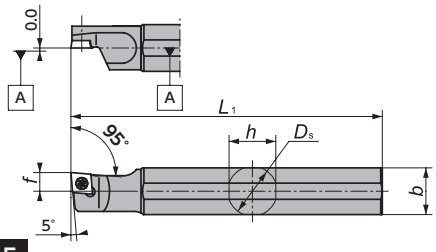
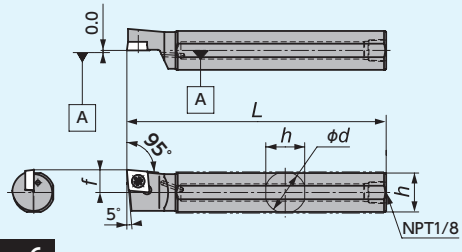


Figure-5

DS-SCL (Coolant through)



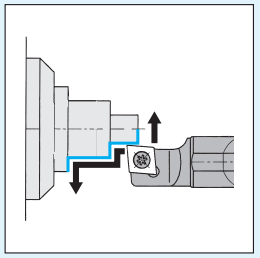


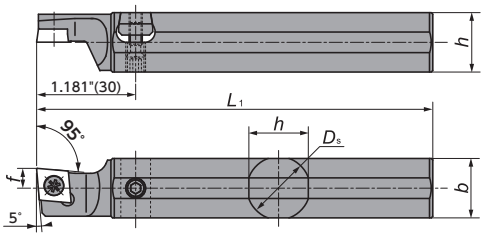
Figure-6

Left-Hand style shown
Takes Right-hand or Neutral insert

DS-SCLL-ACH (Adjustable centerline height)

〈Parts〉

Shank	Wedge	Screw for Wedge
ϕ.630" (16)	ACH-W18 (5805601)	WS060415-003 (5795539)
ϕ3/4" (19.05)		
ϕ.787" (20)		WS060419-004 (5799226)
ϕ.866" (22)		
ϕ1" (25.4)	ACH-W24 (5805619)	



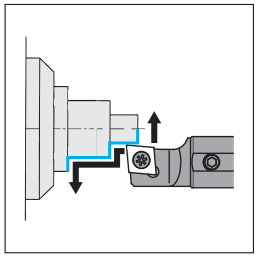


Figure-7

Left-Hand style shown
Takes Right-hand or Neutral insert

CC.. Series - Toolholders



■SCAC

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	g (Inch)	g (mm)	Clamp Screw	Wrench
CC..21.5..	SCAC□062C	1	■	■	3/8		3/8		3/8		4.724	120	0.0	0.0	–	–	LRIS-2.5 × 7	CLR-15S
	SCAC□082C	1	■	■	1/2		1/2		1/2		4.724	120	0.0	0.0	–	–	LRIS-2.5 × 7	CLR-15S
	SCAC□0808X06N	1	○	○	.315	8	.315	8	.315	8	4.724	120	0.0	0.0	–	–	LRIS-2.5 × 7	CLR-15S
	SCAC□1010X06N	1	○	○	.394	10	.394	10	.394	10	4.724	120	0.0	0.0	–	–	LRIS-2.5 × 7	CLR-15S
CC..32.5..	SCAC□083C	1	■	■	1/2		1/2		1/2		4.724	120	0.0	0.0	–	–	LRIS-4 × 10	LLR-25S
	SCAC□103C	1	■	■	5/8		5/8		5/8		4.724	120	0.0	0.0	–	–	LRIS-4 × 10	LLR-25S
	SCAC□1212GX09N	1	○		.472	12	.472	12	.472	12	3.346	85	0.0	0.0	–	–	LRIS-4 × 10	LLR-25S
	SCAC□1212X09N	1	○	○	.472	12	.472	12	.472	12	4.724	120	0.0	0.0	–	–	LRIS-4 × 10	LLR-25S

■SCLC

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	g (Inch)	g (mm)	Th	Clamp Screw	Wrench
CC..21.5..	SCLC□-062C	2	●	●	3/8		3/8		3/8		4.724	120	0.0	0.0	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
	SCLC□-082C	2	●	●	1/2		1/2		1/2		4.724	120	0.0	0.0	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
	SCLC□0808X06N	2	○	●	.315	8	.315	8	.315	8	4.724	120	0.0	0.0	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
	SCLC□1010X06N	2	○	○	.394	10	.394	10	.394	10	4.724	120	0.0	0.0	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
CC..32.5..	SCLC□-083C	2	●	●	1/2		1/2		1/2		4.724	120	0.0	0.0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SCLC□-103C	2	●	●	5/8		5/8		5/8		4.724	120	0.0	0.0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SCLC□1010H09N	2	○		.394	10	.394	10	.394	10	3.937	100	0.0	0.0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SCLC□1010X09N	2	○	○	.394	10	.394	10	.394	10	4.724	120	0.0	0.0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SCLC□1212GX09N	2	○	○	.472	12	.472	12	.472	12	3.346	85	0.0	0.0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SCLC□1212X09N	2	●	●	.472	12	.472	12	.472	12	4.724	120	0.0	0.0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SCLC□1616X09N	2	○	○	.630	16	.630	16	.630	16	4.724	120	0.0	0.0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
CC..21.5..	SCLC□082H-F079-OH	3	●		1/2		.551	14	1/2		3.937	100	.079	2	2.953	75	.472	12	NPT1/8	LRIS-2.5 × 7	CLR-15S
CC..32.5..	SCLC□083H-F079-OH	3	●		1/2		.551	14	1/2		3.937	100	.079	2	2.953	75	.472	12	NPT1/8	LRIS-4 × 10	LLR-25S
	SCLC□103H-F079-OH	3	■		5/8		5/8		5/8		3.937	100	.079	2	2.953	75	.472	12	NPT1/8	LRIS-4 × 10	LLR-25S
	SCLC□103HL-F079-OH	3	●		5/8		5/8		5/8		3.937	100	.079	2	2.953	75	.697	17.7	NPT1/8	LRIS-4 × 10	LLR-25S
	SCLC□1014F09N-F02OH	3	○		.394	10	.551	14	.394	10	3.150	80	.079	2.0	2.165	55	.472	12	M6 × 1	LRIS-4 × 10	LLR-25S
	SCLC□1214H09N-F02OH	3	○		.472	12	.551	14	.472	12	3.937	100	.079	2.0	2.953	75	.472	12	Rc1/8(PT1/8)	LRIS-4 × 10	LLR-25S
	SCLC□1616H09N-F02OH	3	○		.630	16	.630	16	.630	16	3.937	100	.079	2.0	2.953	75	.697	17.7	Rc1/8(PT1/8)	LRIS-4 × 10	LLR-25S
	SCLC□083C-F250	4	●		1/2		.984	25	1/2		4.724	120	1/4		–	–	0	0	–	LRIS-4 × 10	LLR-25S
	SCLC□083C-F500	4	●		1/2		.984	25	1/2		4.724	120	1/2		–	–	0	0	–	LRIS-4 × 10	LLR-25S
	SCLC□1015X09N-F05	4	○		.394	10	.591	15	.394	10	4.724	120	.197	5	–	–	.079	2	–	LRIS-4 × 10	LLR-25S
	SCLC□1020X09N-F10	4	○		.394	10	.787	20	.394	10	4.724	120	.394	10	–	–	.079	2	–	LRIS-4 × 10	LLR-25S
	SCLC□1218X09N-F06	4	●		.472	12	.709	18	.472	12	4.724	120	.236	6	–	–	0	0	–	LRIS-4 × 10	LLR-25S
	SCLC□1224X09N-F12	4	●		.472	12	.945	24	.472	12	4.724	120	.472	12	–	–	0	0	–	LRIS-4 × 10	LLR-25S

■DS-SCL (Takes right-hand or neutral insert)

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
CC..21.5..	DS-SCL□14F-06	5		○	.551	14.000	.512	13	.512	13	3.150	80	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□15H-06	5		○	5/8	15.875	.591	15	.591	15	3.937	100	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□16F-06	5		○	.630	16.000	.591	15	.591	15	3.150	80	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□19-06	5		●	3/4	19.050	.709	18	.709	18	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□20X-06	5		○	.787	20.000	.748	19	.748	19	3.740	95	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□20-06	5		●	.787	20.000	.748	19	.748	19	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□22-06	5		○	.866	22.000	.827	21	.827	21	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□25-06MET	5		●	.984	25.000	.945	24	.945	24	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SCL□25-06	5		●	1	25.400	.945	24	.945	24	5.906	150	.236	6.0	LRIS-2.5 × 7	CLR-15S
CC..32.5..	DS-SCL□14F-09	5		○	.551	14.000	.512	13	.512	13	3.150	80	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□15H-09	5		○	5/8	15.875	.591	15	.591	15	3.937	100	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□16F-09	5		○	.630	16.000	.591	15	.591	15	3.150	80	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□19GX-09	5		○	3/4	19.050	.709	18	.709	18	3.346	85	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□19-09	5		●	3/4	19.050	.709	18	.709	18	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCLL19-09-004	6		●	3/4	19.050	.709	18	.709	18	4.724	120	.413	10.5	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□20X-09	5		○	.787	20.000	.748	19	.748	19	3.740	95	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□20-09	5		●	.787	20.000	.748	19	.748	19	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□22-09	5		●	.866	22.000	.827	21	.827	21	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCLL22-09-005	6		●	.866	22.000	.827	21	.827	21	4.724	120	.472	12.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□25-09MET	5		○	.984	25.000	.945	24	.945	24	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□25-09	5		●	1	25.400	.945	24	.945	24	5.906	150	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□32-09	5		○	1.260	32.000	1.181	30	1.181	30	5.906	150	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□16F-09-ACH	7		●	.630	16.000	.610	15.5	.610	15.5	3.150	80	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□19-09-ACH	7		●	3/4	19.050	.709	18.0	.709	18.0	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□20-09-ACH	7		●	.787	20.000	.748	19.0	.748	19.0	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□22-09-ACH	7		●	.866	22.000	.827	21.0	.827	21.0	4.724	120	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□25-09MET-ACH	7		●	.984	25.000	.945	24.0	.945	24.0	5.906	150	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65
	DS-SCL□25-09-ACH	7		●	1	25.400	.945	24.0	.945	24.0	5.906	150	.236	6.0	LRIS-4 × 8	LLR-25S-20 × 65

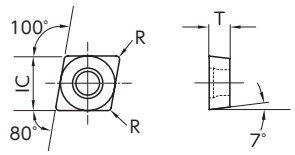
● : Stock ○ : 1-2 week delivery ■ : While stock lasts 💧 : Coolant through

Inserts ➡Q12 Cutting condition ➡Q4

CC.. inserts - Carbide / Cermet

[Molded Chipbreakers]

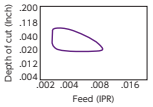
(inch)	IC	T
CC..21.5	1/4	3/32
CC..32.5	3/8	5/32

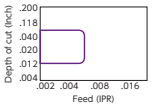


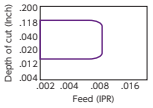
		QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●
Cast Iron	K								●	●		●	●
Non-Ferrous Material	N				●	●	●	●	●	●			●
Heat Resistant Alloy	S	●	●	●	●								
Hardened Material	H	●	●	●									

● : 1st Choice
● : Alternate choice

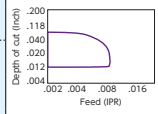
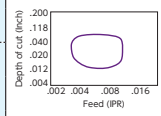
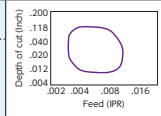
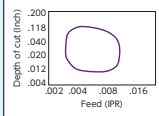
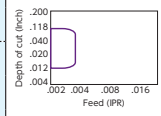
Shape	Item Number	ISO Item Number	IC	R	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
	CCGT 21.501 FNAM3	CCGT 060200 FNAM3	1/4	.001	●	●			○							
	CCGT 21.504M FNAM3	CCGT 060201M FNAM3	1/4	.003	●											
	CCGT 21.504 FNAM3	CCGT 060201 FNXAM3	1/4	.004									●			
	CCGT 21.508M FNAM3	CCGT 060202M FNAM3	1/4	.007	●	●										
	CCGT 21.508 FNAM3	CCGT 060202 FNAM3	1/4	.008					○	○						
	CCGT 21.508 FNAM3	CCGT 060202 FNXAM3	1/4	.008									●			
	CCGT 21.51M FNAM3	CCGT 060204M FNAM3	1/4	.015	●	●										
	CCGT 21.51 FNAM3	CCGT 060204 FNAM3	1/4	.016						○			●			
	CCGT 32.501 FNAM3	CCGT 09T300 FNAM3	3/8	.001	●	●		○	○							
	CCGT 32.504M FNAM3	CCGT 09T301M FNAM3	3/8	.003	●	●		○	○	○						
	CCGT 32.504 FNAM3	CCGT 09T301 FNXAM3	3/8	.004									●			
	CCGT 32.508M FNAM3	CCGT 09T302M FNAM3	3/8	.007	●	●		○	○	○						
	CCGT 32.508 FNAM3	CCGT 09T302 FNAM3	3/8	.008	●				○							
	CCGT 32.508 FNAM3	CCGT 09T302 FNXAM3	3/8	.008									●			
	CCGT 32.51M FNAM3	CCGT 09T304M FNAM3	3/8	.015	●	●		○	○	○						
	CCGT 32.51 FNAM3	CCGT 09T304 FNAM3	3/8	.016	●				○							
	CCGT 32.51 FNAM3	CCGT 09T304 FNXAM3	3/8	.016									●			
	CCGT 32.52 FNAM3	CCGT 09T308 FNAM3	3/8	.031	●											
	CCGT 32.52 FNAM3	CCGT 09T308 FNXAM3	3/8	.031									●			
	CCMT 21.508 FNAM3	CCMT 060202 FNAM3	1/4	.008			○									
	CCMT 21.508 AM3	CCMT 060202 ENBAM3	1/4	.008									○			○
	CCMT 21.51 FNAM3	CCMT 060204 FNAM3	1/4	.016			○									
	CCMT 21.51 AM3	CCMT 060204 ENBAM3	1/4	.016									●			○
	CCMT 32.508 FNAM3	CCMT 09T302 FNAM3	3/8	.008			○									
	CCMT 32.508 AM3	CCMT 09T302 ENBAM3	3/8	.008									○			○
	CCMT 32.51 FNAM3	CCMT 09T304 FNAM3	3/8	.016			○									
	CCMT 32.51 AM3	CCMT 09T304 ENBAM3	3/8	.016									●			○
	CCMT 32.52 FNAM3	CCMT 09T308 FNAM3	3/8	.031			○									
	CCMT 32.52 AM3	CCMT 09T308 ENBAM3	3/8	.031									●			○
	CCMT 32.53 AM3	CCMT 09T312 ENBAM3	3/8	.047									○			○
NEW	CCGT 32.504M YL	CCGT 09T301M YL	3/8	.003			●	○								
	CCGT 32.508M YL	CCGT 09T302M YL	3/8	.007			●	○								
	CCGT 32.51M YL	CCGT 09T304M YL	3/8	.015			●	○								
	CCGT 21.504M CL	CCGT 060201M CL	1/4	.003		●	○	●								
	CCGT 21.508M CL	CCGT 060202M CL	1/4	.007	●**	●	○	●								
	CCGT 32.501 CL	CCGT 09T300 CL	3/8	.001		○										
	CCGT 32.504M CL	CCGT 09T301M CL	3/8	.003		●	○	●								
	CCGT 32.508M CL	CCGT 09T302M CL	3/8	.007		●	○	●								
	CCGT 32.51M CL	CCGT 09T304M CL	3/8	.015	●**	●	○	●								







**To be released in November 2015.

Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	PVD Coated Q15	C7Z	
	CCGT 21.501 AZ7*	CCGT 060200 AZ7	1/4	.001	○												
	CCGT 21.504M AZ7*	CCGT 060201M AZ7	1/4	.003	○												
	CCGT 21.508M AZ7*	CCGT 060202M AZ7	1/4	.007	○												
	CCGT 32.501 AZ7*	CCGT 09T300 AZ7	3/8	.001	●	○		○		○							
	CCGT 32.504M AZ7*	CCGT 09T301M AZ7	3/8	.003	●	○		○		○							
	CCGT 32.508M AZ7*	CCGT 09T302M AZ7	3/8	.007	●	○		○		○							
	CCGT 32.51M AZ7*	CCGT 09T304M AZ7	3/8	.015	●	○		○		○							
	CCGT 21.504 AF1	CCGT 060201 ENBAF1	1/4	.004								●					
	CCGT 21.508 AF1	CCGT 060202 ENBAF1	1/4	.008								●					
	CCGT 21.51 AF1	CCGT 060204 ENBAF1	1/4	.016								●					
	CCGT 21.51 FNAF1	CCGT 060204 FNAF1	1/4	.016								●					
	CCGT 21.52 AF1	CCGT 060208 ENBAF1	1/4	.031								●					
	CCGT 32.508 AF1	CCGT 09T302 ENBAF1	3/8	.008								○					
	CCGT 32.508 FNAF1	CCGT 09T302 FNAF1	3/8	.008								●					
	CCGT 32.51 FNAF1	CCGT 09T304 FNAF1	3/8	.016								●					
	CCGT 32.51 AF1	CCGT 09T304 ENBAF1	3/8	.016								○					
	CCGT 32.52 FNAF1	CCGT 09T308 FNAF1	3/8	.031								●					
	CCGT 32.52 AF1	CCGT 09T308 ENBAF1	3/8	.031								○					
	CCMT 21.51 AM5	CCMT 060204 ENBAM5	1/4	.016										○			
	CCMT 32.51 AM5	CCMT 09T304 ENBAM5	3/8	.016										○			
	CCMT 32.52 AM5	CCMT 09T308 ENBAM5	3/8	.031										○			
	CCGT 21.508 ENBFM	CCGT 060202 ENBFM	1/4	.008								○					
	CCGT 21.51 ENBFM	CCGT 060204 ENBFM	1/4	.016								○					
	CCMT 21.508 ENBZR	CCMT 060202 ENBZR	1/4	.008									○			○	
	CCMT 21.51 ENBZR	CCMT 060204 ENBZR	1/4	.016									○			○	
	CCMT 32.508 ENBZR	CCMT 09T302 ENBZR	3/8	.008									○			○	
	CCMT 32.51 ENBZR	CCMT 09T304 ENBZR	3/8	.016									○			○	
	CCMT 32.52 ENBZR	CCMT 09T308 ENBZR	3/8	.031									○			○	

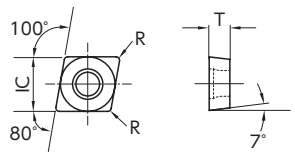
＊To be replaced by version which has 0.2mm higher edge.

● : Stock　　○ : 1-2 week delivery

Holders ➡Q10
Cutting condition ➡Q4
Chipbreaker ➡P21

Front Turning

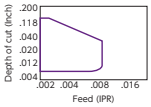
[Ground Chipbreakers]

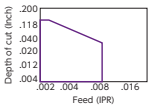


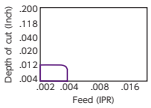
Steel	P	●
Stainless Steel	M	●
Cast Iron	K	●
Non-Ferrous Material	N	●
Heat Resistant Alloy	S	●
Hardened Material	H	●

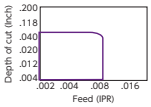
● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	PVD Coated Q15	C7Z
	CCGT 21.501 R/L S	CCGT 060200 R/L S	1/4	.001	R	Ⓡ			ⓇⓁ	ⓇL						
	CCGT 21.504M R/L S	CCGT 060201M R/L S	1/4	.003	R	Ⓡ										
	CCGT 21.504 R/L S	CCGT 060201 R/L S	1/4	.004					ⓇⓁ	RⓁ			ⓇⓁ			
	CCGT 21.508M R/L S	CCGT 060202M R/L S	1/4	.007	R											
	CCGT 21.508 R/L S	CCGT 060202 R/L S	1/4	.008					RⓁ	ⓇⓁ			ⓇⓁ			
	CCGT 21.51 R/L S	CCGT 060204 R/L S	1/4	.016	R											
	CCGT 32.501 R/L S	CCGT 09T300 R/L S	3/8	.001	R	R		R	ⓇⓁ	Ⓡ						
	CCGT 32.504M R/L S	CCGT 09T301M R/L S	3/8	.003	Ⓡ	R		R								
	CCGT 32.504 R/L S	CCGT 09T301 R/L S	3/8	.004	R				ⓇⓁ	ⓇⓁ						
	CCGT 32.508M R/L S	CCGT 09T302M R/L S	3/8	.007	Ⓡ	R		R								
	CCGT 32.508 R/L S	CCGT 09T302 R/L S	3/8	.008	R				RⓁ	Ⓡ						
	CCGT 32.51M R/L S	CCGT 09T304M R/L S	3/8	.015	Ⓡ			R								
	CCGT 32.51 R/L S	CCGT 09T304 R/L S	3/8	.016	R											
	CCMT 21.504 TR/L AS	CCMT 060201 TR/L AS	1/4	.004									ⓇⓁ			ⓇⓁ
	CCMT 21.508 TR/L AS	CCMT 060202 TR/L AS	1/4	.008									ⓇⓁ			ⓇⓁ
	CCMT 21.51 TR/L AS	CCMT 060204 TR/L AS	1/4	.016									ⓇⓁ			ⓇⓁ
	CCMT 32.504 TR/L AS	CCMT 09T301 TR/L AS	3/8	.004									ⓇⓁ			ⓇⓁ
	CCMT 32.508 TR/L AS	CCMT 09T302 TR/L AS	3/8	.008									ⓇⓁ			ⓇⓁ
	CCMT 32.51 TR/L AS	CCMT 09T304 TR/L AS	3/8	.016									ⓇⓁ			ⓇⓁ
	CCGT 21.501 R/L U	CCGT 060200 R/L U	1/4	.001		Ⓡ				Ⓡ						
	CCGT 21.504 R/L U	CCGT 060201 R/L U	1/4	.004		Ⓡ				ⓇⓁ						
	CCGT 21.508 R/L U	CCGT 060202 R/L U	1/4	.008		Ⓡ				ⓇⓁ						
	CCGT 32.501 R/L U1	CCGT 09T300 R/L U1	3/8	.001				Ⓡ		ⓇⓁ						
	CCGT 32.504 R/L U1	CCGT 09T301 R/L U1	3/8	.004		Ⓡ		Ⓡ		ⓇⓁ						
	CCGT 32.508 R/L U1	CCGT 09T302 R/L U1	3/8	.008		Ⓡ		Ⓡ		ⓇⓁ						
	CCGT 32.51 R/L U1	CCGT 09T304 R/L U1	3/8	.016				Ⓡ		ⓇⓁ						
	CCET 21.502 R/L KHG	CCET 0602005 R/L KHG	1/4	.002					ⓇⓁ							
	CCET 21.503 R/L KHG	CCET 0602008 R/L KHG	1/4	.003					ⓇⓁ							
	CCET 21.507 R/L KHG	CCET 0602018 R/L KHG	1/4	.007					ⓇⓁ							
	CCET 21.508 R/L KHG	CCET 060202 R/L KHG	1/4	.008					ⓇⓁ							
	CCET 32.502 R/L KHG	CCET 09T3005 R/L KHG	3/8	.002				Ⓡ	ⓇⓁ							
	CCET 32.503 R/L KHG	CCET 09T3008 R/L KHG	3/8	.003				Ⓡ	ⓇⓁ							
	CCET 32.507 R/L KHG	CCET 09T3018 R/L KHG	3/8	.007				Ⓡ	ⓇⓁ							
	CCET 32.508 R/L KHG	CCET 09T302 R/L KHG	3/8	.008				Ⓡ	ⓇⓁ							
	CCGT 21.508 FR/L F1	CCGT 060202 FR/L F1	1/4	.008				Ⓡ								
	CCGT 21.51 FR/L F1	CCGT 060204 FR/L F1	1/4	.016				Ⓡ								
	CCGT 32.508 FR/L F1	CCGT 09T302 FR/L F1	3/8	.008				Ⓡ								
	CCGT 32.51 FR/L F1	CCGT 09T304 FR/L F1	3/8	.016				Ⓡ								
	CCGW 21.501 FN	CCGW 060200 FN	1/4	.001						○						
	CCGW 21.501 H Ⓜ	CCGW 060200 H	1/4	.001							●					
	CCGW 21.504 FN	CCGW 060201 FN	1/4	.004						○						
	CCGW 21.504 H Ⓜ	CCGW 060201 H	1/4	.004							●					
	CCGW 21.508 H Ⓜ	CCGW 060202 H	1/4	.008							●					
	CCGW 21.51 FN	CCGW 060204 FN	1/4	.016						○						
	CCGW 21.52 FN	CCGW 060208 FN	1/4	.031						■						
	CCGW 32.500 V Ⓜ	CCGW 09T30 V	3/8	0					○							
	CCGW 32.501 FN	CCGW 09T300 FN	3/8	.001						○						
	CCGW 32.501 H Ⓜ	CCGW 09T300 H	3/8	.001							●					
	CCGW 32.504 FN	CCGW 09T301 FN	3/8	.004						○						
	CCGW 32.504 H Ⓜ	CCGW 09T301 H	3/8	.004							●					
	CCGW 32.504 P Ⓜ	CCGW 09T301 P	3/8	.004					○							
	CCGW 32.508M P Ⓜ	CCGW 09T302M P	3/8	.007		○										
	CCGW 32.508 H Ⓜ	CCGW 09T302 H	3/8	.008							●					
	CCGW 32.508 P Ⓜ	CCGW 09T302 P	3/8	.008					○							









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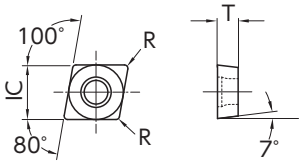
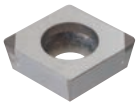
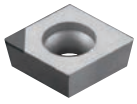
CC.. inserts - CBN / PCD



Steel	P															
Stainless Steel	M															
Cast Iron	K	●	●					●	●							
Non-Ferrous Material	N														●	●
Heat Resistant Alloy	S															
Hardened Material	H	●	●	●	●	●										

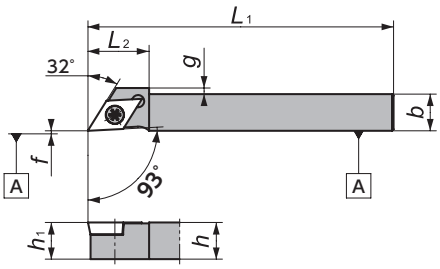
Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	CBN (Brazed) Coated B5K	B52	Coated B6K	B36	B40	B23	B30	PCD PD1	PD2
	CCGW 21.51 PD	CCGW 060204 PD	S0415	1/4	.016	2	.091		●							
	CCGW 32.508 PD	CCGW 09T302 PD	S0415	3/8	.008	2	.091		●							
	CCGW 32.508 PD	CCGW 09T302 PD	S0635	3/8	.008	2	.091					●				
	CCGW 32.51 PD	CCGW 09T304 PD	S0415	3/8	.016	2	.091		●							
	CCGW 32.51 PD	CCGW 09T304 PD	S0635	3/8	.016	2	.091					●				
	CCGW 32.52 PD	CCGW 09T308 PD	S0415	3/8	.031	2	.087		●							
	CCGW 32.52 PD	CCGW 09T308 PD	S0635	3/8	.031	2	.087					●				
	CCMW 32.504	CCMW 09T301	None	3/8	.004	1	–								○	
	CCMW 32.508	CCMW 09T302	None	3/8	.008	1	–								○	
	CCMW 32.51	CCMW 09T304	None	3/8	.016	1	–								○	
	CCMW 32.52	CCMW 09T308	None	3/8	.031	1	–								○	
NEW  with chipbreaker	CCMT 32.508 PF	CCMT 09T302PF	None	3/8	.008	1	–									●
	CCMT 32.51 PF	CCMT 09T304PF	None	3/8	.016	1	–									●

● : Stock ○ : 1-2 week delivery ■ : While stock lasts
R : Stock (Right-hand only) L : Stock (Left-hand only)
Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only) Ⓜ : Mirror finish

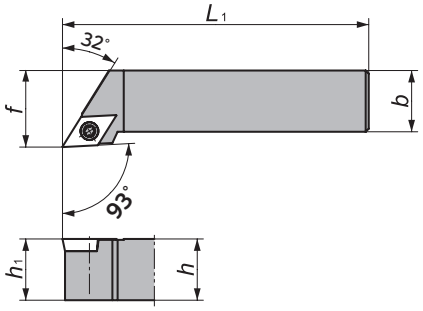
Holders ➡Q10
Cutting condition ➡Q4
Chipbreaker ➡P21

Toolholders for DC.. Inserts

SDJC-N



SDJCR/L20-X11



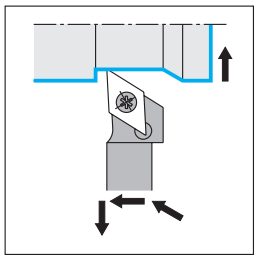
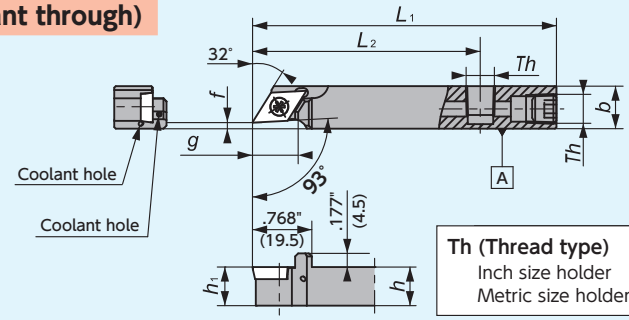


Figure-1

Right-Hand style shown

SDJC-N-OH (Coolant through)

NEW



Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: M6, Rc1/8 (PT1/8)

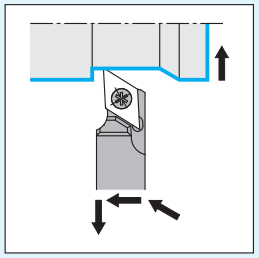
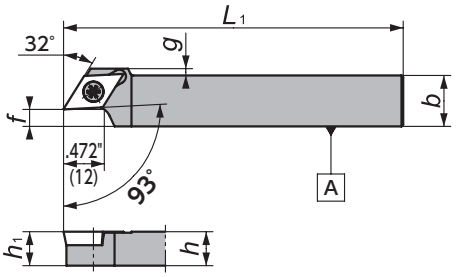


Figure-2

Right-Hand style shown

SDJC-N-F (Shifted)



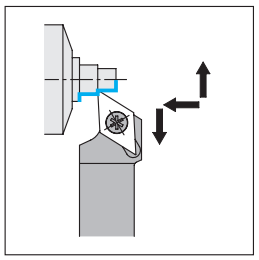
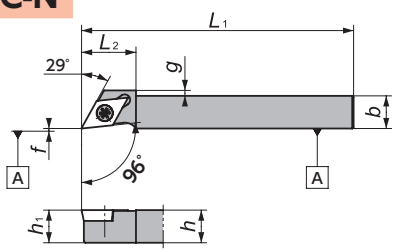


Figure-3

Right-Hand style shown

SDXC-N



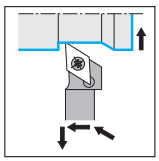
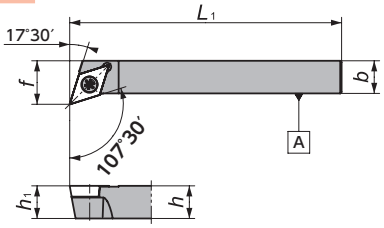


Figure-4

Right-Hand style shown

SDQC



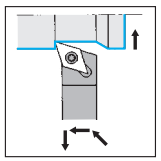
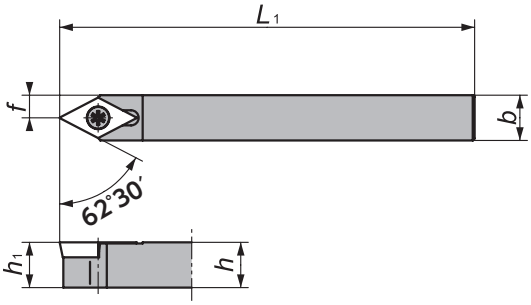


Figure-5

Right-Hand style shown

SDNC



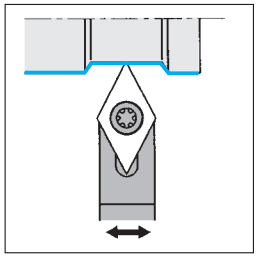


Figure-6

CH-SDUC

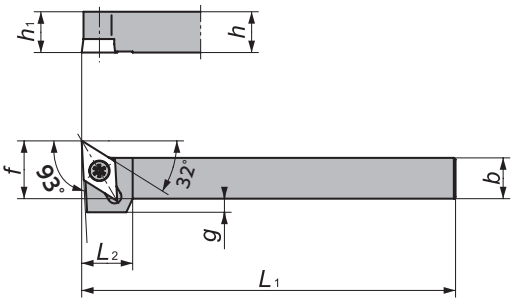
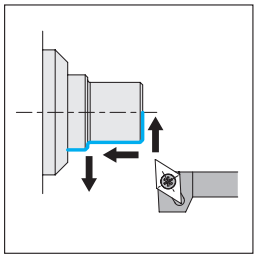
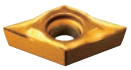


Figure-7



Left-Hand style shown
Takes Right-hand or Neutral insert

DC.. Series - Toolholders I



Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	g (Inch)	g (mm)	Th	Clamp Screw	Wrench
			N																		
DC..21.5.. DC..21.5..WP	SDJC℅-062C	1	●	●	3/8		3/8		3/8		4.724	120	0	0	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
	SDJC℅-082C	1	●	●	1/2		1/2		1/2		4.724	120	0	0	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
	SDJC℅0808X07N	1	○	○	.315	8	.315	8	.315	8	4.724	120	0	0	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
	SDJC℅1010GX07N	1	○		.394	10	.394	10	.394	10	3.346	85	0	0	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
	SDJC℅1010X07N	1	○	○	.394	10	.394	10	.394	10	4.724	120	0	0	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
DC..32.5.. DC..32.5..WP	SDJC℅-083C	1	●	●	1/2		1/2		1/2		4.724	120	0	0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDJC℅-103C	1	●	●	5/8		5/8		5/8		4.724	120	0	0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDJC℅1010H11N	1	○		.394	10	.394	10	.394	10	3.937	100	0	0	.748	19	.079	2	–	LRIS-4 × 10	LLR-25S
	SDJC℅1010X11N	1	○	○	.394	10	.394	10	.394	10	4.724	120	0	0	.748	19	.079	2	–	LRIS-4 × 10	LLR-25S
	SDJC℅1210X11N	1	○		.394	10	.472	12	.394	10	4.724	120	0	0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDJC℅1212GX11N	1	○	○	.472	12	.472	12	.472	12	3.346	85	0	0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDJC℅1216GX11N	1	○		.472	12	.630	16	.472	12	3.346	85	0	0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDJC℅1212X11N	1	●	●	.472	12	.472	12	.472	12	4.724	120	0	0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDJC℅1616X11N	1	○	○	.630	16	.630	16	.630	16	4.724	120	0	0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDJC℅20-X11	1	○	○	.787	20	.787	20	.787	20	4.724	120	.984	25	–	–	–	–	–	LRIS-4 × 10	LLR-25S
DC..21.5../DC..21.5..WP	SDJC℅082H-F079-OH 💧	2	●		1/2		.551	14	1/2		3.937	100	.079	2	2.953	75	.630	16	NPT1/8	LRIS-2.5 × 7	CLR-15S
DC..32.5.. DC..32.5..WP	SDJC℅083H-F079-OH 💧	2	●		1/2		.551	14	1/2		3.937	100	.079	2	2.953	75	.630	16	NPT1/8	LRIS-4 × 10	LLR-25S
	SDJC℅103H-F079-OH 💧	2	■		5/8		5/8		5/8		3.937	100	.079	2	2.953	75	.630	16	NPT1/8	LRIS-4 × 10	LLR-25S
	SDJC℅103HL-F079-OH 💧	2	●		5/8		5/8		5/8		3.937	100	.079	2	2.953	75	.724	18.4	NPT1/8	LRIS-4 × 10	LLR-25S
	SDJC℅1014F11N-F02OH 💧	2	○		.392	10	.551	14	.394	10	3.150	80	.079	2	2.165	55	.630	16	M6 × 1	LRIS-4 × 10	LLR-25S
	SDJC℅1214H11N-F02OH 💧	2	●		.472	12	.551	14	.472	12	3.937	100	.079	2	2.953	75	.630	16	Rc1/8(PT1/8)	LRIS-4 × 10	LLR-25S
	SDJC℅1616H11N-F02OH 💧	2	○		.630	16	.630	16	.630	16	3.937	100	.079	2	2.953	75	.724	18.4	Rc1/8(PT1/8)	LRIS-4 × 10	LLR-25S
DC..21.5.. DC..21.5..WP	SDJC℅1015X07N-F05	3	○		.394	10	.591	15	.394	10	4.724	120	.197	5	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
	SDJC℅1020X07N-F10	3	○		.394	10	.787	20	.394	10	4.724	120	.394	10	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
DC..32.5.. DC..32.5..WP	SDJC℅083C-F250	3	●		1/2		.728	18.5	1/2		4.724	120	1/4		–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDJC℅083C-F500	3	●		1/2		1		1/2		4.724	120	1/2		–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDJC℅1015X11N-F05	3	○		.394	10	.591	15	.394	10	4.724	120	.197	5	.748	19	.079	2	–	LRIS-4 × 10	LLR-25S
	SDJC℅1020X11N-F10	3	○		.394	10	.787	20	.394	10	4.724	120	.394	10	.748	19	.079	2	–	LRIS-4 × 10	LLR-25S
	SDJC℅1218X11N-F06	3	●		.472	12	.709	18	.472	12	4.724	120	.236	6	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDJC℅1224X11N-F12	3	●		.472	12	.945	24	.472	12	4.724	120	.472	12	–	–	–	–	–	LRIS-4 × 10	LLR-25S
DC..32.5..	SDXC℅1010X11N	4	○		.394	10	.394	10	.394	10	4.724	120	0	0	.787	20	.118	3	–	LRIS-4 × 10	LLR-25S
	SDXC℅1016X11N	4	○		.394	10	.630	16	.394	10	4.724	120	0	0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDXC℅1212X11N	4	○		.472	12	.472	12	.472	12	4.724	120	0	0	.787	20	.039	1	–	LRIS-4 × 10	LLR-25S
	SDXC℅1216X11N	4	○		.472	12	.630	16	.472	12	4.724	120	0	0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDXC℅1616X11N	4	○		.630	16	.630	16	.630	16	4.724	120	0	0	–	–	–	–	–	LRIS-4 × 10	LLR-25S
DC..21.5..	SDQC℅10-X07	5	○	○	.394	10	.394	10	.394	10	4.724	120	.472	12	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
DC..32.5..	SDQC℅12-X11	5	○	○	.472	12	.472	12	.472	12	4.724	120	.630	16	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDQC℅16-X11	5	○	○	.630	16	.630	16	.630	16	4.724	120	.787	20	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDQC℅20-X11	5	○		.787	20	.787	20	.787	20	4.724	120	.984	25	–	–	–	–	–	LRIS-4 × 10	LLR-25S
DC..21.5..	SDNCN-062	6		●	3/8		3/8		3/8		2.5	63.5	3/16		–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
	SDNCN-082	6		●	1/2		1/2		1/2		3.5	88.9	1/4		–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
	SDNCN08-X07	6		○	.315	8	.315	8	.315	8	4.724	120	.157	4	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
	SDNCN10-X07	6		○	.394	10	.394	10	.394	10	4.724	120	.197	5	–	–	–	–	–	LRIS-2.5 × 7	CLR-15S
DC..32.5..	SDNCN-083	6		●	1/2		1/2		1/2		3.937	100	1/4		–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDNCN-103	6		●	5/8		5/8		5/8		3.937	100	5/16		–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDNCN12-X11	6		○	.472	12	.472	12	.472	12	4.724	120	.236	6	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDNCN16-X11	6		○	.630	16	.630	16	.630	16	4.724	120	.315	8	–	–	–	–	–	LRIS-4 × 10	LLR-25S
	SDNCN20-X11	6		○	.787	20	.787	20	.787	20	4.724	120	.394	10	–	–	–	–	–	LRIS-4 × 10	LLR-25S
DC..32.5.. DC..32.5..WP	CH-SDUC℅1010H11	7		○	.394	10	.394	10	.394	10	3.937	100	.591	15	.591	15	.236	6	–	LRIS-4 × 10PW	CLR-15S
	CH-SDUC℅1212H11	7		○	.472	12	.472	12	.472	12	3.937	100	.669	17	.591	15	.157	4	–	LRIS-4 × 10PW	CLR-15S

● : Stock ○ : 1-2 week delivery 💧 : Coolant through

Inserts ➡Q20 Cutting condition ➡Q4

Y-Axis Holders for DC.. Inserts

Y-SDJC

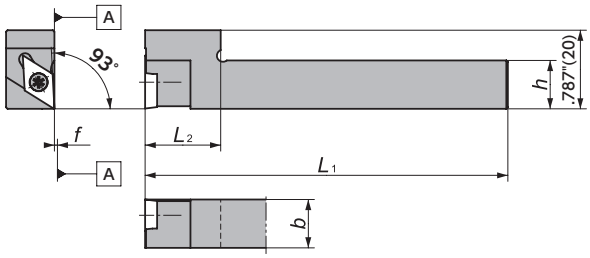
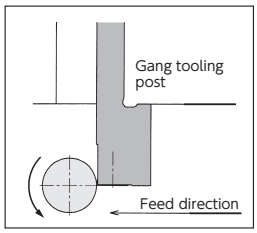


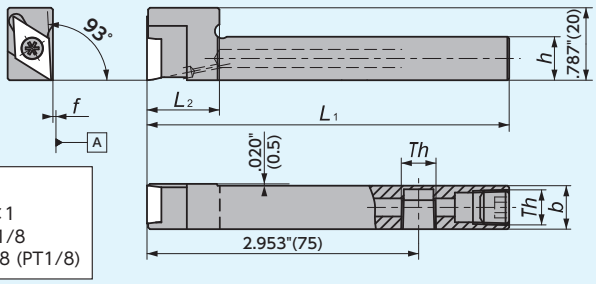
Figure-1



Right-Hand style shown
Takes Right-hand or Neutral insert

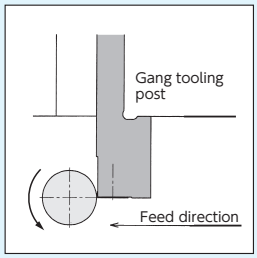
Y-SDJC-OH (Coolant through)

NEW



Th (Thread type)
3/8" holder : M6×1
1/2", 5/8" holder : NPT1/8
Metric size holder: Rc1/8 (PT1/8)

Figure-2



Right-Hand style shown
Takes Right-hand or Neutral insert

Y-SDNC

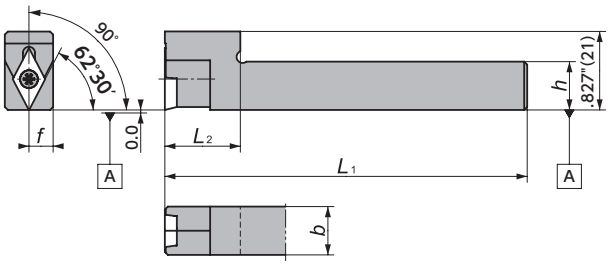
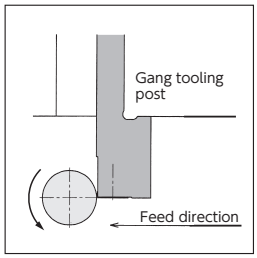
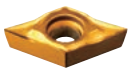


Figure-3



Takes Right-hand or Neutral insert

DC.. Series - Toolholders II



Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Th	Clamp Screw	Wrench
			N														
DC..21.5.. DC..21.5..WP	Y-SDJCR062-IN	1	●		3/8		3/8		4.724	120	0	0	.984	25	–	LRIS-2.5 × 7	CLR-15S
	Y-SDJCR082-IN	1	●		1/2		1/2		4.724	120	0	0	.984	25	–	LRIS-2.5 × 7	CLR-15S
	Y-SDJCR10-07S	1	○		.394	10.0	.394	10	4.724	120	0	0	.787	20	–	LRIS-2.5 × 7	CLR-15S
	Y-SDJCR12-07S	1	○		.472	12.0	.472	12	4.724	120	0	0	.787	20	–	LRIS-2.5 × 7	CLR-15S
DC..32.5.. DC..32.5..WP	Y-SDJCR083-IN	1	●		1/2		1/2		4.724	120	0	0	.984	25	–	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR103-IN	1	●		5/8		5/8		4.724	120	0	0	.984	25	–	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR10-11MS	2	○		.394	10.0	.394	10	4.724	120	0	0	.866	22	–	LRIS-2.5 × 7	CLR-15S
	Y-SDJCR10-11S	2	○		.394	10.0	.394	10	4.724	120	0	0	.787	20	–	LRIS-2.5 × 7	CLR-15S
	Y-SDJCR12-11MS	2	○		.472	12.0	.630	16	4.724	120	0	0	.866	22	–	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR12-11S	1	○		.472	12.0	.630	16	4.724	120	0	0	.787	20	–	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR16-11S	1	○		.630	16.0	.630	16	4.724	120	0	0	.787	20	–	LRIS-4 × 10	LLR-25S-20 × 65
DC..21.5.. DC..21.5..WP	Y-SDJCR062H-IN-OH	2	●		3/8		3/8		3.937	100	0	0	.984	25	M6 × 1	LRIS-2.5 × 7	CLR-15S
	Y-SDJCR082H-IN-OH	2	●		1/2		1/2		3.937	100	0	0	.984	25	NPT1/8	LRIS-2.5 × 7	CLR-15S
DC..32.5.. DC..32.5..WP	Y-SDJCR083H-IN-OH	2	●		1/2		1/2		3.937	100	0	0	.984	25	NPT1/8	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR103H-IN-OH	2	●		5/8		5/8		3.937	100	0	0	.984	25	NPT1/8	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR1212H11S-OH	2	●		.472	12.0	.472	12.0	3.937	100	0	0	.787	20	Rc1/8(PT1/8)	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDJCR1616H11-OH	2	○		.630	16.0	.630	16.0	3.937	100	0	0	.984	25	Rc1/8(PT1/8)	LRIS-4 × 10	LLR-25S-20 × 65
DC..32.5..	Y-SDNCN083-IN	3	●		1/2		1/2		4.724	120	1/4	6.35	.984	25	–	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDNCN12-11S	3	○		.472	12.0	.472	12	4.724	120	.236	6.0	.787	20	–	LRIS-4 × 10	LLR-25S-20 × 65
	Y-SDNCN16-11S	3	○		.630	16.0	.630	16	4.724	120	.315	8.0	.787	20	–	LRIS-4 × 10	LLR-25S-20 × 65

DS Toolholders for DC.. Inserts

DS-SDU

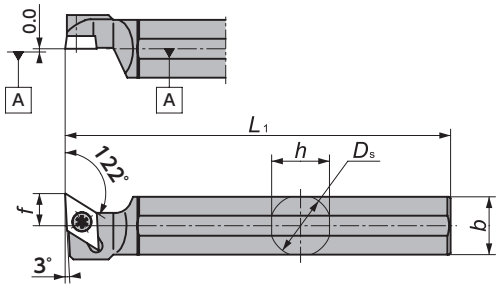
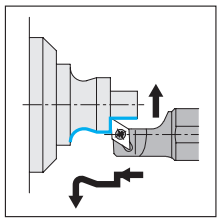


Figure-4



Left-Hand style shown
Takes Right-hand or Neutral insert

DS-SDU-ACH (Adjustable centerline height)

〈Parts〉

Shank	Wedge	Screw for Wedge
ϕ.630" (16)	ACH-W18 (5805601)	WS060415-003 (5795539)
ϕ3/4" (19.05)		
ϕ.787" (20)		WS060419-004 (5799226)
ϕ.866" (22)		
ϕ1" (25.4)	ACH-W24 (5805619)	

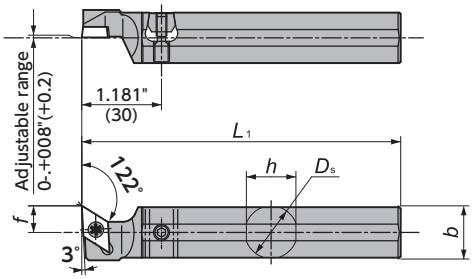
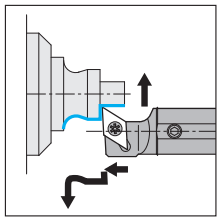


Figure-5



Left-Hand style shown
Takes Right-hand or Neutral insert

DS-SDX / DS-SDX (Coolant through)

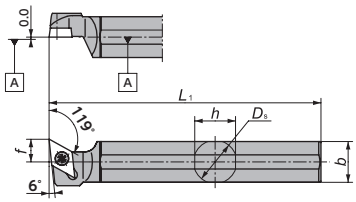
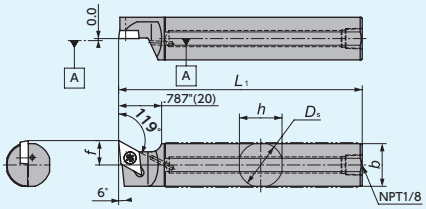
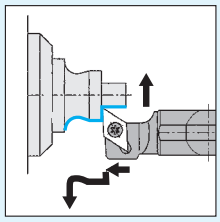


Figure-6

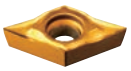
DS-SDXL22-11-006 (Coolant through)





Left-Hand style shown
Takes Right-hand or Neutral insert

DC.. Series - Toolholders Ⅲ



Gage Insert	Item Number	Figure	Stock R	Stock L	Ds (Inch)	Ds (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L1 (Inch)	L1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
DC..21.5.. DC..21.5..WP	DS-SDU□14F-07	4		○	.551	14.000	.512	13.0	.512	13.0	3.150	80	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU□15H-07	4		○	5/8	15.875	.591	15.0	.591	15.0	3.937	100	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU□16F-07	4		○	.630	16.000	.591	15.0	.591	15.0	3.150	80	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU□16X-07	4		○	.630	16.000	.591	15.0	.591	15.0	3.740	95	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU□19-07	4		○	3/4	19.050	.709	18.0	.709	18.0	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU□20X-07	4		○	.787	20.000	.748	19.0	.748	19.0	3.740	95	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU□20-07	4		●	.787	20.000	.748	19.0	.748	19.0	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
	DS-SDU□22-07	4		●	.866	22.000	.827	21.0	.827	21.0	4.724	120	.236	6.0	LRIS-2.5 × 7	CLR-15S
DC..32.5.. DC..32.5..WP	DS-SDU□14F-11	4		○	.551	14.000	.512	13.0	.512	13.0	3.150	80	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□16F-11	4		○	.630	16.000	.591	15.0	.591	15.0	3.150	80	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□19-11	4		●	3/4	19.050	.709	18.0	.709	18.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□19-11SPL	4		○	3/4	19.050	.709	18.0	.709	18.0	6.300	160	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□20X-11	4		○	.787	20.000	.748	19.0	.748	19.0	3.740	95	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□20-11	4		●	.787	20.000	.748	19.0	.748	19.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□22-11	4		●	.866	22.000	.827	21.0	.827	21.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□23-11-007	4		○	.906	23.000	.866	22.0	.866	22.0	2.756	70	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□25-11MET	4		●	.984	25.000	.945	24.0	.945	24.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□25-11	4		●	1	25.400	.945	24.0	.945	24.0	5.906	150	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□25-11SPL	4		○	1	25.400	.945	24.0	.945	24.0	5.906	150	.492	12.5	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□16F-11-ACH	5		●	.630	16.000	.610	15.5	.610	15.5	3.150	80	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□19-11-ACH	5		●	3/4	19.050	.709	18.0	.709	18.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□20-11-ACH	5		●	.787	20.000	.748	19.0	.748	19.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□22-11-ACH	5		●	.866	22.000	.827	21.0	.827	21.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□25-11MET-ACH	1		●	.984	25.000	.945	24.0	.945	24.0	5.906	150	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDU□25-11-ACH	5		●	1	25.400	.945	24.0	.945	24.0	5.906	150	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDX□22-11-006 💧	6		●	.866	22.000	.827	21.0	.827	21.0	4.724	120	.472	12.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDX□19-11	6		○	3/4	19.050	.709	18.0	.709	18.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDX□20X-11	6		○	.787	20.000	.748	19.0	.748	19.0	3.740	95	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDX□20-11	6		○	.787	20.000	.748	19.0	.748	19.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDX□25-11MET	6		○	.984	25.000	.945	24.0	.945	24.0	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-SDX□32-11	6		○	1.260	32.000	1.181	30.0	1.181	30.0	5.906	150	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65

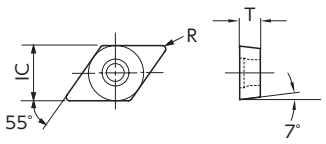
● : Stock ○ : 1-2 week delivery 💧 : Coolant through

Inserts ➡Q20 Cutting condition ➡Q4

DC.. inserts - Carbide / Cermet

(inch)	IC	T
DC..21.5	1/4	3/32
DC..32.5	3/8	5/32

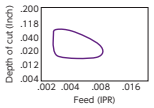
[Molded Chipbreakers]

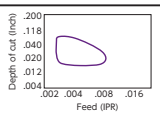


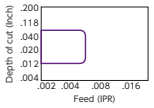
Steel	P	●
Stainless Steel	M	●
Cast Iron	K	●
Non-Ferrous Material	N	●
Heat Resistant Alloy	S	●
Hardened Material	H	●

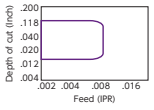
● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	Cermet PVD Coated Q15	C7Z
	DCGT 21.501 FNAM3	DCGT 070200 FNAM3	1/4	.001	●	●			○	○						
	DCGT 21.504M FNAM3	DCGT 070201 MFNAM3	1/4	.003	●	●										
	DCGT 21.504 FNAM3	DCGT 070201 FNAM3	1/4	.004					○	○						
	DCGT 21.504 FNAM3	DCGT 070201 FNXAM3	1/4	.004									●			
	DCGT 21.508M FNAM3	DCGT 070202 MFNAM3	1/4	.007	●	●										
	DCGT 21.508 AM3	DCGT 070202 ENBAM3	1/4	.008								●				
	DCGT 21.508 FNAM3	DCGT 070202 FNAM3	1/4	.008					○	○						
	DCGT 21.508 FNAM3	DCGT 070202 FNXAM3	1/4	.008									●			
	DCGT 21.51M FNAM3	DCGT 070204 MFNAM3	1/4	.015	●	●										
	DCGT 21.51 AM3	DCGT 070204 ENBAM3	1/4	.016								●				
	DCGT 21.51 FNAM3	DCGT 070204 FNAM3	1/4	.016					○	○						
	DCGT 21.51 FNAM3	DCGT 070204 FNXAM3	1/4	.016									●			
	DCGT 32.501 FNAM3	DCGT 11T300 FNAM3	3/8	.001	●	●		○	○	●						
	DCGT 32.504M FNAM3	DCGT 11T301 MFNAM3	3/8	.003	●	●		○	○	○						
	DCGT 32.504 FNAM3	DCGT 11T301 FNXAM3	3/8	.004									●			
	DCGT 32.508M FNAM3	DCGT 11T302 MFNAM3	3/8	.007	●	●		○	○	○						
	DCGT 32.508 AM3	DCGT 11T302 ENBAM3	3/8	.008									●			
	DCGT 32.508 FNAM3	DCGT 11T302 FNAM3	3/8	.008	●				○	●						
	DCGT 32.508 FNAM3	DCGT 11T302 FNXAM3	3/8	.008									●			
	DCGT 32.51M FNAM3	DCGT 11T304 MFNAM3	3/8	.015	●	●		○	○	○						
	DCGT 32.51 FNAM3	DCGT 11T304 FNAM3	3/8	.016	●				○	●						
	DCGT 32.51 FNAM3	DCGT 11T304 FNXAM3	3/8	.016									●			
	DCGT 32.52 FNAM3	DCGT 11T308 FNAM3	3/8	.031	●											
	DCGT 32.52 AM3	DCGT 11T308 ENBAM3	3/8	.031								●				
	DCGT 32.52 FNAM3	DCGT 11T308 FNXAM3	3/8	.031									●			
	DCMT 21.508 AM3	DCMT 070202 ENBAM3	1/4	.008									○			○
	DCMT 21.508 FNAM3	DCMT 070202 FNAM3	1/4	.008			○									
	DCMT 21.51 AM3	DCMT 070204 ENBAM3	1/4	.016									●	○		○
	DCMT 21.51 FNAM3	DCMT 070204 FNAM3	1/4	.016			○									
	DCMT 21.52 AM3	DCMT 070208 ENBAM3	1/4	.031										○		
	DCMT 32.508 AM3	DCMT 11T302 ENBAM3	3/8	.008									○			○
	DCMT 32.508 FNAM3	DCMT 11T302 FNAM3	3/8	.008			○									
	DCMT 32.51 AM3	DCMT 11T304 ENBAM3	3/8	.016									●	●		○
	DCMT 32.51 FNAM3	DCMT 11T304 FNAM3	3/8	.016			○									
	DCMT 32.52 AM3	DCMT 11T308 ENBAM3	3/8	.031									●	●		○
	DCMT 32.52 FNAM3	DCMT 11T308 FNAM3	3/8	.031			○									
	DCMT 32.53 AM3	DCMT 11T312 ENBAM3	3/8	.047									○			○
NEW wiper insert	DCGT 32.502 AM3-WP*	TFD 11FR05AM3	3/8	.002		●										
	DCGT 32.506 AM3-WP*	TFD 11FR15AM3	3/8	.006		●										
NEW	DCGT 32.504M YL	DCGT 11T301M YL	3/8	.005			●	○								
	DCGT 32.508M YL	DCGT 11T302M YL	3/8	.007			●	○								
	DCGT 32.51M YL	DCGT 11T304M YL	3/8	.015			●	○								
	DCGT 21.504M CL	DCGT 070201M CL	1/4	.003		●	○	○								
	DCGT 21.508M CL	DCGT 070202M CL	1/4	.007		●	○	○								
	DCGT 21.51M CL	DCGT 070204M CL	1/4	.015	●***	●	○	○								
	DCGT 32.504M CL	DCGT 11T301M CL	3/8	.003		●	○	●								
	DCGT 32.508M CL	DCGT 11T302M CL	3/8	.007	●***	●	○	●								
	DCGT 32.51M CL	DCGT 11T304M CL	3/8	.015	●***	●	○	●								

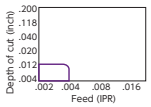
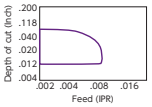
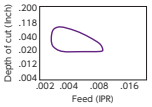
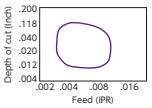
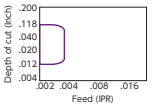




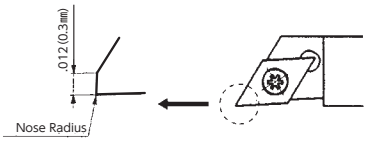




***To be released in November 2015.

Shape	Item Number	ISO Item Number	IC	R	Carbide							Cermet					
					PVD Coated										PVD Coated		
					QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z	
	DCGT 21.504M AMX	DCGT 070201M AMX	1/4	.003				●									
	DCGT 21.508M AMX	DCGT 070202M AMX	1/4	.007				●									
	DCGT 32.504M AMX	DCGT 11T301M AMX	3/8	.003			●	●									
	DCGT 32.508M AMX	DCGT 11T302M AMX	3/8	.007			●	●									
	DCGT 32.51M AMX	DCGT 11T304M AMX	3/8	.015			●	●									
	DCGT 21.501 AZ7**	DCGT 070200 AZ7	1/4	.001	○												
	DCGT 21.504M AZ7**	DCGT 070201M AZ7	1/4	.003	○												
	DCGT 21.508M AZ7**	DCGT 070202M AZ7	1/4	.007	○												
	DCGT 32.501 AZ7**	DCGT 11T300 AZ7	3/8	.001	●	○		○		○							
	DCGT 32.504M AZ7**	DCGT 11T301M AZ7	3/8	.003	●	○		○		○							
	DCGT 32.508M AZ7**	DCGT 11T302M AZ7	3/8	.007	●	○		○		○							
	DCGT 32.51M AZ7**	DCGT 11T304M AZ7	3/8	.015	●	○		○		○							
	DCGT 32.52 AZ7**	DCGT 11T308 AZ7	3/8	.031	●	○				○							
	DCGT 32.508 AF3	DCGT 11T302 ENBAF3	3/8	.008								●					
	DCGT 32.51 AF3	DCGT 11T304 ENBAF3	3/8	.016								●					
	DCGT 32.508 FM	DCGT 11T302 ENBFM	3/8	.008								○					
	DCGT 32.51 FM	DCGT 11T304 ENBFM	3/8	.016								○					
	DCGT 32.52 FM	DCGT 11T308 ENBFM	3/8	.031								●					
	DCMT 21.508 ENBZR	DCMT 070202 ENBZR	1/4	.008									○			○	
	DCMT 21.51 ENBZR	DCMT 070204 ENBZR	1/4	.016									○			○	
	DCMT 32.508 ENBZR	DCMT 11T302 ENBZR	3/8	.008									○			○	
	DCMT 32.51 ENBZR	DCMT 11T304 ENBZR	3/8	.016									○			○	
	DCMT 32.52 ENBZR	DCMT 11T308 ENBZR	3/8	.031									○			○	

**To be replaced by version which has 0.2mm higher edge.



*Note: NTK WP style inserts have a wiper facet design.
The insert has a 0.3mm (.012") flat on the cutting edge when the insert is set into the toolholder.
The flat on the cutting edge ensures a superior surface finish when feed rates are increased.
WP style inserts can be used in toolholders: SDJC, CH-SDUC and DS-SDUL.

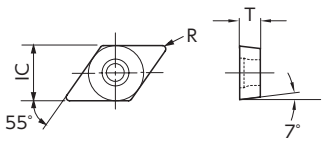
● : Stock ○ : 1-2 week delivery

Holders ➡Q16-19
Cutting condition ➡Q4
Chipbreaker ➡P21

DC.. inserts - Carbide / Cermet

[Ground Chipbreakers]

(inch)	IC	T
DC..21.5	1/4	3/32
DC..32.5	3/8	5/32

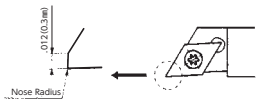


Steel	P	●
Stainless Steel	M	●
Cast Iron	K	●
Non-Ferrous Material	N	●
Heat Resistant Alloy	S	●
Hardened Material	H	●

● : 1st Choice
● : Alternate choice

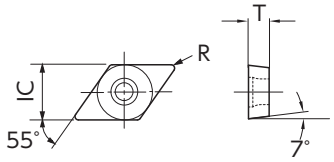
Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	PVD Coated Q15	C7Z
	DCGT 21.501 R/L S	DCGT 070200 R/L S	1/4	.001	R				Ⓡ Ⓛ	R Ⓛ						
	DCGT 21.504M R/L S	DCGT 070201M R/L S	1/4	.003	R	R										
	DCGT 21.504 R/L S	DCGT 070201 R/L S	1/4	.004					R Ⓛ	R Ⓛ			Ⓡ			
	DCGT 21.508M R/L S	DCGT 070202M R/L S	1/4	.007	R	R										
	DCGT 21.508 R/L S	DCGT 070202 R/L S	1/4	.008					Ⓡ Ⓛ	R Ⓛ			Ⓡ Ⓛ			
	DCGT 21.51 R/L S	DCGT 070204 R/L S	1/4	.016	R				Ⓡ							
	DCGT 32.501 R/L S	DCGT 11T300 R/L S	3/8	.001	R	R		R	Ⓡ Ⓛ	R						
	DCGT 32.504M R/L S	DCGT 11T301M R/L S	3/8	.003	R	R		R								
	DCGT 32.504 R/L S	DCGT 11T301 R/L S	3/8	.004	Ⓡ				Ⓡ Ⓛ	R						
	DCGT 32.508M R/L S	DCGT 11T302M R/L S	3/8	.007	Ⓡ	R		Ⓡ								
	DCGT 32.508 R/L S	DCGT 11T302 R/L S	3/8	.008	R				Ⓡ Ⓛ	R						
	DCGT 32.51M R/L S	DCGT 11T304M R/L S	3/8	.015	Ⓡ			R								
	DCGT 32.51 R/L S	DCGT 11T304 R/L S	3/8	.016	R											
	DCMT 21.504 TR/L AS	DCMT 070201 TR/L AS	1/4	.004									Ⓡ Ⓛ			Ⓡ Ⓛ
	DCMT 21.508 TR/L AS	DCMT 070202 TR/L AS	1/4	.008									Ⓡ Ⓛ			Ⓡ Ⓛ
	DCMT 21.51 TR/L AS	DCMT 070204 TR/L AS	1/4	.016									Ⓡ Ⓛ			Ⓡ Ⓛ
	DCMT 32.504 TR/L AS	DCMT 11T301 TR/L AS	3/8	.004									Ⓡ Ⓛ			Ⓡ Ⓛ
	DCMT 32.508 TR/L AS	DCMT 11T302 TR/L AS	3/8	.008									Ⓡ Ⓛ			Ⓡ Ⓛ
	DCMT 32.51 TR/L AS	DCMT 11T304 TR/L AS	3/8	.016									Ⓡ Ⓛ			Ⓡ Ⓛ
wiper insert	DCGT 21.502 R/L S-WP*	TFD 07FR/L 05	1/4	.002	R				Ⓡ	Ⓡ Ⓛ						
	DCGT 21.506 R/L S-WP*	TFD 07FR/L 15	1/4	.006	R					Ⓡ Ⓛ						
	DCGT 32.502 R/L S-WP*	TFD 11FR/L 05	3/8	.002	R				Ⓡ	Ⓡ						
	DCGT 32.506 R/L S-WP*	TFD 11FR/L 15	3/8	.006	R					Ⓡ						
	DCGT 21.501 R/L U	DCGT 070200 R/L U	1/4	.001					Ⓡ	Ⓡ						
	DCGT 21.504 R/L U	DCGT 070201 R/L U	1/4	.004					Ⓡ	Ⓡ						
	DCGT 21.508 R/L U	DCGT 070202 R/L U	1/4	.008					Ⓡ	Ⓡ Ⓛ						
	DCGT 32.501 R/L U1	DCGT 11T300 R/L U1	3/8	.001				Ⓡ	Ⓡ	Ⓡ Ⓛ						
	DCGT 32.504 R/L U1	DCGT 11T301 R/L U1	3/8	.004		Ⓡ		Ⓡ	Ⓡ	Ⓡ Ⓛ						
	DCGT 32.508 R/L U1	DCGT 11T302 R/L U1	3/8	.008		Ⓡ		Ⓡ	Ⓡ	Ⓡ Ⓛ						
	DCGT 32.51 R/L U1	DCGT 11T304 R/L U1	3/8	.016				Ⓡ	Ⓡ	Ⓡ Ⓛ						
wiper insert	DCGT 21.502 R/L U-WP*	TFD 07FR/L 05U	1/4	.002	Ⓡ				Ⓡ	Ⓡ						
	DCGT 21.506 R/L U-WP*	TFD 07FR/L 15U	1/4	.006	Ⓡ					Ⓡ						
	DCGT 32.502 R/L U1-WP*	TFD 11FR/L 05U1	3/8	.002	Ⓡ				Ⓡ	Ⓡ						
	DCGT 32.506 R/L U1-WP*	TFD 11FR/L 15U1	3/8	.006	Ⓡ					Ⓡ						
	DCET 21.502 R/L KHG	DCET 0702005 R/L KHG	1/4	.002					Ⓡ Ⓛ							
	DCET 21.503 R/L KHG	DCET 0702008 R/L KHG	1/4	.003					Ⓡ Ⓛ							
	DCET 21.507 R/L KHG	DCET 0702018 R/L KHG	1/4	.007					Ⓡ Ⓛ							
	DCET 21.508 R/L KHG	DCET 070202 R/L KHG	1/4	.008					Ⓡ Ⓛ							
	DCET 32.502 R/L KHG	DCET 11T3005 R/L KHG	3/8	.002				Ⓡ	Ⓡ Ⓛ							
	DCET 32.503 R/L KHG	DCET 11T3008 R/L KHG	3/8	.003				Ⓡ	Ⓡ Ⓛ							
	DCET 32.507 R/L KHG	DCET 11T3018 R/L KHG	3/8	.007				Ⓡ	Ⓡ Ⓛ							
	DCET 32.508 R/L KHG	DCET 11T302 R/L KHG	3/8	.008				Ⓡ	Ⓡ Ⓛ							
	DCET 21.503 UHG	DCET 0702008 R/L UHG	1/4	.003					Ⓡ							
	DCET 32.503 UHG	DCET 11T3008 R/L UHG	3/8	.003					Ⓡ							

Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	PVD Coated Q15	C7Z	
	DCGW 21.500 V Ⓜ	DCGW 07020 V	1/4	0					○								—
	DCGW 21.501 FN	DCGW 070200 FN	1/4	.001						○							
	DCGW 21.501 H Ⓜ	DCGW 070200 H	1/4	.001							●						
	DCGW 21.504 FN	DCGW 070201 FN	1/4	.004						○							
	DCGW 21.504 H Ⓜ	DCGW 070201 H	1/4	.004							●						
	DCGW 21.508 H Ⓜ	DCGW 070202 H	1/4	.008							●						
	DCGW 32.500 V Ⓜ	DCGW 11T30 V	3/8	0					○								
	DCGW 32.501 FN	DCGW 11T300 FN	3/8	.001						○							
	DCGW 32.501 H Ⓜ	DCGW 11T300 H	3/8	.001							●						
	DCGW 32.504 FN	DCGW 11T301 FN	3/8	.004						○							
	DCGW 32.504 H Ⓜ	DCGW 11T301 H	3/8	.004							●						
	DCGW 32.508 H Ⓜ	DCGW 11T302 H	3/8	.008							●						
 wiper insert	DCGW 21.502RH-WP* Ⓜ	TFD 07FR05H	1/4	.002							○						—
	DCGW 32.502RH-WP* Ⓜ	TFD 11FR05H	3/8	.006							○						

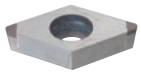
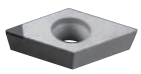
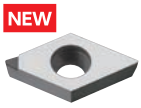


*Note: NTK WP style inserts have a wiper facet design.
The insert has a 0.3mm (.012") flat on the cutting edge when the insert is set into the toolholder.
The flat on the cutting edge ensures a superior surface finish when feed rates are increased.
WP style inserts can be used in toolholders: SDJC, CH-SDUC and DS-SDUL.

DC.. Inserts - CBN / PCD



Steel	P	
Stainless Steel	M	
Cast Iron	K	● ● ● ●
Non-Ferrous Material	N	● ●
Heat Resistant Alloy	S	
Hardened Material	H	● ● ● ● ●

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	CBN (Brazed) Coated B5K	B52	Coated B6K	B36	B40	B23	B30	PCD PD1	PD2
	DCGW 21.508 PD	DCGW 070202 PD	S0415	1/4	.008	2	.094		●							
	DCGW 21.51 PD	DCGW 070204 PD	S0415	1/4	.016	2	.087		●							
	DCGW 21.51 PD	DCGW 070204 PD	S0635	1/4	.016	2	.087					●				
	DCGW 21.52 PD	DCGW 070208 PD	S0415	1/4	.031	2	.075		●							
	DCGW 32.508 PD	DCGW 11T302 PD	S0415	3/8	.008	2	.094	●	●							
	DCGW 32.508 PD	DCGW 11T302 PD	S0635	3/8	.008	2	.094					●				
	DCGW 32.51 PD	DCGW 11T304 PD	S0415	3/8	.016	2	.087	●	●							
	DCGW 32.51 PD	DCGW 11T304 PD	S0635	3/8	.016	2	.087					●				
	DCGW 32.52 PD	DCGW 11T308 PD	S0415	3/8	.031	2	.075		●							
	DCGW 32.52 PD	DCGW 11T308 PD	S0635	3/8	.031	2	.075					●				
	DCMW 32.504	DCMW 11T301	None	3/8	.004	1	–								○	
	DCMW 32.508	DCMW 11T302	None	3/8	.008	1	–								○	
	DCMW 32.51	DCMW 11T304	None	3/8	.016	1	–								○	
	DCMW 32.52	DCMW 11T308	None	3/8	.031	1	–								○	
NEW  with chipbreaker	DCMT 32.508 PF	DCMT 11T302 PF	None	3/8	.008	1	–									●
	DCMT 32.51 PF	DCMT 11T304 PF	None	3/8	.016	1	–									●

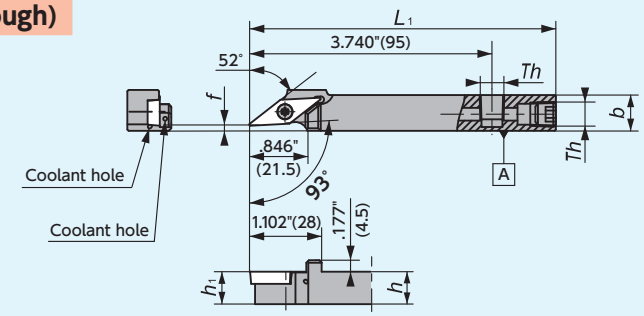
● : Stock ○ : 1-2 week delivery
R : Stock (Right-hand only) L : Stock (Left-hand only)
Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only) Ⓜ : Mirror finish

Holders ➡Q16-19
Cutting condition ➡Q4
Chipbreaker ➡P21

Toolholders for VB.. Inserts

SVJB-OH (Coolant through)

NEW



Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: Rc1/8 (PT1/8)

Figure-1

● Left-Hand coolant through holders are designed for Right-Hand machines

Right-Hand style shown

■VBGT33

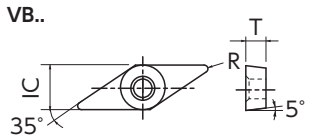
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h1 (Inch)	h1 (mm)	L1 (Inch)	L1 (mm)	f (Inch)	f (mm)	g (Inch)	g (mm)	Th	Clamp Screw	Wrench
 VBGT33..	SVJB☒083C-F079-OH	1	●	●	1/2		.551	14	1/2		4.724	120	.079	2	.079	2	NPT1/8	LRIS-4 × 10	LLR-25S
	SVJB☒103C-F079-OH	1	●	●	5/8		5/8		5/8		4.724	120	.079	2	0	0	NPT1/8	LRIS-4 × 10	LLR-25S
	SVJB☒1214-X16N-F02OH	1	●	●	.472	12	.551	14	.472	12	4.724	120	.079	2	.079	2	Rc1/8(PT1/8)	LRIS-4 × 10	LLR-25S
	SVJB☒1616-X16N-F02OH	1	●	●	.630	16	.630	16	.630	16	4.724	120	.079	2	0	0	Rc1/8(PT1/8)	LRIS-4 × 10	LLR-25S

● Left-Hand coolant through holders are designed for Right-Hand machines

VB.. inserts - Carbide / Cermet

[Molded Chipbreaker]

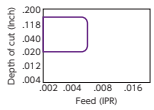
(inch)	IC	T
VB33	3/8	3/16



		Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	Cermet PVD Coated Q15	C7Z
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●
Cast Iron	K								●	●		●	●
Non-Ferrous Material	N				●	●	●	●	●	●			●
Heat Resistant Alloy	S	●	●	●	●								
Hardened Material	H	●	●	●									

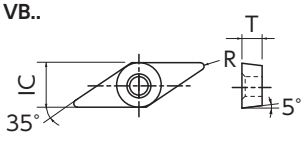
● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R
NEW 	VBGT 3308 FNYL*	VBGT 160402 YL	3/8	.008
	VBGT 331 FNYL	VBGT 160404 YL	3/8	.016
	VBGT 332 FNYL*	VBGT 160408 YL	3/8	.031

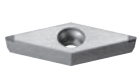


*To be released in August 2015.

VB.. inserts - CBN / PCD

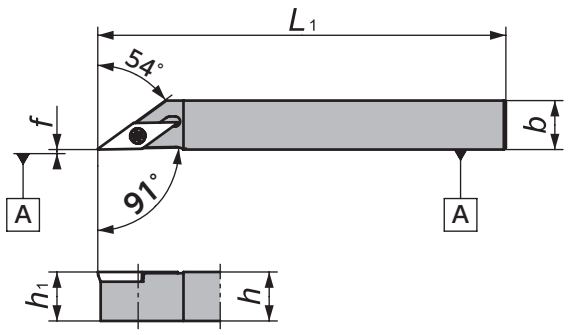


		CBN (Brazed) Coated B5K	B52	Coated B6K	B36	B40	B23	B30	PCD PD1	PD2
Steel	P									
Stainless Steel	M									
Cast Iron	K	●	●				●	●		
Non-Ferrous Material	N								●	●
Heat Resistant Alloy	S									
Hardened Material	H	●	●	●	●	●				

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge
	VBGW 332 PD	VBGW 160408 PD	S0415	3/8	.031	2	.063

Toolholders for VC.. Inserts

SVAC-N-1L



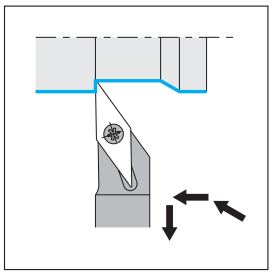


Figure-1

Right-Hand style shown

■SVAC-N

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 VCGT21.508	**SVAC※1010X11N-1L**	1	○	○	.394	10	.394	10	.394	10	4.724	120	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	SVAC※1212X11N-1L	1	○	○	.472	12	.472	12	.472	12	4.724	120	0.0	0.0	LR1S-2.5 × 7	RLR-20S

■SVAC-N

Shape	Item Number	ISO Item Number	IC (Inch)	IC (mm)	T (Inch)	T (mm)	R (Inch)	R (mm)	Coated Carbide QM3	Coated Carbide DT4	Coated Carbide DM4	Coated Carbide TM4
	**VCGT21.508MCL**	**VCGT110202MCL**	1/4	6.35	3/32	2.38	.007	0.18	○*	○	○	○

*To be released in November 2015.

Toolholders for VC.. Inserts

SVAC-N

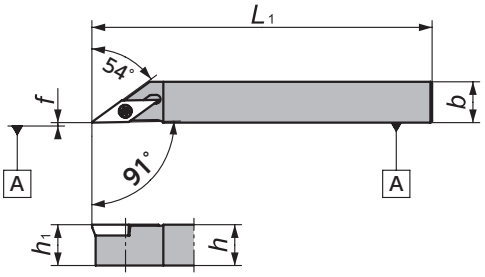
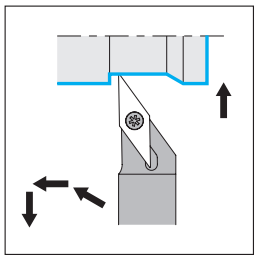


Figure-1



Right-Hand style shown

SVJC

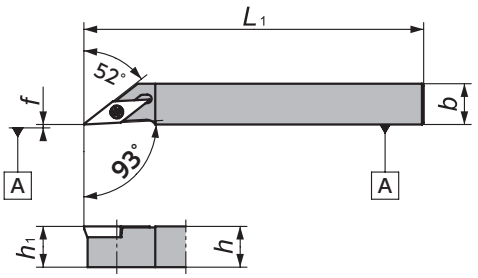
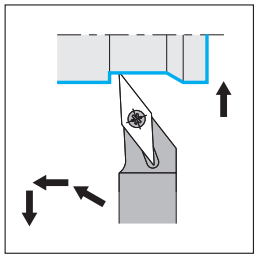


Figure-2



Right-Hand style shown

SVJC-OH (Coolant through)

NEW

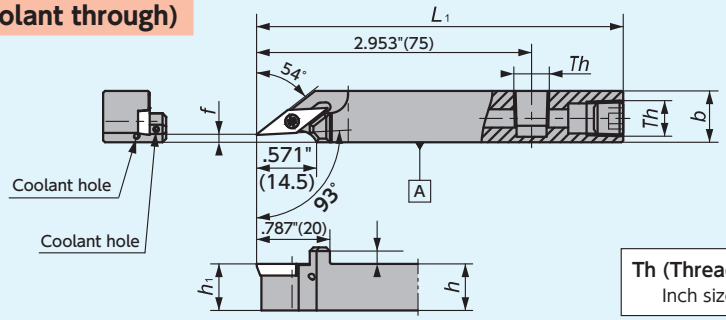
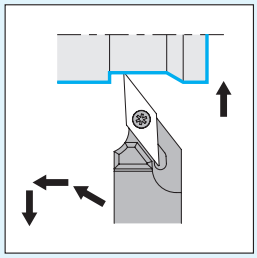


Figure-3

Th (Thread type)
Inch size holder: NPT1/8



Right-Hand style shown

SVJC-F (Shifted)

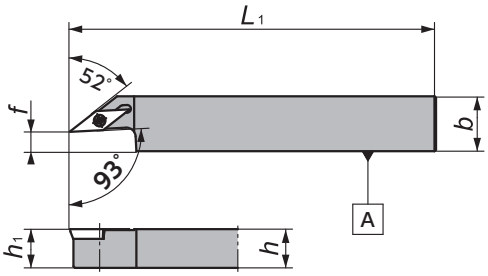
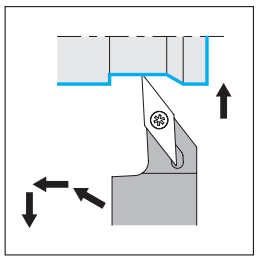


Figure-4



Right-Hand style shown

SVXC-N

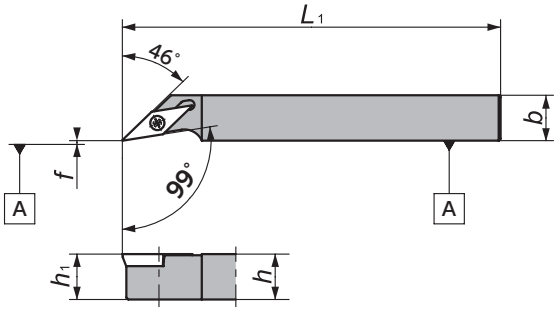
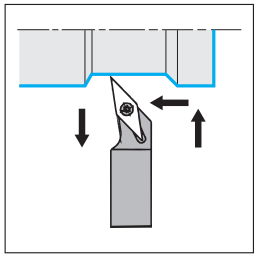
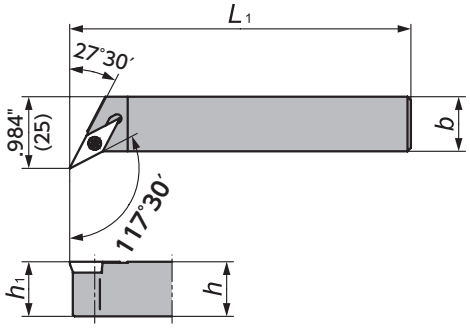


Figure-5



Right-Hand style shown

SVQC



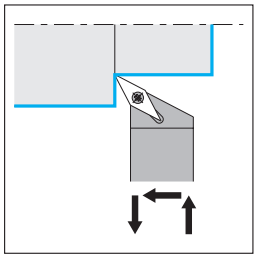


Figure-6

Right-Hand style shown

SVVC-N

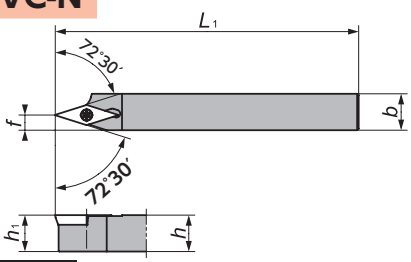


Figure-7

Right-Hand style shown

SVVC-N

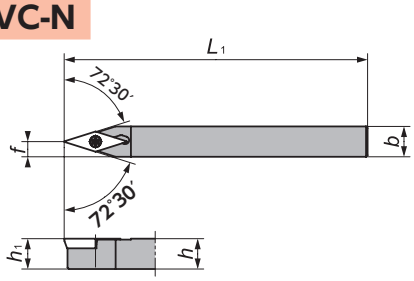
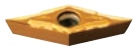


Figure-8

VC.. Series - Toolholders I



Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Th	Clamp Screw	Wrench
			N	N													
VC..22 VC..22-WP	SVAC□1/16-0808X11N	1	●	●	.315	8	.315	8	.315	8	4.724	120	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
	SVAC□1/16-1010X11N	1	○	○	.394	10	.394	10	.394	10	4.724	120	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
	SVAC□1/16-1212X11N	1	○	○	.472	12	.472	12	.472	12	4.724	120	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
	SVAC□1/16-1616X11N	1	○		.630	16	.630	16	.630	16	4.724	120	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
VC..22	SVJC□1/16-062C	4	●	●	3/8		3/8		3/8		4.724	120	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
	SVJC□1/16-082C	4	●	●	1/2		1/2		1/2		4.724	120	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
	SVJC□1/16-102C	4	●	●	5/8		5/8		5/8		4.724	120	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
	SVJC□1/16-0808H11N	2	○		.315	8	.315	8	.315	8	3.937	100	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
	SVJC□1/16-1010X11N	2	○	○	.394	10	.394	10	.394	10	4.724	120	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
	SVJC□1/16-1212X11N	2	●	○	.472	12	.472	12	.472	12	4.724	120	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
	SVJC□1/16-1616X11N	2	○	○	.630	16	.630	16	.630	16	4.724	120	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
VC..22	SVJC□1/16-082H-F079-OH 💧	3	●		1/2		.551	14	1/2		3.937	100	.079	2.0	NPT1/8	LRIS-2.5 × 7	CLR-15S
	SVJC□1/16-102H-F079-OH 💧	3	●		5/8		5/8		5/8		3.937	100	.079	2.0	NPT1/8	LRIS-2.5 × 7	CLR-15S
VC..22	SVJC□1/16-082C-F250	4	●		1/2		1/2		.709	18	4.724	120	1/4		–	LRIS-2.5 × 7	CLR-15S
	SVJC□1/16-082C-F500	4	●		1/2		1/2		.984	25	4.724	120	1/2		–	LRIS-2.5 × 7	CLR-15S
VC..22	SVXC□1/16-1210X11N	5	○	○	.394	10	.472	12	.394	10	4.724	120	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
	SVXC□1/16-1212X11N	5	○		.472	12	.472	12	.472	12	4.724	120	0.0	0.0	–	LRIS-2.5 × 7	CLR-15S
VC..22	SVQC□1/16-20-X11	6	○		.787	20	.787	20	.787	20	4.724	120	–	–	–	LRIS-2.5 × 7	CLR-15S
VC..22	SVVC□1/16-1212X11N	7	●		.472	12	.472	12	.472	12	4.724	120	.197	5	–	LRIS-2.5 × 7	CLR-15S
	SVVC□1/16-1616X11N	7	○		.630	16	.630	16	.630	16	4.724	120	.197	5	–	LRIS-2.5 × 7	CLR-15S
	SVVCN0808H11N	8	○		.315	8	.315	8	.315	8	3.937	100	.157	4	–	LRIS-2.5 × 7	CLR-15S
	SVVCN1010X11N	8	○		.394	10	.394	10	.394	10	4.724	120	.197	5	–	LRIS-2.5 × 7	CLR-15S
	SVVCN20-X11	8	○		.787	20	.787	20	.787	20	4.724	120	.394	10	–	LRIS-2.5 × 7	CLR-15S

● : Stock ○ : 1-2 week delivery 💧 : Coolant through

Inserts ➡Q29 Cutting condition ➡Q4

Y-axis Toolholders for VC.. Inserts

Y-SVJCR

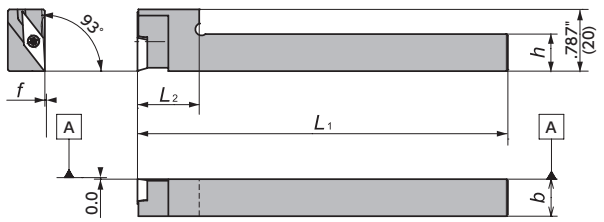


Figure-1

Right-Hand style shown
Takes Right-hand or Neutral insert

Y-SVJCR-OH (Coolant through)

NEW

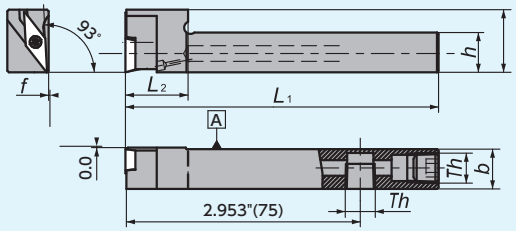


Figure-2

Th (Thread type)
Inch size holder: NPT1/8

Right-Hand style shown
Takes Right-hand or Neutral insert

VC.. Series - Toolholders Ⅱ



Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Th	Clamp Screw	Wrench
VC..22..	Y-SVJCR062-IN	1	●		3/8	3/8	4.724	120	0.0	0.0	.787	20	–		LRIS-2.5 × 7	CLR-15S
	Y-SVJCR082-IN	1	●		1/2	1/2	4.724	120	0.0	0.0	.787	20	–		LRIS-2.5 × 7	CLR-15S
	Y-SVJCR102-IN	1	●		5/8	5/8	4.724	120	0.0	0.0	.984	25	–		LRIS-2.5 × 7	CLR-15S
VC..22..	Y-SVJCR082HS-IN-OH	2	●		1/2	1/2	3.937	100	0.0	0.0	.787	20	NPT1/8		LRIS-2.5 × 7	CLR-15S
	Y-SVJCR102H-IN-OH	2	●		5/8	5/8	3.937	100	0.0	0.0	.984	25	NPT1/8		LRIS-2.5 × 7	CLR-15S

DS Toolholders for VC.. Inserts

DS-SVX

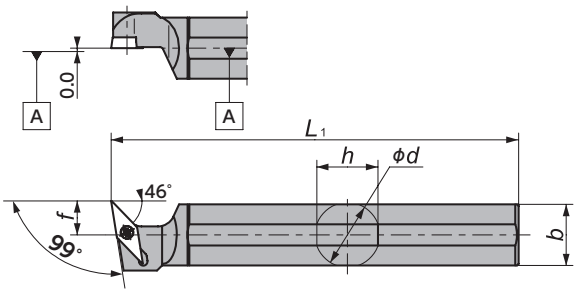
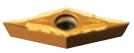


Figure-3

Left-Hand style shown
Takes Right-hand or Neutral insert

VC.. Series - Toolholders Ⅲ



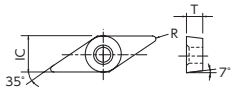
Gage Insert	Item Number	Figure	Stock R	Stock L	ϕ d (Inch)	ϕ d (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
VC..22..	DS-SVXR/L14F-11	3		○	.551	14.000	.512	13	.512	13	3.150	80	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L15H-11	3		○	5/8	15.875	.591	15	.591	15	3.937	100	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L16F-11	3		●	.630	16.000	.591	15	.591	15	3.150	80	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L19-11	3		●	3/4	19.050	.709	18	.709	18	4.724	120	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L19-11SPL	3		○	3/4	19.050	.709	18	.709	18	6.299	160	.433	11.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L20X-11	3		○	.787	20.000	.748	19	.748	19	3.740	95	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L20-11	3		●	.787	20.000	.748	19	.748	19	4.724	120	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L22-11	3		●	.866	22.000	.827	21	.827	21	4.724	120	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L25-11MET	3		○	.984	25.000	.945	24	.945	24	5.906	150	.394	10.0	LRIS-2.5 × 7	CLR-15S
	DS-SVXR/L25-11	3		●	1	25.400	.945	24	.945	24	5.906	150	.394	10.0	LRIS-2.5 × 7	CLR-15S

● : Stock ○ : 1-2 week delivery ■ : While stock lasts R : Stock (Right-hand only) L : Stock (Left-hand only)
Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only) Ⓜ : Mirror finish : Coolant through

Cutting condition ➡Q4
Chipbreaker ➡P21

VC.. Inserts - Carbide / Cermet

(inch)	IC	T
VC..22	1/4	1/8



VC_ _

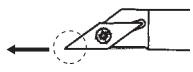
Steel	P	●
Stainless Steel	M	●
Cast Iron	K	●
Non-Ferrous Material	N	●
Heat Resistant Alloy	S	●
Hardened Material	H	●

● : 1st Choice
● : Alternate choice

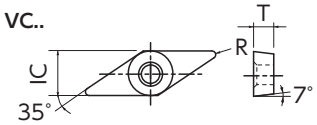
Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	Cermet PVD Coated Q15	C7Z
	VCGT 2201 FNAM3	VCGT 110300 FNAM3	1/4	.001	●	●			●	■						
	VCGT 2204M FNAM3	VCGT 110301M FNAM3	1/4	.003	●	●		○	○							
	VCGT 2204 FNAM3	VCGT 110301 FNAM3	1/4	.004					●	○						
	VCGT 2208M FNAM3	VCGT 110302M FNAM3	1/4	.007	●	●		○	○							
	VCGT 2208 FNAM3	VCGT 110302 FNAM3	1/4	.008					●	○						
	VCGT 2208 FNAM3	VCGT 110302 FNXAM3	1/4	.008									○			
	VCGT 221M FNAM3	VCGT 110304M FNAM3	1/4	.015	●	●		○								
	VCGT 221 FNAM3	VCGT 110304 FNAM3	1/4	.016									○			
	VCMT 2208 FNAM3	VCGT 110302 FNAM3	1/4	.008			○									
	VCMT 221 FNAM3	VCGT 110304 FNAM3	1/4	.016			○									
NEW 	VCGT 2204M YL	VCGT 110301M YL	1/4	.003			●	○								
	VCGT 2208M YL	VCGT 110302M YL	1/4	.007			●	○								
	VCGT 221M YL	VCGT 110304M YL	1/4	.015			●	○								
	VCGT 2204M CL	VCGT 110301M CL	1/4	.003		●	○	●								
	VCGT 2208M CL	VCGT 110302M CL	1/4	.007		●	○	●								
	VCGT 2201 AZ7**	VCGT 110300 AZ7	1/4	.001	●					○						
	VCGT 2204M AZ7**	VCGT 110301M AZ7	1/4	.003	●					○						
	VCGT 2208M AZ7**	VCGT 110302M AZ7	1/4	.007	●					○						
	VCGT 221M AZ7**	VCGT 110304M AZ7	1/4	.015	●					○						
	VCMT 2204 T℁AS	VCMT 110301 T℁AS	1/4	.004									Ⓡ Ⓛ			Ⓡ Ⓛ
	VCMT 2208 T℁AS	VCMT 110302 T℁AS	1/4	.008									Ⓡ Ⓛ			Ⓡ Ⓛ
	VCMT 221 T℁AS	VCMT 110304 T℁AS	1/4	.016									Ⓡ Ⓛ			Ⓡ Ⓛ
 wiper insert	VCGT 2202 ℁S-WP*	TFV 11F℁05SX	1/4	.002					R	Ⓡ						
	VCGT 2204 ℁S-WP*	TFV 11F℁10SX	1/4	.004					R	Ⓡ						
	VCGT 2201 ℁U	VCGT 110300 ℁U	1/4	.001					Ⓡ	Ⓡ						
	VCGT 2204M ℁U	VCGT 110301M ℁U	1/4	.003		Ⓡ										
	VCGT 2204 ℁U	VCGT 110301 ℁U	1/4	.004					Ⓡ	Ⓡ						
	VCGT 2208M ℁U	VCGT 110302M ℁U	1/4	.007		Ⓡ										
	VCGT 2208 ℁U	VCGT 110302 ℁U	1/4	.008					Ⓡ	Ⓡ						
 wiper insert	VCGT 2202 ℁U-WP*	TFV 11F℁05U	1/4	.002					Ⓡ	Ⓡ						
	VCGT 2204 ℁U-WP*	TFV 11F℁10U	1/4	.004					Ⓡ	Ⓡ						
	VCET 2203 ℁UHG	VCET 1103008 ℁UHG	1/4	.003					Ⓡ							
	VCGW 2201 H Ⓜ	VCGW 110300 H	1/4	.001							●					
	VCGW 2204 H Ⓜ	VCGW 110301 H	1/4	.004							●					
	VCGW 2208 H Ⓜ	VCGW 110302 H	1/4	.008							●					

**To be replaced by version which has 0.2mm higher edge.

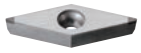
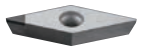




*Note: NTK WP style inserts have a wiper facet design.
The insert has a 0.2mm (.008") flat on the cutting edge when the insert is set into the toolholder.
The flat on the cutting edge ensures a superior surface finish when feed rates are increased.
WP style inserts can be used in toolholders: SVAC



Steel	P	
Stainless Steel	M	
Cast Iron	K	●
Non-Ferrous Material	N	
Heat Resistant Alloy	S	
Hardened Material	H	●

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	CBN (Brazed) Coated B5K	B52	Coated B6K	B36	B40	B23	B30	PCD PD1	PD2
	VCGW 221 PD	VCGW 110304 PD	S0415	1/4	.016	2	.098		○							
	VCGW 221 PD	VCGW 110304 PD	S0635	1/4	.016	2	.098					○				
	VCGW 222 PD	VCGW 110308 PD	S0415	1/4	.031	2	.063		○							
	VCGW 222 PD	VCGW 110308 PD	S0635	1/4	.031	2	.063					○				
	VCMW 2204	VCMW 110301	None	1/4	.004	1	–								○	
	VCMW 2208	VCMW 110302	None	1/4	.008	1	–								○	
	VCMW 221	VCMW 110304	None	1/4	.016	1	–								○	

Toolholders VP..08 Inserts

SVQP-N

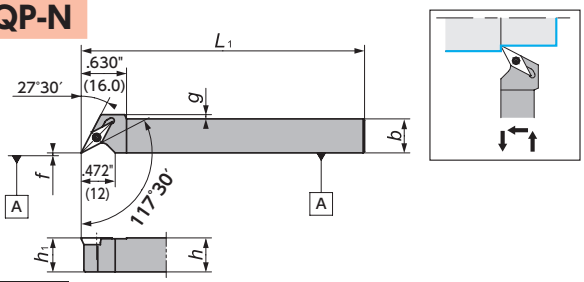


Figure-1

Right-Hand style shown

CH-SVUP

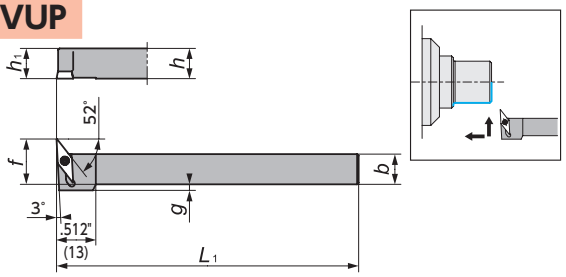
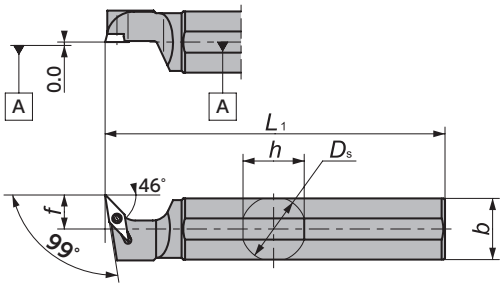


Figure-2

Left-Hand style shown
Takes Right-hand or Neutral insert

DS-SVXP



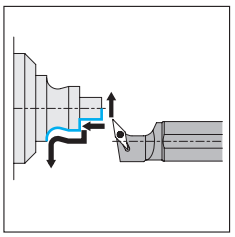


Figure-3

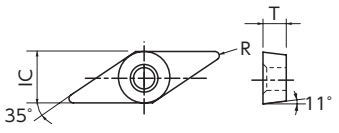
Left-Hand style shown
Takes Right-hand or Neutral insert

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h1 (Inch)	h1 (mm)	L1 (Inch)	L1 (mm)	f (Inch)	f (mm)	g (Inch)	g (mm)	Clamp Screw	Wrench
 VP..0802	SVQP□1010X08N	1	○	○	.394	10	.394	10	.394	10	4.724	120	0.0	0.0	.138	3.5	LRIS-2 × 6	CLR-13S
	SVQP□1212X08N	1	○	○	.472	12	.472	12	.394	10	4.724	120	0.0	0.0	.059	1.5	LRIS-2 × 6	CLR-13S
	SVQP□1616X08N	1	○	○	.630	16	.630	16	.394	10	4.724	120	0.0	0.0	0	0	LRIS-2 × 6	CLR-13S
	CH-SVUP□1010H08	2		○	.394	10	.394	10	.394	10	3.937	100	.591	15	.079	2	LRIS-2 × 6	CLR-13S
	CH-SVUP□1212H08	2		○	.472	12	.472	12	.472	12	3.937	100	.669	17	0	0	LRIS-2 × 6	CLR-13S

Gage Insert	Item Number	Figure	Stock R	Stock L	Ds (Inch)	Ds (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L1 (Inch)	L1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 VP..0802	DS-SVXP□19-08	3		○	3/4	19.050	.709	18	.709	18	4.724	120	.394	10	LRIS-2 × 6	CLR-13S
	DS-SVXP□20-08	3		○	.787	20.000	.748	19	.748	19	4.724	120	.394	10	LRIS-2 × 6	CLR-13S
	DS-SVXP□22-08	3		○	.866	22.000	.827	21	.827	21	4.724	120	.394	10	LRIS-2 × 6	CLR-13S
	DS-SVXP□25-08	3		○	1	25.400	.945	24	.945	24	5.906	150	.394	10	LRIS-2 × 6	CLR-13S

VP.. Inserts - Carbide / Cermet

(inch)	IC	T
VP..08	3/16	3/32



VP__

		Carbide QM3	Carbide DT4	Carbide DM4	Carbide TM4	Carbide VM1	Carbide ZM3	Carbide KM1	Cermet XT3	Cermet C7X	Cermet XN4	Cermet Q15	Cermet C7Z
					PVD Coated							PVD Coated	
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●
Cast Iron	K								●	●		●	●
Non-Ferrous Material	N				●	●	●	●	●	●			●
Heat Resistant Alloy	S	●	●	●	●								
Hardened Material	H	●	●	●									

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
	VPET 0802005 □KHG	VPET 0802005 □KHG	.187	.002				Ⓡ	ⓇⓁ							
	VPET 0802008 □KHG	VPET 0802008 □KHG	.187	.003		Ⓡ		Ⓡ	ⓇⓁ							
	VPET 0802018 □KHG	VPET 0802018 □KHG	.187	.007				Ⓡ	ⓇⓁ							
	VPET 080202 □KHG	VPET 080202 □KHG	.187	.008				Ⓡ	ⓇⓁ							
	VPET 0802008 □UHG	VPET 0802008 □UHG	.187	.003		ⓇⓁ										

Toolholders for VP..22 Inserts

SVXP-N

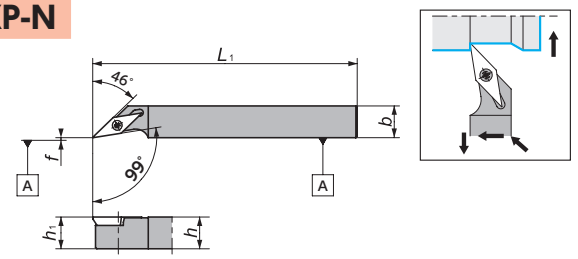


Figure-1

Right-Hand style shown

DS-SVVP

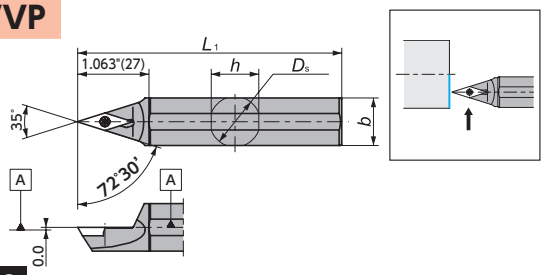


Figure-2

DS-SVVP-ACH (Adjustable centerline height)

〈Parts〉

Shank	Wedge	Screw for Wedge
ϕ.630" (16)	ACH-W18 (5805601)	WS060415-003 (5795539)
ϕ3/4" (19.05)		
ϕ.787" (20)		WS060419-004 (5799226)
ϕ.866" (22)		
ϕ1" (25.4)	ACH-W24 (5805619)	

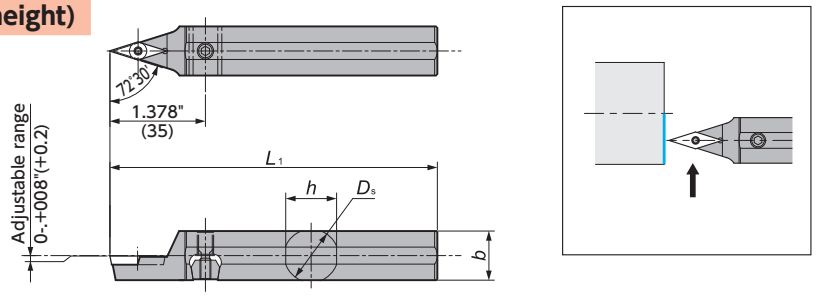


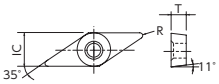
Figure-3

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h1 (Inch)	h1 (mm)	L1 (Inch)	L1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
VP..22	SVXP□1012X11N	1	○	○	.394	10	.472	12	.394	10	4.724	120	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	SVXP□1212X11N	1	○	○	.472	12	.472	12	.472	12	4.724	120	0.0	0.0	LRIS-2.5 × 7	CLR-15S

Gage Insert	Item Number	Figure	Stock Neutral	Ds (Inch)	Ds (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L1 (Inch)	L1 (mm)	Clamp Screw	Wrench
VP..22	DS-SVVPN19-11	2	○	3/4	19.050	.709	18.0	.709	18	4.724	120	LRIS-2.5 × 7	CLR-15S
	DS-SVVPN22-11	2	○	.866	22.000	.827	21.0	.827	21	4.724	120	LRIS-2.5 × 7	CLR-15S
	DS-SVVPN16-11-ACH	3	●	.630	16.000	.610	15.5	.610	15	4.724	120	LRIS-2.5 × 7	CLR-15S
	DS-SVVPN19-11-ACH	3	●	3/4	19.050	.709	18.0	.709	18	4.724	120	LRIS-2.5 × 7	CLR-15S
	DS-SVVPN20-11-ACH	3	●	.787	20.000	.748	19.0	.748	19	4.724	120	LRIS-2.5 × 7	CLR-15S
	DS-SVVPN22-11-ACH	3	●	.866	22.000	.827	21.0	.827	21	4.724	120	LRIS-2.5 × 7	CLR-15S
	DS-SVVPN25-11-ACH	3	●	1	25.400	.945	24.0	.945	24	5.906	150	LRIS-2.5 × 7	CLR-15S

VP.. Inserts - Carbide / Cermet

(inch)	IC	T
VP..22	1/4	1/8

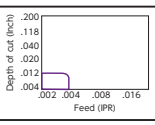


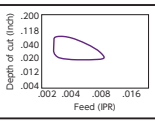
VP__

		Carbide							Cermet				
		PVD Coated										PVD Coated	
		QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●
Cast Iron	K								●	●		●	●
Non-Ferrous Material	N				●	●	●	●	●	●			●
Heat Resistant Alloy	S	●	●	●	●								
Hardened Material	H	●	●	●									

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
	VPET 2202 □KHG	VPET 1103005 □KHG	1/4	.002				Ⓡ	Ⓡ Ⓛ							
	VPET 2203 □KHG	VPET 1103008 □KHG	1/4	.003				Ⓡ	Ⓡ Ⓛ							
	VPET 2207 □KHG	VPET 1103018 □KHG	1/4	.007				Ⓡ	Ⓡ Ⓛ							
	VPET 2208 □KHG	VPET 110302 □KHG	1/4	.008				Ⓡ	Ⓡ Ⓛ							
	VPGT 2201 FNAM3	VPGT 110300 FNAM3	1/4	.001		●		○								
	VPGT 2204M FNAM3	VPGT 110301M FNAM3	1/4	.003	●	●		○								
	VPGT 2208M FNAM3	VPGT 110302M FNAM3	1/4	.007	●	●		○								





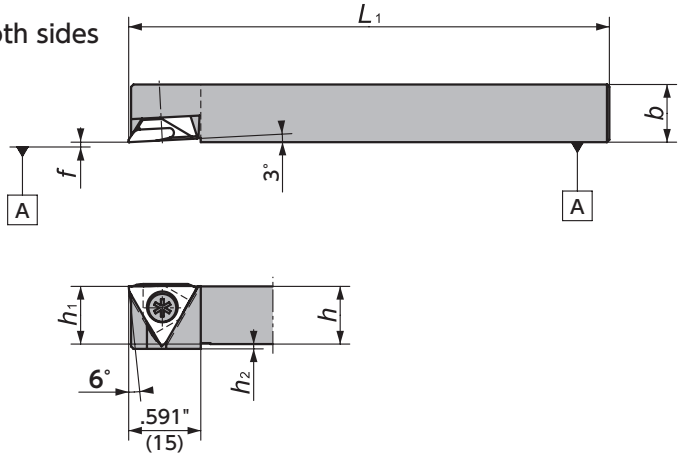
● : Stock ○ : 1-2 week delivery Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)

Cutting condition ➡Q4
Chipbreaker ➡P21

Toolholders for TFT series

TFT

Screw accessible from both sides



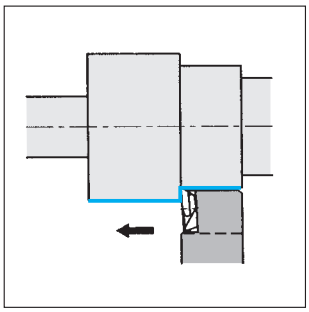
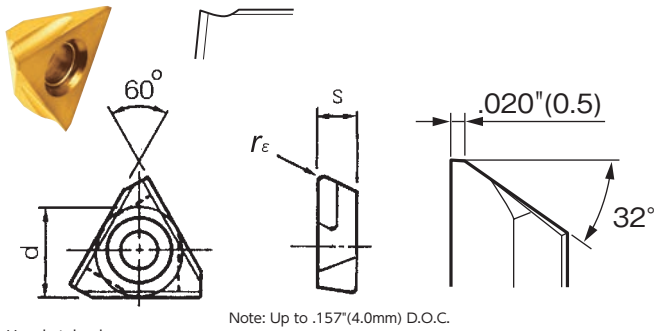


Figure-1

Right-Hand style shown

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	h_2 (Inch)	h_2 (mm)	Clamp Screw	Wrench
 TF33	**TFT□06-IN**	1	●		3/8		3/8		3/8		4.724	120	0.0	0.0	.118	3	LR-S-4 × 10PW	CLR-15S
	TFT□08-IN	1	●		1/2		1/2		1/2		4.724	120	0.0	0.0	.039	1	LR-S-4 × 10PW	CLR-15S
	TFT□10	1	○		.394	10	.394	10	.394	10	4.724	120	0.0	0.0	.118	3	LR-S-4 × 10PW	CLR-15S
	TFT□12	1	○		.472	12	.472	12	.472	12	4.724	120	0.0	0.0	.039	1	LR-S-4 × 10PW	CLR-15S
	TFT□16	1	○		.630	16	.630	16	.630	16	4.724	120	0.0	0.0	0.0	0	LR-S-4 × 10PW	CLR-15S
	TFT□20	1	○		.787	20	.787	20	.787	20	4.724	120	0.0	0.0	0.0	0	LR-S-4 × 10PW	CLR-15S

TFT Series - Inserts

Shape	Item Number	d (Inch)	d (mm)	s (Inch)	s (mm)	r_ε (Inch)	r_ε (mm)	ZM3 R	ZM3 L
	**TF3300□**	3/8	9.525	3/16	4.76	0	0	●	
	TF3305□	3/8	9.525	3/16	4.76	.002	0.05	●	
	TF3315□	3/8	9.525	3/16	4.76	.006	0.15	●	
	TF3320□	3/8	9.525	3/16	4.76	.008	0.2	○	

Right-Hand style shown

Note: Up to .157"(4.0mm) D.O.C.
All angles shown are obtained when insert is set in the holder.

Toolholders for TC.. Inserts

STAC-N

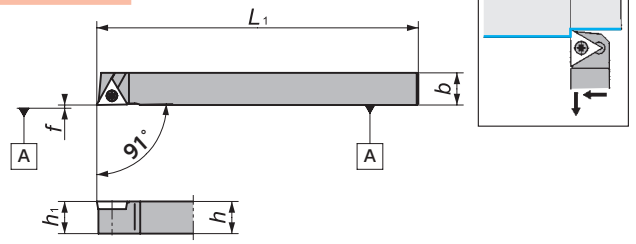


Figure-1

Right-Hand style shown

CH-STUC

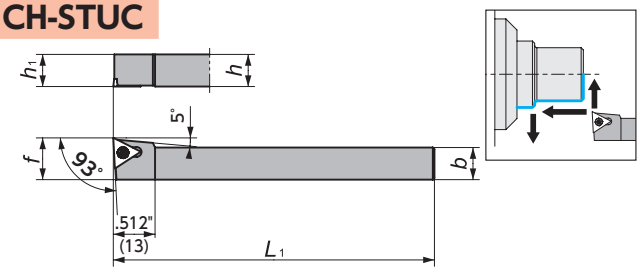


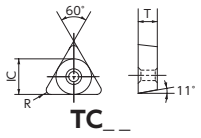
Figure-2

Left-Hand style shown
Takes Right-hand or Neutral insert

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
TC..73..	STAC□1010X09N	1	○		.394	10	.394	10	.394	10	4.724	120	0.0	0.0	LRIS-2.2 × 6	CLR-13S
	STAC□0808X09N	1	○	○	.315	8	.315	8	.315	8	4.724	120	0.0	0.0	LRIS-2.2 × 6	CLR-13S
TC..21.5..	STAC□1212X11N	1	○	○	.472	12	.472	12	.472	12	4.724	120	0.0	0.0	LRIS-2.5 × 7	CLR-15S
TC..73..	CH-STUC□1010H09	2		○	.394	10	.394	10	.394	10	3.937	100	.512	13	LRIS-2.2 × 6	CLR-13S
	CH-STUC□1212H09	2		○	.472	12	.472	12	.472	12	3.937	100	.591	15	LRIS-2.2 × 6	CLR-13S

TC.. Inserts - Carbide / Cermet

(inch) TC..21	IC 1/4	T 3/32	(inch) TC..73	IC 7/32	T 3/32

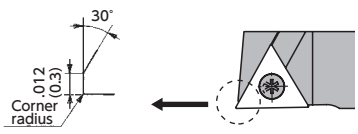


TC□□

Steel	P	●
Stainless Steel	M	●
Cast Iron	K	●
Non-Ferrous Material	N	●
Heat Resistant Alloy	S	●
Hardened Material	H	●

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	Cermet PVD Coated Q15	C7Z
	TCGT 21.508 FNAM3	TCGT 110202 FNXAM3	1/4	.008									○			
	TCGT 7304 □S	TCGT 090201 □S	7/32	.004					Ⓡ Ⓛ	Ⓡ			Ⓡ			
	TCGT 7308 □S	TCGT 090202 □S	7/32	.008						Ⓡ			Ⓡ Ⓛ			
	TCGT 21.504 □S	TCGT 110201 □S	1/4	.004					Ⓡ Ⓛ	Ⓡ						
 wiper insert	TCGT 7302 □S-WP*	TFT 09F□05	7/32	.002						Ⓡ						
	TCGT 7306 □S-WP*	TFT 09F□15	7/32	.006						Ⓡ						
	TCGT 21.502 □S-WP*	TFT 11F□05	1/4	.002						Ⓡ						
	TCGT 21.506 □S-WP*	TFT 11F□15	1/4	.006						Ⓡ						
	TCGT 7304 □U	TCGT 090201 □U	7/32	.004						Ⓡ						
	TCGT 7308 □U	TCGT 090202 □U	7/32	.008						Ⓡ						
 wiper insert	TCGT 7302 □U-WP*	TFT 09F□05U	7/32	.002						Ⓡ						
	TCGT 7306 □U-WP*	TFT 09F□15U	7/32	.006						Ⓡ						
	TCGT 21.502 □U1-WP*	TFT 11F□05U1	1/4	.002						Ⓡ						
	TCGT 21.506 □U1-WP*	TFT 11F□15U1	1/4	.006						Ⓡ						
	TCGW 7301 FN	TCGW 090200 FN	7/32	.001						○						
	TCGW 7304 FN	TCGW 090201 FN	7/32	.004						○						
	TCGW 21.501 FN	TCGW 110200 FN	1/4	.001						○						
	TCGW 21.504 FN	TCGW 110201 FN	1/4	.004						○						



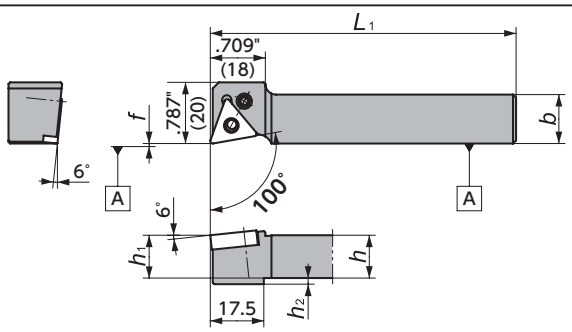
*Note: NTK WP style inserts have a wiper facet design.
The insert has a 0.3mm (.012") flat on the cutting edge when the insert is set into the toolholder.
The flat on the cutting edge ensures a superior surface finish when feed rates are increased.
WP style inserts can be used in toolholders: STAC

● : Stock ○ : 1-2 week delivery Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)

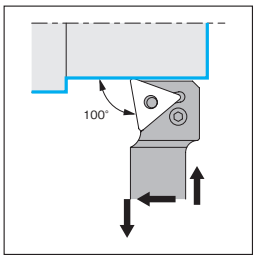
Cutting condition ➡Q4
Chipbreaker ➡P21

Toolholders for TN.. Inserts

PTXN-N



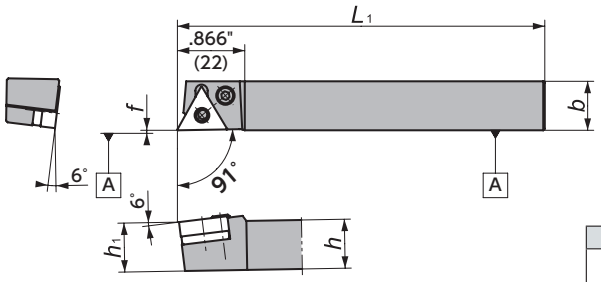
Shim	Clamp Pin	Spring
–	LCL33N	–



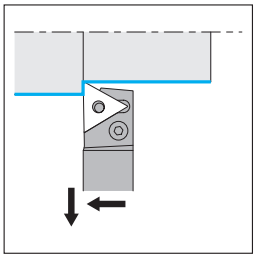
Right-Hand style shown

Figure-1

PTAN-N



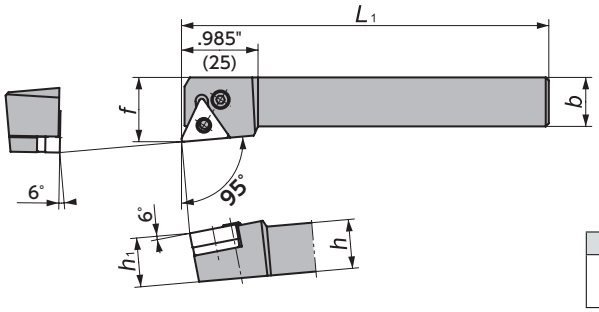
Shim	Clamp Pin	Spring
LST317	LCL3	LSP3



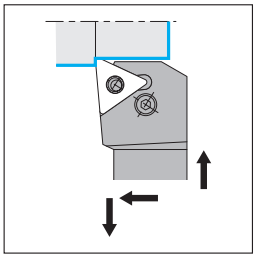
Right-Hand style shown

Figure-2

PTLN



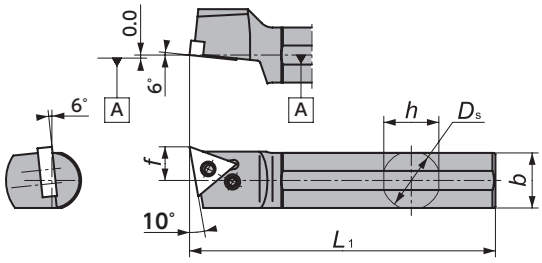
Shim	Clamp Pin	Spring
LST317	LCL3	LSP3



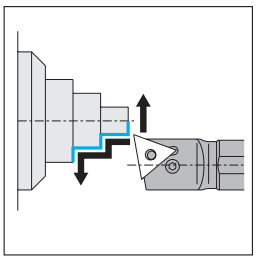
Right-Hand style shown

Figure-3

DS-PTX



Shim	Clamp Pin	Spring
–	LCL33N	–



Left-Hand style shown
Takes Right-hand or Neutral insert

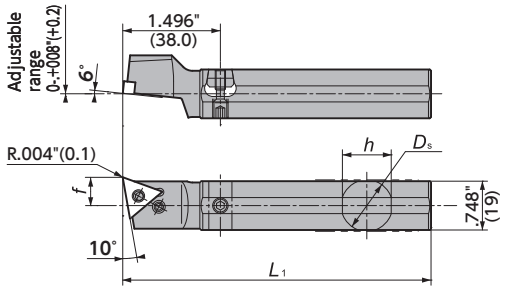
Figure-4

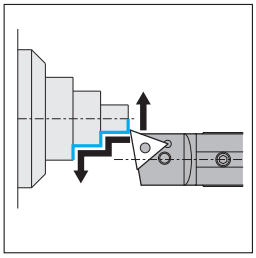
DS-PTX-ACH (Adjustable centerline height)

〈Parts〉

Shank	Wedge	Screw for Wedge
ϕ.630" (16)	ACH-W18 (5805601)	WS060415-003 (5795539)
ϕ3/4" (19.05)		
ϕ.787" (20)		WS060419-004 (5799226)
ϕ.866" (22)		
ϕ1" (25.4)	ACH-W24 (5805619)	

Shim	Clamp Pin	Spring
–	LCL33N	–





Left-Hand style shown
Takes Right-hand or Neutral insert

Figure-5

TN.. Series - Toolholders



■PTXN-N / PTAN-N / PTLN

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	h_2 (Inch)	h_2 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
TN..33..	PTXN□063C	1	●		3/8		5/8		3/8		4.724	120	.097	2.475	0.0	0.0	LCS33	LW-2
	PTXN□083C	1	●		1/2		5/8		1/2		4.724	120	–	–	0.0	0.0	LCS33	LW-2
	PTXN□103C	1	●		5/8		5/8		5/8		4.724	120	–	–	0.0	0.0	LCS33	LW-2
TN..33..	PTXN□1016X33N	1	○		.394	10.0	.630	16	.394	10	4.724	120	.079	2	0.0	0.0	LCS33	LW-2
	PTXN□1216X33N	1	●		.472	12.0	.630	16	.472	12	4.724	120	–	–	0.0	0.0	LCS33	LW-2
	PTXN□1616X33N	1	○		.630	16.0	.630	16	.630	16	4.724	120	–	–	0.0	0.0	LCS33	LW-2
	PTXN□2020X33N	1	○		.787	20.0	.787	20	.787	20	4.724	120	–	–	0.0	0.0	LCS33	LW-2
TN..33..	PTAN□1616X33N	2	○		.630	16.0	.630	16	.630	16	4.724	120	–	–	0.0	0.0	LCS3	LW-2.5
TN..33..	PTLN□2020L33	3	○	○	.787	20.0	.787	20	.787	20	5.512	140	–	–	.984	25	LCS3	LW-2.5



■DS-PTX / DS-PTX-ACH

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
TN..33..	DS-PTX□19-33	4		○	3/4	19.050	.709	18.0	.709	18	4.724	120	.433	11.0	LCS33	LW-2
	DS-PTX□20-33	4		○	.787	20.000	.748	19.0	.748	19	4.724	120	.433	11.0	LCS33	LW-2
	DS-PTX□22-33	4		○	.866	22.000	.827	21.0	.827	21	4.724	120	.472	12.0	LCS33	LW-2
	DS-PTX□25M-33	4		○	1	25.400	.945	24.0	.945	24	5.906	150	.512	13.0	LCS33	LW-2
TN..33..	DS-PTX□16-33-ACH	5		●	.630	16.000	.610	15.5	.591	15	4.724	120	.433	11.0	LCS33	LW-2
	DS-PTX□19-33-ACH	5		●	3/4	19.050	.709	18.0	.709	18	4.724	120	.433	11.0	LCS33	LW-2
	DS-PTX□20-33-ACH	5		●	.787	20.000	.748	19.0	.748	19	4.724	120	.433	11.0	LCS33	LW-2
	DS-PTX□22-33-ACH	5		●	.866	22.000	.827	21.0	.827	21	4.724	120	.472	12.0	LCS33	LW-2
	DS-PTX□25-33MET-ACH	1		●	1	25.000	.945	24.0	.945	24	5.906	150	.512	13.0	LCS33	LW-2
	DS-PTX□25-33-ACH	5		●	1	25.400	.945	24.0	.945	24	5.906	150	.512	13.0	LCS33	LW-2

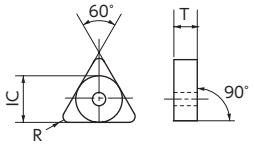
Note: All angles shown are obtained when insert is set in the holder

● : Stock ○ : 1-2 week delivery

Inserts ➡Q36
Cutting condition ➡Q4

TN..33 inserts - Carbide / Cermet

(inch)	IC	T
TN..33	3/8	3/16

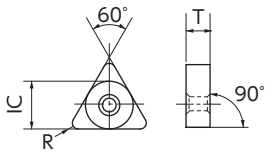


		QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●
Cast Iron	K								●	●		●	●
Non-Ferrous Material	N				●	●	●	●	●	●			●
Heat Resistant Alloy	S	●	●	●	●								
Hardened Material	H	●	●	●									

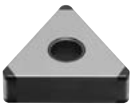
● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	PVD Coated Q15	C7Z
	TNGG 3304M FNUL	TNGG 160401M FNUL	3/8	.003			●	●								
	TNGG 3308M FNUL	TNGG 160402M FNUL	3/8	.007			●	●								
	TNGG 331M FNUL	TNGG 160404M FNUL	3/8	.015			●	●								
	TNGG 3308 FNZP	TNGG 160402 FNZP	3/8	.008	●		○		○	○						
	TNGG 331 FNZP	TNGG 160404 FNZP	3/8	.016	●		○		○	●						
	TNGG 332 FNZP	TNGG 160408 FNZP	3/8	.031	●		○		○	●						
	TNGG 3304 FR/L U2	TNGG 160401 FR/L U2	3/8	.004					Ⓡ	Ⓡ		Ⓡ				
	TNGG 3308 FR/L U2	TNGG 160402 FR/L U2	3/8	.008			ⓇⓁ			ⓇⓁ		ⓇⓁ				
	TNGG 331 FR/L U2	TNGG 160404 FR/L U2	3/8	.016			ⓇⓁ			ⓇⓁ		ⓇⓁ				
	TNGG 332 FR/L U2	TNGG 160408 FR/L U2	3/8	.031						ⓇⓁ						
	TNEG 3304M FR/L D1	TNEG 160401M FR/L D1	3/8	.003												ⓇⓁ
	TNEG 3308 FR/L D1	TNEG 160402 FR/L D1	3/8	.008				ⓇⓁ								ⓇⓁ
	TNEG 331 FR/L D1	TNEG 160404 FR/L D1	3/8	.016				ⓇⓁ								ⓇⓁ
	TNEG 332 FR/L D1	TNEG 160408 FR/L D1	3/8	.031				ⓇⓁ								ⓇⓁ
	TNGG 3304 FR/L DA	TNGG 160401 FR/L DA	3/8	.004					Ⓡ	Ⓡ		Ⓡ				
	TNGG 331 FNZF1	TNGG 160404 FNZF1	3/8	.016								●				
	TNGG 332 FNZF1	TNGG 160408 FNZF1	3/8	.031								●				

TN..33 Inserts - CBN / PCD



		B5K	B52	B6K	B36	B40	B23	B30	PD1	PD2
Steel	P									
Stainless Steel	M									
Cast Iron	K	●	●				●	●		
Non-Ferrous Material	N								●	●
Heat Resistant Alloy	S									
Hardened Material	H	●	●	●	●	●				

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	CBN (Brazed) Coated B5K	B52	Coated B6K	B36	B40	B23	B30	PCD PD1	PD2
	TNGA 331C PH	TNGA 160401 PH	S0415	3/8	.004	6	.083		●							
	TNGA 3308 PH	TNGA 160402 PH	S0415	3/8	.008	6	.087	●	●							
	TNGA 3308 PH	TNGA 160402 PH	S0635	3/8	.008	6	.087					●				
	TNGA 331 PH	TNGA 160404 PH	S0415	3/8	.016	6	.079	●	●							
	TNGA 331 PH	TNGA 160404 PH	T0420	3/8	.016	6	.079							○		
	TNGA 331 PH	TNGA 160404 PH	S0525	3/8	.016	6	.079			●	○					
	TNGA 331 PH	TNGA 160404 PH	S0635	3/8	.016	6	.079					●				
	TNGA 332 PH	TNGA 160408 PH	S0415	3/8	.031	6	.067	●	●							
	TNGA 332 PH	TNGA 160408 PH	S0420	3/8	.031	6	.067						○			
	TNGA 332 PH	TNGA 160408 PH	T0420	3/8	.031	6	.067							○		
	TNGA 332 PH	TNGA 160408 PH	S0525	3/8	.031	6	.067			●	○					
	TNGA 332 PH	TNGA 160408 PH	S0635	3/8	.031	6	.067					●				
	TNGA 333 PH	TNGA 160412 PH	S0415	3/8	.047	6	.091		●							
	TNGA 333 PH	TNGA 160412 PH	S0420	3/8	.047	6	.091						○			
	TNGA 333 PH	TNGA 160412 PH	T0420	3/8	.047	6	.091							○		
	TNMA 333 PH	TNMA 160412 PH	S0525	3/8	.047	6	.091				○					
	TNGA 333 PH	TNGA 160412 PH	S0635	3/8	.047	6	.091					●				
NEW  with chipbreaker	TNMX 331 PF	TNMX 160404 PF	none	3/8	.016	1	–									●
	TNMX 332 PF	TNMX 160408 PF	none	3/8	.031	1	–									●

● : Stock ○ : 1-2 week delivery Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only)

Holders ➡Q34 Cutting condition ➡Q4 Chipbreaker ➡P25

Toolholders for CN.. Inserts

PCLN-N

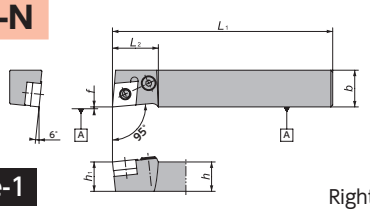
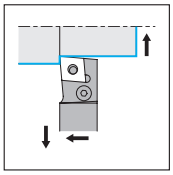


Figure-1



Right-Hand style shown

PCLN

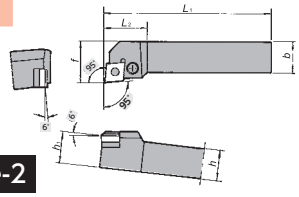
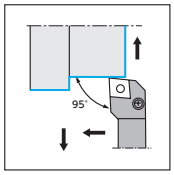


Figure-2

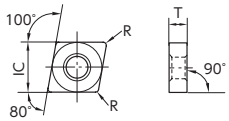


Right-Hand style shown

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Shim	Clamp Pin	Clamp Screw	Spring	Wrench
 CN..43..	PCLN□1620X43N	1	○		.630	16	.787	20	.630	16	4.724	120	0.0	0.0	.984	25	LSC42	LCL4	LCS4CA	LSP4	LW-3
	PCLN□2020K43	2	○	○	.787	20	.787	20	.787	20	4.921	125	.984	25	1.102	28	LSD42	LCL4	LCS4	LSP4	LW-3
	PCLN□2525M43	2	○	○	.984	25	.984	25	.984	25	5.906	150	1.260	32	1.102	28	LSD42	LCL4	LCS4	LSP4	LW-3

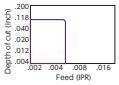
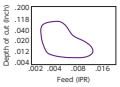
CN..43 Inserts

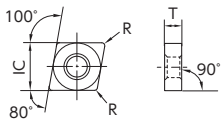
(inch)	IC	T
CN..43	1/2	3/16



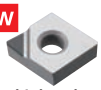
Steel	P	● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ●
Hardened Material	H	● ● ●

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	PVD Coated Q15	C7Z	
	CNGG 431 FNUL	CNGG 120404 FNUL	1/2	.016			●	○									
	CNGG 432 FNUL	CNGG 120408 FNUL	1/2	.031			●	○									
	CNGG 431 FNZP	CNGG 120404 FNZP	1/2	.016	●		●			●							
	CNMP 432 ZP	CNMG 120408 ENBZP	1/2	.031								●					
	CNGG 432 FNZP	CNGG 120408 FNZP	1/2	.031	●		●			●							
	CNGG 4304 FNZF1	CNGG 120401 FNZF1	1/2	.004								●					
	CNGG 4308 FNZF1	CNGG 120402 FNZF1	1/2	.008								●					
	CNGG 431 FNZF1	CNGG 120404 FNZF1	1/2	.016								●					
	CNGG 432 FNZF1	CNGG 120408 FNZF1	1/2	.031								●					



Steel	P	
Stainless Steel	M	
Cast Iron	K	● ● ● ● ● ●
Non-Ferrous Material	N	● ●
Heat Resistant Alloy	S	
Hardened Material	H	● ● ● ● ●

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	CBN (Brazed) Coated B5K	B52	Coated B6K	B36	B40	B23	B30	PCD PD1	PD2
	CNGA 4308 PQ	CNGA 120402 PQ	S0415	1/2	.008	4	.091		●							
	CNGA 4308 PQ	CNGA 120402 PQ	S0635	1/2	.008	4	.091					●				
	CNGA 431 PQ	CNGA 120404 PQ	S0415	1/2	.016	4	.091	●	●							
	CNGA 431 PQ	CNGA 120404 PQ	S0420	1/2	.016	4	.091						○			
	CNGA 431 PQ	CNGA 120404 PQ	T0420	1/2	.016	4	.091							○		
	CNGA 431 PQ	CNGA 120404 PQ	S0525	1/2	.016	4	.091			●	○					
	CNGA 431 PQ	CNGA 120404 PQ	S0635	1/2	.016	4	.091					●				
	CNGA 432 PQ	CNGA 120408 PQ	S0415	1/2	.031	4	.087	●	●							
	CNGA 432 PQ	CNGA 120408 PQ	S0420	1/2	.031	4	.087						○			
	CNGA 432 PQ	CNGA 120408 PQ	T0420	1/2	.031	4	.087							○		
	CNGA 432 PQ	CNGA 120408 PQ	S0525	1/2	.031	4	.087			●	○					
	CNGA 432 PQ	CNGA 120408 PQ	S0635	1/2	.031	4	.087					●				
	CNGA 433 PQ	CNGA 120412 PQ	S0415	1/2	.047	4	.106	●	●							
	CNGA 433 PQ	CNGA 120412 PQ	S0420	1/2	.047	4	.106						○			
	CNGA 433 PQ	CNGA 120412 PQ	T0420	1/2	.047	4	.106							○		
	CNMA 433 PQ	CNMA 120412 PQ	S0525	1/2	.047	4	.094				○					
	CNGA 433 PQ	CNGA 120412 PQ	S0635	1/2	.047	4	.106					●				
 with wiper	CNGA 431 PQW	CNGA 120404 PQW	S0415	1/2	.016	4	.091		●							
	CNGA 431 PQW	CNGA 120404 PQW	S0635	1/2	.016	4	.091					●				
	CNGA 432 PQW	CNGA 120408 PQW	S0415	1/2	.031	4	.087		●							
	CNGA 432 PQW	CNGA 120408 PQW	S0635	1/2	.031	4	.087					●				
	CNGA 433 PQW	CNGA 120412 PQW	S0415	1/2	.047	4	.106		●							
	CNGA 433 PQW	CNGA 120412 PQW	S0635	1/2	.047	4	.106					●				
NEW  with chipbreaker	CNMX 431 PF	CNMX 120404 PF	none	1/2	.016	1	–									●
	CNMX 432 PF	CNMX 120408 PF	none	1/2	.031	1	–									●

Toolholders for DN.. Inserts

PDJN-N

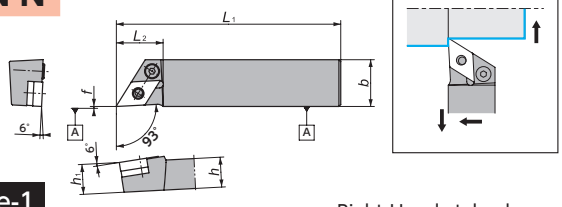


Figure-1

Right-Hand style shown

PDJN

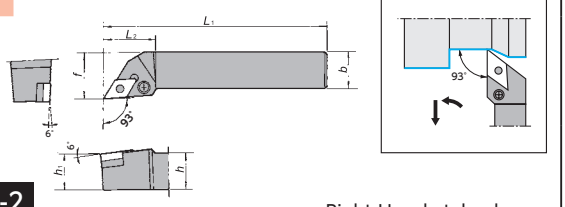
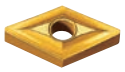


Figure-2

Right-Hand style shown

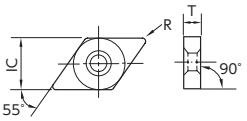
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Shim	Clamp Pin	Clamp Screw	Spring	Wrench
 DN..43..	PDJN※1625X43N	1	○		.630	16	.984	25	.630	16	4.724	120	0.0	0.0	.984	25	LSD42	LCL4	LCS4CA	LSP4	LW-3
	PDJN※2020K43	2	○	○	.787	20	.787	20	.787	20	4.921	125	.984	25	1.260	32	LSD42	LCL4	LCS4	LSP4	LW-3
	PDJN※2525M43	2	○		.984	25	.984	25	.984	25	5.906	150	1.260	32	1.260	32	LSD42	LCL4	LCS4	LSP4	LW-3

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

DN.. Inserts

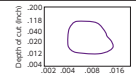
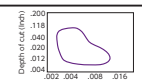
[Molded Chipbreakers]

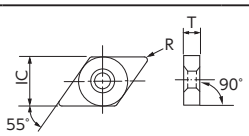
(inch)	IC	T
DN..43	1/2	3/16

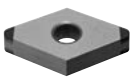
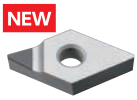


			Carbide							Cermet						
			PVD Coated											PVD Coated		
Shape	Item Number	ISO Item Number	IC	R	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
Steel		P	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel		M	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Cast Iron		K										●	●		●	●
Non-Ferrous Material		N						●	●	●	●	●	●			●
Heat Resistant Alloy		S	●	●	●	●										
Hardened Material		H	●	●	●											

● : 1st Choice
● : Alternate choice

	DNGG 431 FNZP	DNGG 150404 FNZP	1/2	.016	●		●			●							
	DNGG 432 FNZP	DNGG 150408 FNZP	1/2	.031	●		●			●							
	DNGG 4304 FNZF1	DNGG 150401 FNZF1	1/2	.004								●					
	DNGG 4308 FNZF1	DNGG 150402 FNZF1	1/2	.008								●					
	DNGG 431 FNZF1	DNGG 150404 FNZF1	1/2	.016								●					
	DNGG 432 FNZF1	DNGG 150408 FNZF1	1/2	.031								●					



										CBN (Brazed)								PCD	
										Coated		Coated							
Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	B5K	B52	B6K	B36	B40	B23	B30	PD1	PD2
Steel		P														
Stainless Steel		M														
Cast Iron		K	●	●									●	●		
Non-Ferrous Material		N													●	●
Heat Resistant Alloy		S														
Hardened Material		H	●	●	●	●	●									
	DNGA 4308 PQ	DNGA 150402 PQ	S0415	1/2	.008	4	.094		●							
	DNGA 4308 PQ	DNGA 150402 PQ	S0635	1/2	.008	4	.094					●				
	DNGA 431 PQ	DNGA 150404 PQ	S0415	1/2	.016	4	.087	●	●							
	DNGA 431 PQ	DNGA 150404 PQ	S0525	1/2	.016	4	.087			●	○					
	DNGA 431 PQ	DNGA 150404 PQ	S0635	1/2	.016	4	.087					●				
	DNGA 432 PQ	DNGA 150408 PQ	S0415	1/2	.031	4	.075	●	●							
	DNGA 432 PQ	DNGA 150408 PQ	S0420	1/2	.031	4	.075						○			
	DNGA 432 PQ	DNGA 150408 PQ	T0420	1/2	.031	4	.075							○		
	DNGA 432 PQ	DNGA 150408 PQ	S0525	1/2	.031	4	.075			●	○					
	DNGA 432 PQ	DNGA 150408 PQ	S0635	1/2	.031	4	.075					●				
	DNGA 433 PQ	DNGA 150412 PQ	S0415	1/2	.047	4	.102		●							
	DNGA 433 PQ	DNGA 150412 PQ	S0420	1/2	.047	4	.102						○			
	DNGA 433 PQ	DNGA 150412 PQ	T0420	1/2	.047	4	.102							○		
	DNMA 433 PQ	DNMA 150412 PQ	S0525	1/2	.047	4	.087				●					
	DNGA 433 PQ	DNGA 150412 PQ	S0635	1/2	.047	4	.102					●				
NEW  with chipbreaker	DNMX 431 PF	DNMX 150404 PF	none	1/2	.016	1	–									●
	DNMX 432 PF	DNMX 150408 PF	none	1/2	.031	1	–									●

Cutting condition ➡Q4 Chipbreaker ➡P24

R

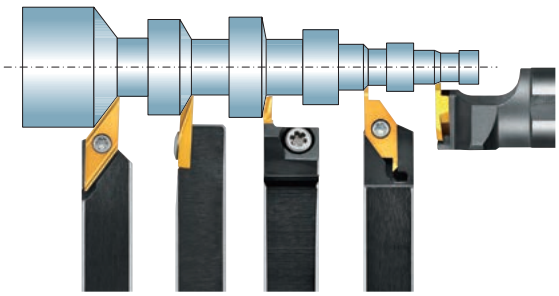


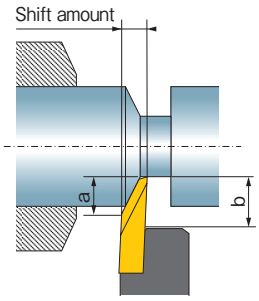
Back Turning

- Back Turning Tools ····· R2
- Recommended Cutting conditions····· R3
- General Information ····· R4
- Tool list ····· R6

CSV Series ····· R6
CTPS Series ····· R7
TBP Series ····· R8
TBPA Series ····· R10
TBDP Series ····· R12
SVAC Series ····· R13
TBVC Series ····· R14
TB Series ····· R16
TBMH Series ····· R18

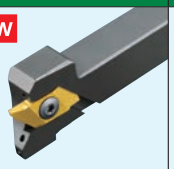
NTK Back Turning Tools - Product Lines

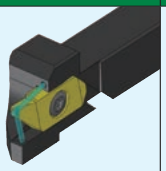
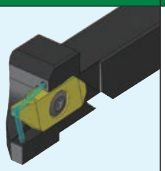
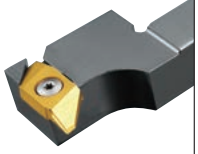


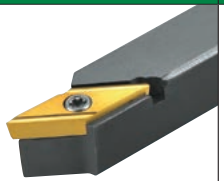
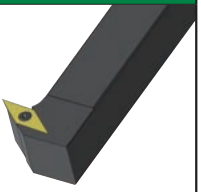


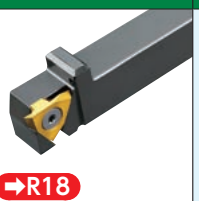
a: Length of Blade
b: Max Depth of Cut

Insert	CSVB ➡R6	
Holder	CSV-NC	DS-CSV
	 ➡R6	 ➡R6
a	~.039" (~1.0mm)	
b	~.079" (~2.0mm)	
Shift amount	.043"-.055" (1.1-1.5mm)	

Insert	TBPS ➡R7	TBP ➡R9				
Holder	CTPS	TBP	TBP-OH	Y-TBP	Y-TBP-OH	DS-TBP
	 ➡R7	 ➡R8	NEW  ➡R8 Coolant through	 ➡R8 Y-axis	NEW  ➡R8 Y-axis w/ Coolant through	 ➡R9
a	~.189" (~4.8mm)	~.189" (~4.8mm)				
b	~.189" (~4.8mm)	~.209" (~5.3mm)				
Shift amount	.094" (2.4mm)	.138" (3.5mm)				

Insert	TBPA ➡R11				
Holder	CTPA	CTPA-OH	TBPA-OH	Y-CTPA	CH-TBPA
	 ➡R10	NEW  ➡R10 Coolant through	NEW  ➡R10 Coolant through	 ➡R10 Y-axis	 ➡R10
a	~.248" (~6.3mm)				
b	~.268" (~6.8mm)				
Shift amount	.134" (3.4mm)				

Insert	TBDP ➡R12		TB ➡R17	VC..22 ➡R15 TBVC ➡R14	
Holder	TBDP	Y-TBDP	TB	TBVC	CH-SVXCL
	 ➡R12	NEW  ➡R12 Y-axis	 ➡R16	 ➡R14	 ➡R14
a	.138" (3.5mm)		~.157" (~4.0mm)	.315" (8.0mm)	—
b	~.204" (~5.0mm)		~.335" (~8.8mm)	.315" (8.0mm)	—
Shift amount	.081" (2.05mm)		.157" (4.0mm)	.295"/.394" (7.5/10mm)	.394" (10mm)

Insert	TBMH ➡R19					
Holder	GTT	GTT-OH	Y-GTT	Y-GTT-OH	DS-GTT	CH-GTT
	 ➡R18	NEW  ➡R18 Coolant through	 ➡R18 Y-axis	NEW  ➡R18 Y-axis w/ Coolant through	 ➡R18	 ➡R18
a	~.051" (~1.3㎜)					
b	~.106" (~2.7㎜)					
Shift amount	.039"/.059" (1.0/1.5㎜)					

Recommended Cutting conditions

Back Turning

CSVB

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4					VM1	
	2nd choice	VM1					DT4	
Cutting Speed (SFM)		75 125 225	100 200 275			100 200 300		
Feed Rate (IPR)	X Direction	.0004 .0008 .0012						
	Z Direction	.0004 .0012 .0016						

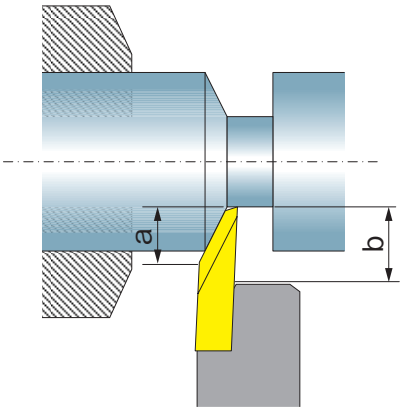
TBDP / TBMH / TBP / TBPA / TBVC

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4			DT4 / QM3	TM4	QM3	
	2nd choice	TM4 / QM3			VM1	QM3	TM4 / DT4 / C7Z(X)	
Cutting Speed (SFM)		75 125 225	100 200 275			150 300 500		
Feed Rate (IPR)	X Direction	.0004 .0008 .0012				.0004 .0008 .0016		
	Z Direction	.0008 .0016 .0024				.0008 .0016 .0031		

TB32 / TB43

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	ZM3					ZM3	
	2nd choice						Z15	
Cutting Speed (SFM)		50 100 150				ZM3 150 300 425 Z15 400 600 800		
Feed Rate (IPR)	X Direction	.0004 .0012 .0020				.0004 .0012 .0020		
	Z Direction	.0016 .0020 .0031				.0016 .0031 .0059		

Back Turning



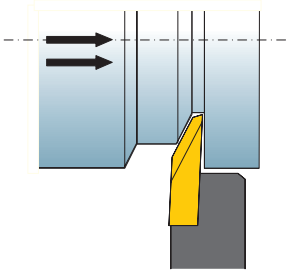
■Recommended max. depth of cut for each pass

(Multiply this ratio by the length of blade (a) to obtain the max. depth of cut for each pass)

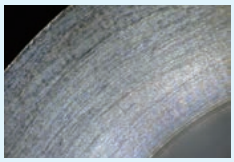
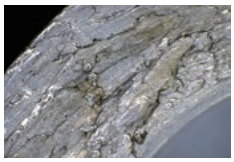
Work material \ Grade	PVD Coated Carbide QM3·DT4·DM4·TM4·VM1·ZM3	Cermet XT3・XN4
Steel	.028"(0.7㎜)	.020"(0.5㎜)
Stainless Steel	.024"(0.6㎜)	.016"(0.4㎜)
Non-ferrous material	.035"(0.9㎜)	.031"(0.8㎜)
Plastic	.035"(0.9㎜)	.035"(0.9㎜)

a : Length of Blade　b : Max. Depth of Cut

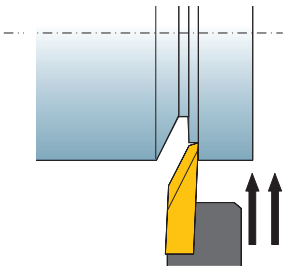
■When the length of blade (a) is not long enough



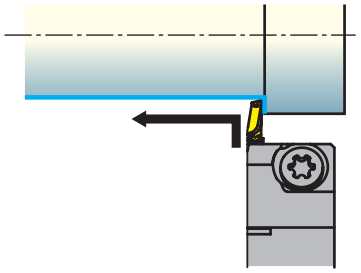
Back turning can be performed multiple times until the total depth of cut reaches (b).

End face	
NTK BM-chipbreaker	Competitor
	
Excellent surface	Rough surface

■When experiencing rough finish on shoulder



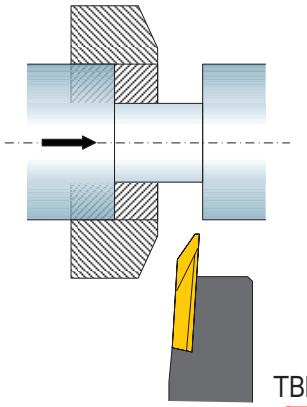
Turning the shoulder twice can improve the finish.
This problem can be solved by using TBP-BM, TBPA-BM, TBDP inserts without increasing the number of passes



TBP-BM, TBPA-BM, TBDP come with NTK's uniquely designed molded chipbreaker providing single pass machining. These inserts can provide excellent surface finish.

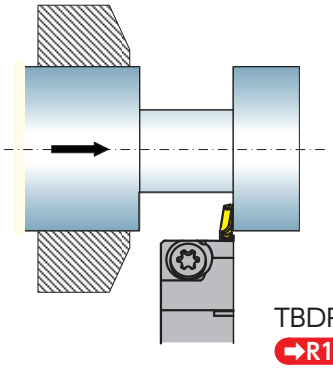
TBP-BM ➡R9
TBPA-BM ➡R11
TBDP ➡R12

■Finishing cut



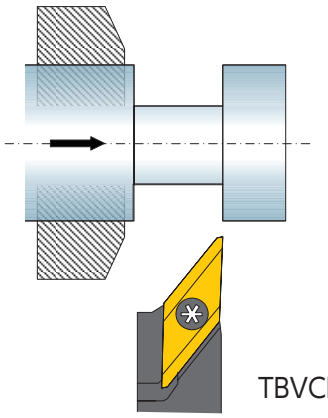
Roughed section goes into the guide bushing when performing finish cuts.
(Deburring may be needed upon roughing)

TBP
➡R8



TBDP-L
➡R12

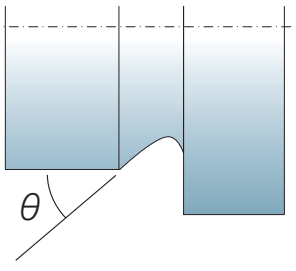
TBDP Left-hand toolholder will eliminate the risky process of pulling back the turned bar stock into the guide-bushing for finishing process, because its cutting point is away from the guide-bushing.



TBVCR··F10
➡R14

Cutting edge is located away from the guide-bushing. Roughing can be performed without retracting roughed part from guide-bushing.

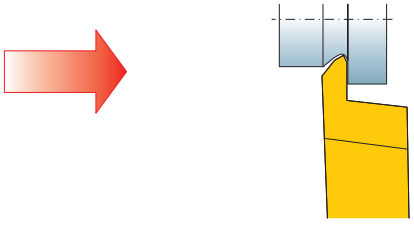
■Undercut



Assume undercut exists on back turning section

$\theta = 22^\circ$ type

$\theta = 45^\circ$ type



TBMH style inserts should be used to cut the undercut

TBMH32 ➡R19
GTTR ➡R18
DS-GTTL ➡R18

CSV Series

Best for up to .200" diameter material

CSV-NC

For Gang-style machine

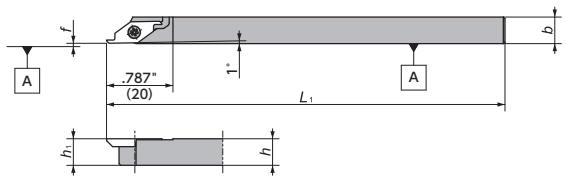


Figure-1

Right-Hand style shown

CSV

For Cam-style machine

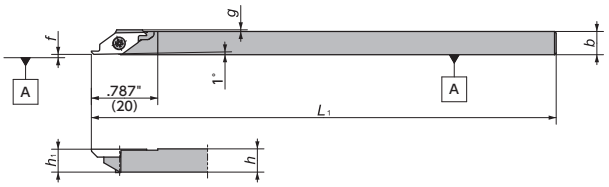


Figure-2

Right-Hand style shown

DS-CSVL

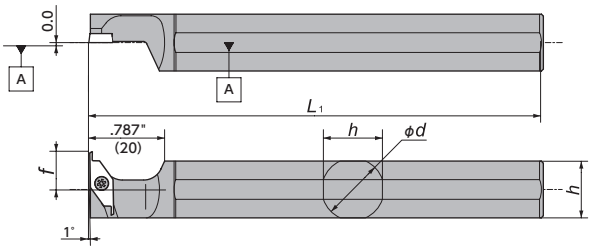


Figure-3

Left-Hand style shown
Takes Right-hand insert

CSVR/L / CSVR/L-NC

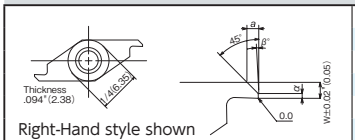
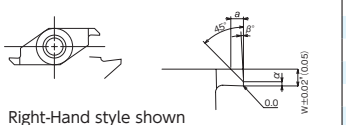
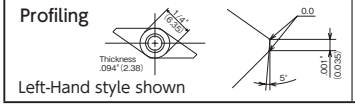
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	g (Inch)	g (mm)	Clamp Screw	Wrench
 CSV..11..	CSVR/L06-IN-NC	1	●	●	3/8		3/8		3/8		4.724	120	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L08-IN-NC	1	●	●	1/2		1/2		1/2		4.724	120	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L08NC	1	○	○	.315	8	.315	8	.315	8	4.724	120	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L08NC-F	1	○		.315	8	.315	8	.315	8	4.724	120	0–.004	0.0–0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L10GXNC	1	○		.394	10	.394	10	.394	10	3.346	85	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L10NC	1	○	○	.394	10	.394	10	.394	10	4.724	120	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L12NC	1	●	●	.472	12	.472	12	.472	12	4.724	120	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L07GX	2	○		.275	7	.275	7	.275	7	3.346	85	.004	0.1	.020	0.5	LR1S-2.5 × 7	CLR-15S
	CSVR/L07	2	○	●	.275	7	.275	7	.275	7	5.512	140	.004	0.1	.020	0.5	LR1S-2.5 × 7	CLR-15S
	CSVR/L08GX	2	○		.315	8	.315	8	.315	8	3.346	85	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L08	2	●	●	.315	8	.315	8	.315	8	5.512	140	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L095	2	○		.374	9.5	.374	9.5	.374	9.5	5.512	140	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L10	2	●	○	.394	10	.394	10	.394	10	5.512	140	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L12GX	2	○		.472	12	.472	12	.472	12	3.346	85	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CSVR/L12	2	●		.472	12	.472	12	.472	12	5.512	140	.004	0.1	0.0	0.0	LR1S-2.5 × 7	CLR-15S

DS-CSVL (Takes right-hand insert)

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 CSV..11FR..	DS-CSVL15	3		●	5/8	15.875	.591	15	.591	15	4.724	120	.394	10	LR1S-2.5 × 7	CLR-15S

CSVB - Back Turning

Mirror finish

Shape	Item Number		Chip-breaker	Length of Blade (Inch)	Length of Blade (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	W (Inch)	W (mm)	Edge Geometry (α × β°) (Inch)	Edge Geometry (α × β°) (mm)	Coated Carbide DT4 R	DT4 L	VM1 R	VM1 L	ZM3 R	ZM3 L
 Right-Hand style shown	CSVB11FR/L V	M	No	.028	0.7	.079	2.0	.039	1.00	.012 × 5°	0.3 × 5°			○	○		
	CSVB11FR/L V-A	M	No	.028	0.7	.079	2.0	.039	1.00	.012 × 2°	0.3 × 2°			○			
	CSVB11FR/L V-M	M	No	.028	0.7	.079	2.0	.039	1.00	.006 × 5°	0.15 × 2°	●		●	○	○	
	CSVB11FR/L V-C	M	No	.028	0.7	.079	2.0	.039	1.00	.006 × 5°	0.15 × 5°			○			
	CSVB11FR/L V12	M	No	.031	0.8	.079	2.0	.047	1.20	.012 × 5°	0.3 × 5°			○			
	CSVB11FR/L V14	M	No	.039	1.0	.079	2.0	.055	1.40	.012 × 5°	0.3 × 5°			○			
 Right-Hand style shown	CSVB11FR/L VB	M	Yes	.028	0.7	.079	2.0	.039	1.00	.012 × 5°	0.3 × 5°			○			
	CSVB11FR/L VB-A	M	Yes	.028	0.7	.079	2.0	.039	1.00	.012 × 2°	0.3 × 2°			○			
	CSVB11FR/L VB-M	M	Yes	.028	0.7	.079	2.0	.039	1.00	.006 × 2°	0.15 × 2°	●		●	○	○	
	CSVB11FR/L VB-C	M	Yes	.028	0.7	.079	2.0	.039	1.00	.006 × 5°	0.15 × 5°			○			
	CSVB11FR/L VB12	M	Yes	.031	0.8	.079	2.0	.047	1.20	.012 × 2°	0.3 × 5°			○			
	CSVB11FR/L VB14	M	Yes	.039	1.0	.079	2.0	.055	1.40	.012 × 2°	0.3 × 5°			○			
Profiling  Left-Hand style shown	CSVB11FR/L VX	M	No	–	–	–	–	–	–						○		

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

CTPS Series

CTPS

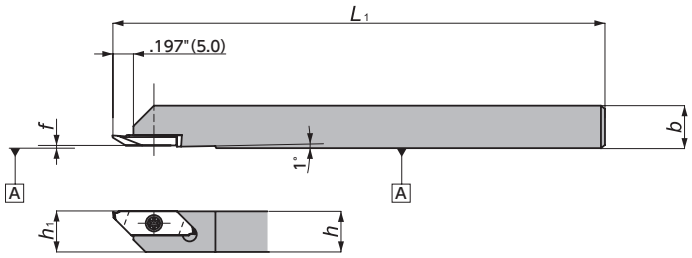


Figure-1

Right-Hand style shown

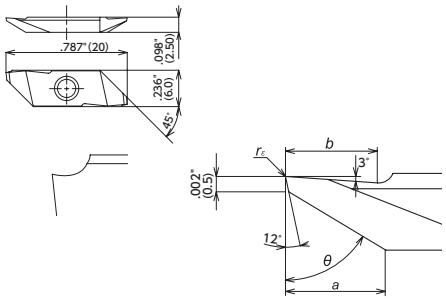
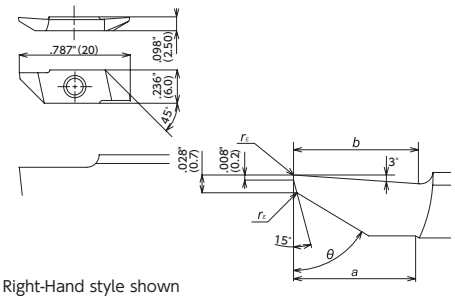
CTPS Series - Toolholders

■CTPS

Gage Insert	Item Number	Figure	Stock	h (Inch)	h (mm)	b (Inch)	b (mm)	h1 (Inch)	h1 (mm)	L1 (Inch)	L1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 TBPS..	**CTPSR06-IN**	1	●	3/8		3/8		3/8		4.724	120	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CTPSR08-IN	1	●	1/2		1/2		1/2		4.724	120	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CTPSR10	1	○	.394	10	.394	10	.394	10	4.724	120	0.0	0.0	LR1S-2.5 × 7	CLR-15S
	CTPSR12	1	○	.472	12	.472	12	.472	12	4.724	120	0.0	0.0	LR1S-2.5 × 7	CLR-15S

TBPS Series - Inserts

■TBPS – Back Turning

Shape	Item Number	Chip-breaker	Length of Blade a (Inch)	a (mm)	Max Depth of Cut b (Inch)	b (mm)	θ	rε (Inch)	rε (mm)	Coated Carbide VM1	Coated Carbide ZM3
with Chipbreaker  Right-Hand style shown	**TBPS60FR00**	Yes	.122	3.1	.138	3.5	60°	0.0	0.0	○	○
	TBPS60FR10	Yes	.122	3.1	.138	3.5	60°	.004	0.1	○	○
without Chipbreaker Mirror finish  Right-Hand style shown	**TBPS60FRV** Ⓜ	No	.189	4.8	.189	4.8	60°	0.0	0.0	○	○

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

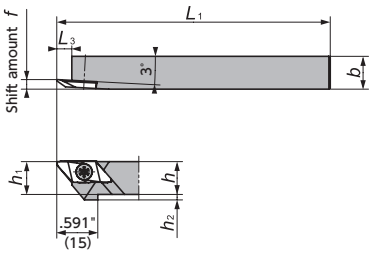
● : Stock ○ : 1-2 week delivery Ⓜ : Mirror finish

CTPS series ➡O31 Cutting condition ➡R3

TBP Series

TBP

Screw accessible from both sides



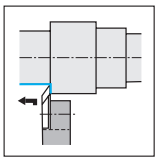


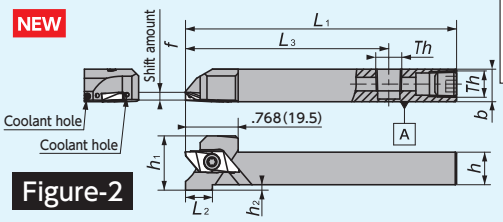
Figure-1

Right-Hand style shown

TBP-OH (Coolant through)

Screw accessible from both sides

NEW



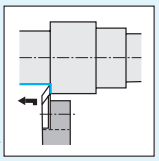


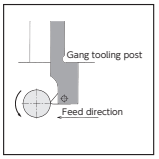
Figure-2

Th (Thread type)
3/8" holder : M6×1
1/2", 5/8" holder : NPT1/8
Metric size holder : Rc1/8 (PT1/8)

Right-Hand style shown

Y-TBP

Screw accessible from both sides



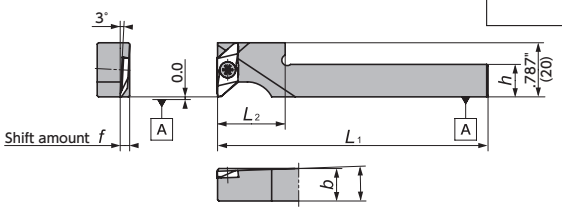


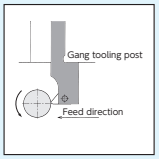
Figure-3

Right-Hand style shown
Takes Right-hand Insert

Y-TBP-OH (Coolant through)

Screw accessible from both sides

NEW



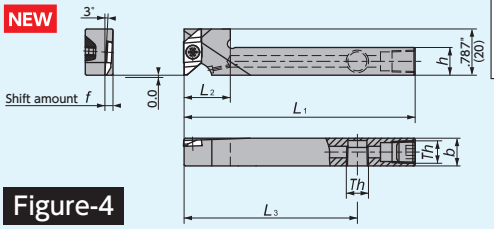


Figure-4

Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: M6, Rc1/8 (PT1/8)

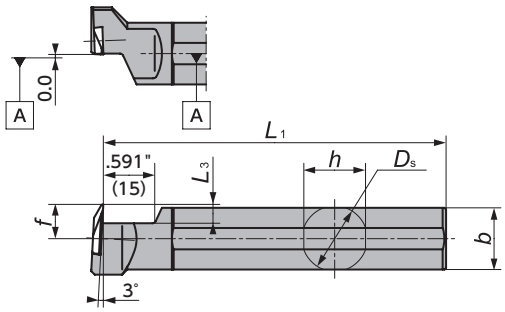
Right-Hand style shown
Takes Right-hand Insert

TBP Series - Toolholders

■TBP

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	h_2 (Inch)	h_2 (mm)	L_3 (Inch)	L_3 (mm)	Th	Clamp Screw	Wrench
 TBP..	TBP$\frac{R}{L}$06-IN	1	●		3/8		3/8		3/8		4.724	120	.138	3.5	–	–	.079	2	.217	5.5	–	LR1S-4×10PW	CLR-15S
	TBP$\frac{R}{L}$08-IN	1	●		1/2		1/2		1/2		4.724	120	.138	3.5	–	–	0	0	.217	5.5	–	LR1S-4×12PW	CLR-15S
	TBP$\frac{R}{L}$10-IN	1	●		5/8		5/8		5/8		4.724	120	.138	3.5	–	–	0	0	.217	5.5	–	LR1S-4×12PW	CLR-15S
	TBP$\frac{R}{L}$08	1	○	○	.315	8	.394	10	.315	8	4.724	120	.138	3.5	–	–	.157	4	.217	5.5	–	LR1S-4×10PW	CLR-15S
	TBP$\frac{R}{L}$10H	1	○		.394	10	.394	10	.394	10	3.937	100	.138	3.5	–	–	.394	2	.217	5.5	–	LR1S-4×10PW	CLR-15S
	TBP$\frac{R}{L}$10	1	○	○	.394	10	.394	10	.394	10	4.724	120	.138	3.5	–	–	.394	2	.217	5.5	–	LR1S-4×10PW	CLR-15S
	TBP$\frac{R}{L}$12GX	1	○		.472	12	.472	12	.472	12	3.346	85	.138	3.5	–	–	0	0	.217	5.5	–	LR1S-4×12PW	CLR-15S
	TBP$\frac{R}{L}$12	1	●	○	.472	12	.472	12	.472	12	4.724	120	.138	3.5	–	–	0	0	.217	5.5	–	LR1S-4×12PW	CLR-15S
	TBP$\frac{R}{L}$13	1	○		.512	13	.512	13	.512	13	4.724	120	.138	3.5	–	–	0	0	.217	5.5	–	LR1S-4×12PW	CLR-15S
	TBP$\frac{R}{L}$16H	1	○		.630	16	.630	16	.630	16	3.937	100	.138	3.5	–	–	0	0	.217	5.5	–	LR1S-4×12PW	CLR-15S
	TBP$\frac{R}{L}$16	1	○	○	.630	16	.630	16	.630	16	4.724	120	.138	3.5	–	–	0	0	.217	5.5	–	LR1S-4×12PW	CLR-15S
	TBP$\frac{R}{L}$06-IN-OH	2	●		3/8		.472	12	3/8		3.937	100	.138	3.5	.748	19	.176	4.475	2.953	75	M6 × 1	LR1S-4×10PW	CLR-15S
	TBP$\frac{R}{L}$08-IN-OH	2	●		1/2		1/2		1/2		3.937	100	.138	3.5	.394	10	.051	1.3	2.953	75	NPT1/8	LR1S-4×12PW	CLR-15S
	TBP$\frac{R}{L}$10-IN-OH	2	●		5/8		5/8		5/8		3.937	100	.138	3.5	0	0	0	0	2.953	75	NPT1/8	LR1S-4×12PW	CLR-15S
	TBP$\frac{R}{L}$1012H-OH	2	○		.394	10	.472	12	.394	10	3.937	100	.138	3.5	.748	19	.176	4.475	2.953	75	M6 × 1	LR1S-4×10PW	CLR-15S
	TBP$\frac{R}{L}$12H-OH	2	●		.472	12	.472	12	.472	12	3.937	100	.138	3.5	.394	10	.051	1.3	2.953	75	Rc1/8(PT1/8)	LR1S-4×12PW	CLR-15S
	TBP$\frac{R}{L}$16H-OH	2	○		.630	16	.630	16	.630	16	3.937	100	.138	3.5	0	0	0	0	2.953	75	Rc1/8(PT1/8)	LR1S-4×12PW	CLR-15S
	Y-TBP$\frac{R}{L}$06-IN	3	●		3/8		3/8		–	–	2.756	70	.138	3.5	.984	25	–	–	–	–	–	LR1S-4×10PW	CLR-15S
	Y-TBP$\frac{R}{L}$08-IN	3	●		1/2		1/2		–	–	2.756	70	.138	3.5	.984	25	–	–	–	–	–	LR1S-4×12PW	CLR-15S
	Y-TBP$\frac{R}{L}$10-IN	3	●		5/8		5/8		–	–	2.756	70	.138	3.5	.984	25	–	–	–	–	–	LR1S-4×12PW	CLR-15S
	Y-TBP$\frac{R}{L}$10MS	3	○		.394	10	.394	10	–	–	4.724	120	.138	3.5	.866	22	–	–	–	–	–	LR1S-4×10PW	CLR-15S
	Y-TBP$\frac{R}{L}$10S	3	○		.394	10	.394	10	–	–	4.724	120	.138	3.5	.787	20	–	–	–	–	–	LR1S-4×10PW	CLR-15S
	Y-TBP$\frac{R}{L}$12MS	3	○		.472	12	.472	12	–	–	4.724	120	.138	3.5	.866	22	–	–	–	–	–	LR1S-4×12PW	CLR-15S
	Y-TBP$\frac{R}{L}$12S	3	○		.472	12	.472	12	–	–	4.724	120	.138	3.5	.787	20	–	–	–	–	–	LR1S-4×12PW	CLR-15S
	Y-TBP$\frac{R}{L}$08H-IN-OH	4	●		1/2		1/2		–	–	3.937	100	.138	3.5	.984	25	–	–	2.953	75	NPT1/8	LR1S-4×12PW	CLR-15S
	Y-TBP$\frac{R}{L}$12HS-OH	4	●		.472	12	.472	12	–	–	3.937	100	.138	3.5	.787	20	–	–	2.953	75	Rc1/8(PT1/8)	LR1S-4×12PW	CLR-15S
	Y-TBP$\frac{R}{L}$16H-OH	4	○		.630	16	.630	16	–	–	3.937	100	.138	3.5	.984	25	–	–	2.953	75	Rc1/8(PT1/8)	LR1S-4×12PW	CLR-15S

DS-TBP



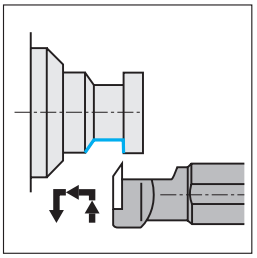


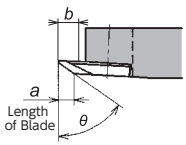
Figure-5

Left-Hand style shown
Takes Right-hand Insert

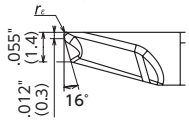
DS-TBP (Takes right-hand inserts)

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_3 (Inch)	L_3 (mm)	Clamp Screw	Wrench
 TBP..FR..	DS-TBPR/L19	5		○	3/4	19.050	.709	18	.709	18	4.724	120	.433	11.0	.217	5.5	LRIS-4 × 10	LLR-25S-20×65
	DS-TBPR/L20	5		○	.787	20.000	.748	19	.748	19	4.724	120	.433	11.0	.217	5.5	LRIS-4 × 10	LLR-25S-20×65
	DS-TBPR/L25	5		○	1.00	25.400	.945	24	.945	24	5.906	150	.512	13.0	.217	5.5	LRIS-4 × 10	LLR-25S-20×65

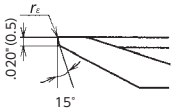
TBP Series - Inserts

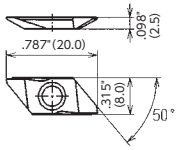


with BM-Chipbreaker NEW



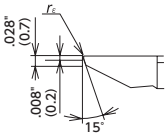
with Chipbreaker



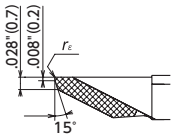


without Chipbreaker

Mirror finish



〈PD1〉 PCD tipped



Right-Hand style shown

TBP - Back Turning

Item Number	Chip-breaker	Length of Blade a (Inch)	Length of Blade a (mm)	Max Depth of Cut b (Inch)	Max Depth of Cut b (mm)	θ	r_ε (Inch)	r_ε (mm)	Coated Carbide QM3 R	QM3 L	DT4 R	DT4 L	DM4 R	DM4 L	TM4 R	TM4 L	VM1 R	VM1 L	ZM3 R	ZM3 L	Carbide KM1 R	KM1 L	Coated Cermet C7Z R	C7Z L	PCD PD1 R	PD1 L
TBP72FR/L05-BM	Yes-BM	.138	3.5	.209	5.3	72°	.002	0.05					●		○											
TBP72FR/L10M-BM	Yes-BM	.138	3.5	.209	5.3	72°	.003	0.08					●		○											
TBP72FR/L20M-BM	Yes-BM	.138	3.5	.209	5.3	72°	.007	0.18					●		○											
TBP55FR/L00	Yes	.118	3.0	.209	5.3	55°	0.00	0.00									○		●	○						
TBP55FR/L10	Yes	.118	3.0	.209	5.3	55°	.004	0.10									○		●	○						
TBP60FR/L00	Yes	.146	3.7	.209	5.3	60°	0.00	0.00	●		●				○		○		●	○						
TBP60FR/L05	Yes	.146	3.7	.209	5.3	60°	.002	0.05															○			
TBP60FR/L10	Yes	.146	3.7	.209	5.3	60°	.004	0.10	●						○		●		●	○			○			
TBP60FR/L10M	Yes	.146	3.7	.209	5.3	60°	.003	0.08	●		●						○									
TBP60FR/L20	Yes	.146	3.7	.209	5.3	60°	.008	0.20							○											
TBP60FR/LV (M)	No	.189	4.8	.209	5.3	60°	0.00	0.00									○	○	○		●					
TBP60FR/LV00-P	No	.157	4.0	.209	5.3	60°	0.00	0.00																	○	
TBP60FR/LV05 (M)	No	.189	4.8	.209	5.3	60°	.002	0.05									○				●					
TBP60FR/LV10 (M)	No	.189	4.8	.209	5.3	60°	.004	0.10									○		○		●					
TBP60FR/LV10-P	No	.157	4.0	.209	5.3	60°	.004	0.10																	○	

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

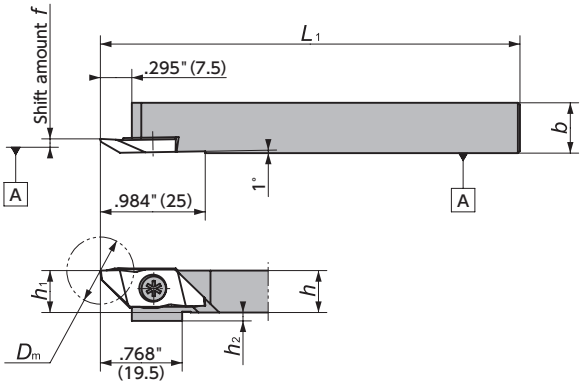
● : Stock ○ : 1-2 week delivery 💧 : Coolant through (M) : Mirror finish

Cutting condition ➡R3

TBPA (CTPA Series) *Can use same holder with CTPA inserts.

CTPA

Screw accessible from both sides



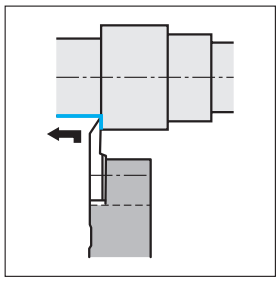


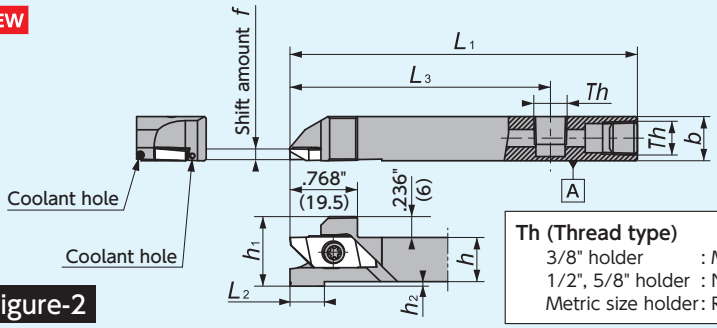
Figure-1

Right-Hand style shown

CTPA-OH / TBPA-OH

Screw accessible from both sides

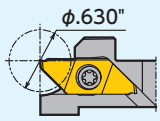
NEW



Th (Thread type)
3/8" holder : M6×1
1/2", 5/8" holder : NPT1/8
Metric size holder: Rc1/8 (PT1/8)

Max Bar Dia at Max DOC

CTPA-OH



TBPA-OH

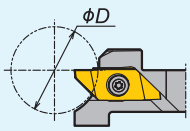
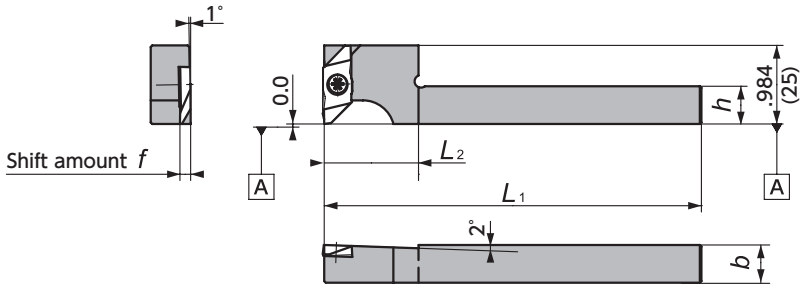


Figure-2

Right-Hand style shown

Y-CTPA

Screw accessible from both sides



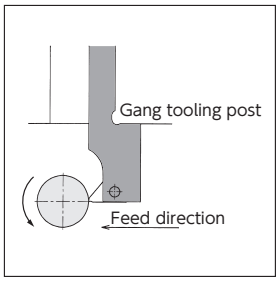
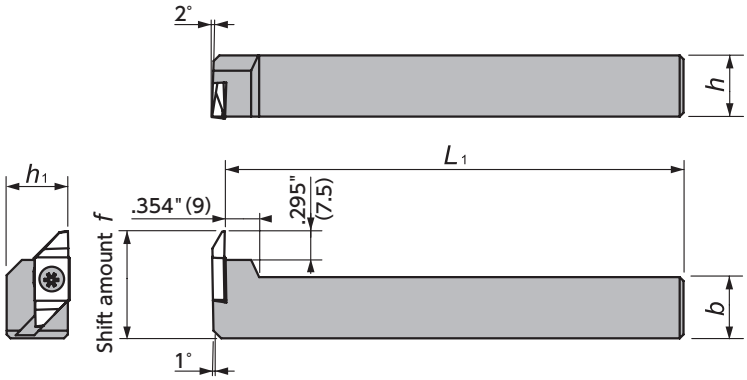


Figure-3

Right-Hand style shown
Takes Right-hand Insert

CH-TBPA



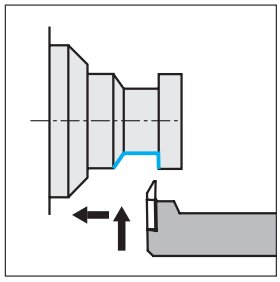


Figure-4

Left-Hand style shown
Takes Right-hand Insert

TBPA (CTPA) Series - Toolholders

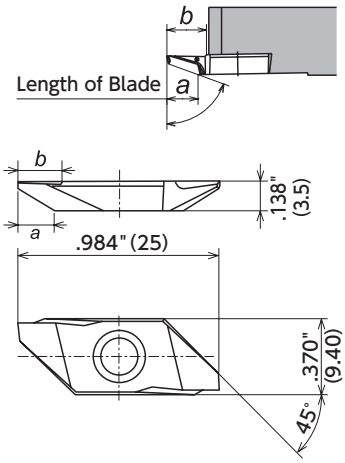
CTPA (Compatible with TBPA & CTPA Inserts)

Gage Insert	Item Number	Figure	Stock R	Stock L	Max. Bar Dia. φD (Inch)	Max. Bar Dia. φD (mm)	h (Inch)	h (mm)	h_1 (Inch)	h_1 (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	h_2 (Inch)	h_2 (mm)	L_2 (Inch)	L_2 (mm)	L_3 (Inch)	L_3 (mm)	Th	f (Inch)	f (mm)	Clamp Screw	Wrench
 TBPA..	CTPA□06-IN	1	●	●	—	—	3/8		3/8		3/8		4.724	120	0	0	—	—	—	—	—	.134	3.4	LRIS-4×10PW	CLR-15S
	CTPA□08-IN	1	●	●	—	—	1/2		1/2		1/2		4.724	120	0	0	—	—	—	—	—	.134	3.4	LRIS-4×12PW	CLR-15S
	CTPA□10-IN	1	●	●	—	—	5/8		5/8		5/8		4.724	120	0	0	—	—	—	—	—	.134	3.4	LRIS-4×12PW	CLR-15S
	CTPA□10	1	○	○	—	—	.394	10	.394	10	.394	10	4.724	120	.790	2	—	—	—	—	—	.134	3.4	LRIS-4×10PW	CLR-15S
	CTPA□12	1	●	●	—	—	.472	12	.472	12	.472	12	4.724	120	0	0	—	—	—	—	—	.134	3.4	LRIS-4×12PW	CLR-15S
	CTPA□16	1	○	○	—	—	.630	16	.630	16	.630	16	4.724	120	0	0	—	—	—	—	—	.134	3.4	LRIS-4×12PW	CLR-15S
	CTPA□20F	1	○	○	—	—	.787	20	.787	20	.787	20	3.150	80	0	0	—	—	—	—	—	.134	3.4	LRIS-4×10	LLR-15S
	CTPA□06H-IN-OH 💧	2	●	●	.630	16	3/8		3/8		3/8		3.937	100	.176	4.475	.787	20	2.165	55	M6×1	.134	3.4	LRIS-4×10PW	CLR-15S
	CTPA□08H-IN-OH 💧	2	●	●	.630	16	1/2		1/2		1/2		3.937	100	.051	1.3	.394	10	2.953	75	NPT1/8	.134	3.4	LRIS-4×12PW	CLR-15S
	CTPA□10H-IN-OH 💧	2	●	●	.630	16	5/8		5/8		5/8		3.937	100	0	0	0	0	2.953	75	NPT1/8	.134	3.4	LRIS-4×12PW	CLR-15S
	CTPA□12H-OH 💧	2	●	●	.630	16	.472	12	.472	12	.472	12	3.937	100	.079	2	.768	19.5	.394	10	Rc1/8(PT1/8)	.134	3.4	LRIS-4×12PW	CLR-15S
	CTPA□16H-OH 💧	2	○	○	.630	16	.630	16	.630	16	.630	16	3.937	100	0	0	.768	19.5	0	0	Rc1/8(PT1/8)	.134	3.4	LRIS-4×12PW	CLR-15S
	Y-CTPA□08L-IN	3	●		—	—	1/2		—	—	1/2		4.724	120	—	—	1.181	30	—	—	—	1.34	34	LRIS-4×12PW	CLR-15S
	CH-TBPAL16	4		○	—	—	.630	16	.630		.630	16	4.724	120	—	—	—	—	—	—	—	1.102	28	LRIS-4×10	LLR-15S
	CH-TBPAL20	4		○	—	—	.787	20	.787		.787	20	4.724	120	—	—	—	—	—	—	—	1.260	32	LRIS-4×10	LLR-15S

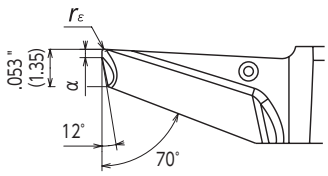
TBPA (Optimized for TBPA Inserts)

Gage Insert	Item Number	Figure	Stock R	Stock L	Max. Bar Dia. φD (Inch)	Max. Bar Dia. φD (mm)	h (Inch)	h (mm)	h_1 (Inch)	h_1 (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	h_2 (Inch)	h_2 (mm)	L_2 (Inch)	L_2 (mm)	L_3 (Inch)	L_3 (mm)	Th	f (Inch)	f (mm)	Clamp Screw	Wrench
 TBPA..	TBPA□12H-OH 💧	2	○		.984	25	.472	12	.472	12	.472	12	3.937	100	.157	4	.768	19.5	.394	10	Rc1/8(PT1/8)	.134	3.4	LRIS-4X12PW	CLR-15S
	TBPA□16H-OH 💧	2	○		1.378	35	.630	16	.630	16	.630	16	3.937	100	.079	2	.768	19.5	.394	10	Rc1/8(PT1/8)	.134	3.4	LRIS-4X12PW	CLR-15S
	TBPA□20H-OH 💧	2	○		1.969	50	.787	20	.787	20	.787	20	3.937	100	0	0	.768	19.5	0	0	Rc1/8(PT1/8)	.134	3.4	LRIS-4X12PW	CLR-15S

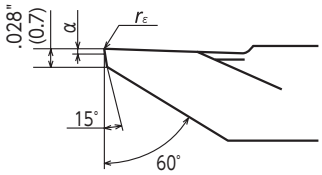
TBPA Series - Inserts



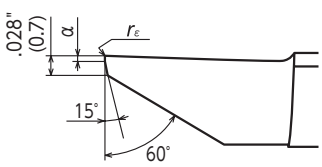
with BM-Chipbreaker NEW



with Chipbreaker



without Chipbreaker



Right-Hand style shown

TBPA - Back Turning

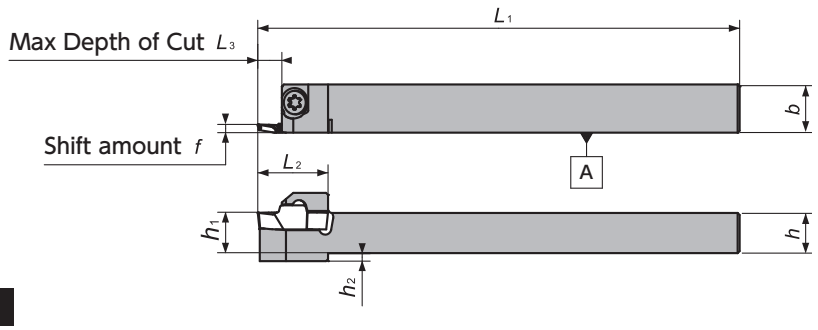
Item Number	Chip-breaker	Length of Blade a (Inch)	Length of Blade a (mm)	Max Depth of Cut b (Inch)	Max Depth of Cut b (mm)	α (Inch)	α (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide QM3 R	QM3 L	DT4 R	DT4 L	DM4 R	DM4 L	TM4 R	TM4 L	VM1 R	VM1 L	ZM3 R	ZM3 L
TBPA70F□05-BM	Yes-BM	.217	5.5	.256	6.5	.012	0.3	.002	0.05					●		○					
TBPA70F□10M-BM	Yes-BM	.217	5.5	.256	6.5	.012	0.3	.003	0.08					●		○					
TBPA70F□20M-BM	Yes-BM	.217	5.5	.256	6.5	.012	0.3	.007	0.18					●		○					
TBPA60F□VB Ⓜ	Yes	.177	4.5	.209	5.3	.008	0.2	.000	0.00			○						○		●	○
TBPA60F□10M	Yes	.177	4.5	.209	5.3	.012	0.3	.003	0.08	●											
TBPA60F□PB10M Ⓜ	Yes	.177	4.5	.209	5.3	.012	0.3	.003	0.08			●						○			
TBPA60F□PB10 Ⓜ	Yes	.177	4.5	.209	5.3	.012	0.3	.004	0.10									○		○	○
TBPA60F□PB20M Ⓜ	Yes	.177	4.5	.209	5.3	.012	0.3	.007	0.18			●									
TBPA60F□V Ⓜ	No	.248	6.3	.268	6.8	.008	0.2	.000	0.00									○		○	○

● : Stock ○ : 1-2 week delivery 💧 : Coolant through Ⓜ : Mirror finish

Cutting condition ➡R3

TBDP (Back Duo) Series

TBDP



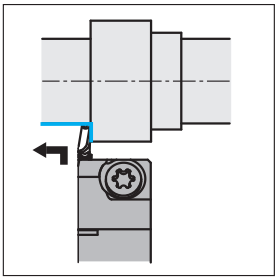
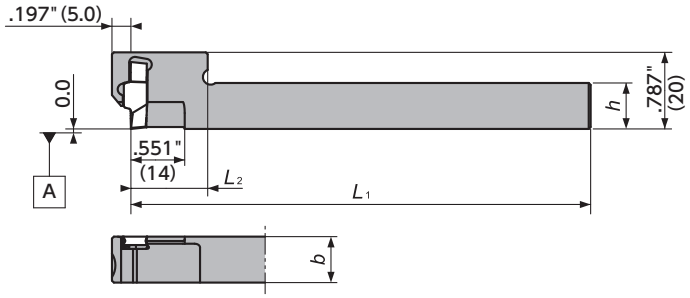


Figure-1

Right-Hand style shown

Y-TBDP

NEW



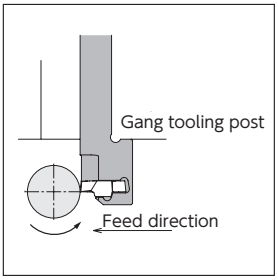


Figure-2

Right-Hand style shown

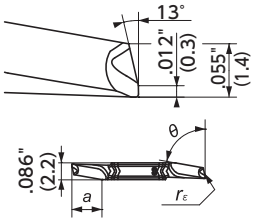
TBDP Series - Toolholders

TBDP

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	L_3 (Inch)	L_3 (mm)	h_2 (Inch)	h_2 (mm)	Clamp Screw	Wrench
 TBDP..	**TBDP R/L 06-IN**	1	●		3/8		.472	12	3/8		4.724	120	.081	2.05	.571	14.5	.118	3	.079	2	LRIS-4 × 12	LLR-25S
	TBDP R/L 08-IN	1	●		1/2		1/2		1/2		4.724	120	.081	2.05	.689	17.5	.197	5	0	0	LRIS-4 × 12	LLR-25S
	TBDP R/L 10-IN	1	●		5/8		5/8		5/8		4.724	120	.081	2.05	.768	19.5	.197	5	0	0	LRIS-4 × 12	LLR-25S
	TBDP R/L 1012H	1	○		.394	10	.472	12	.394	10	3.937	100	.081	2.05	.591	15	.118	3	.079	2	LRIS-4 × 12	LLR-25S
	TBDP R/L 1012	1	○	○	.394	10	.472	12	.394	10	4.724	120	.081	2.05	.591	15	.118	3	.079	2	LRIS-4 × 12	LLR-25S
	TBDP R/L 12	1	●	○	.472	12	.472	12	.472	12	4.724	120	.081	2.05	.709	18	.197	5	0	0	LRIS-4 × 12	LLR-25S
	TBDP R/L 16	1	○	○	.630	16	.630	16	.630	16	4.724	120	.081	2.05	.768	19.5	.197	5	0	0	LRIS-4 × 12	LLR-25S
	TBDP R/L 20	1	○		.787	20	.787	20	.787	20	4.724	120	.081	2.05	.768	19.5	.197	5	0	0	LRIS-4 × 12	LLR-25S
	Y-TBDP R/L 12S	2	○		.472	12	.472	12	–	–	4.724	120	.081	2.05	.787	20	–	–	–	–	LRIS-4 × 12	LLR-25S

TBDP Series - Inserts

TBDP

Shape	Item Number	Length of Blade *a* (Inch)	Length of Blade *a* (mm)	θ	r_ε (Inch)	r_ε (mm)	Coated Carbide QM3	Coated Carbide DM4	Coated Carbide TM4
	**TBDP22005R**	.138	3.5	80	.002	0.05	●	○	●
	TBDP2201MR	.138	3.5	80	.003	0.08	●	○	●
	TBDP2202MR	.138	3.5	80	.007	0.18	●	○	●

TBVC Series

TBVC

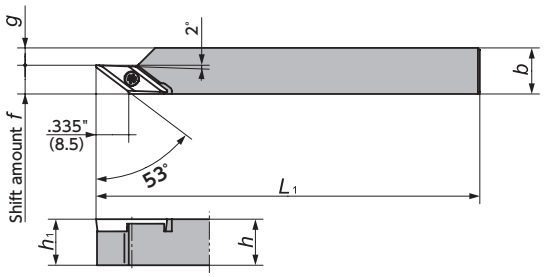
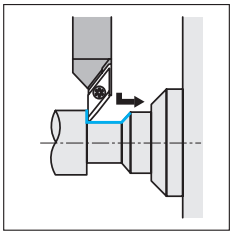


Figure-1



Right-Hand style shown
For non - ferrous material

TBVC-F10

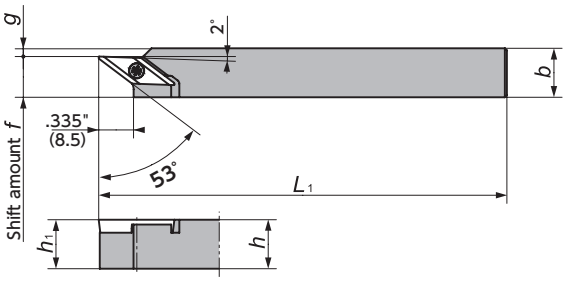
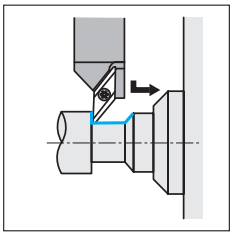


Figure-2



Right-Hand style shown

CH-SVXCL

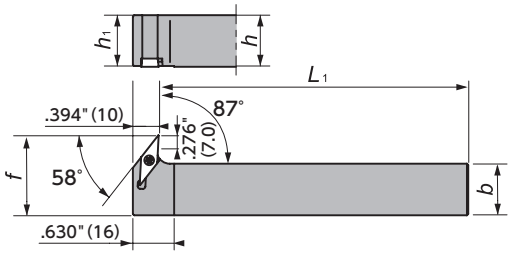
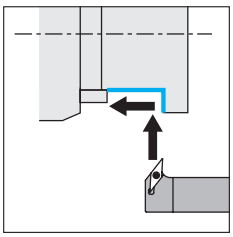


Figure-3

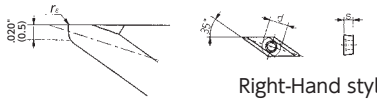


Left-Hand style shown
Takes Right-hand or Neutral chip breaker

TBVC Series - Toolholders

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	g (Inch)	g (mm)	Clamp Screw	Wrench
 TBVC VC..22	**TBVC3/8"10**	1	○		.394	10	.394	10	.394	10	4.724	120	.295	7.5	.098	2.5	LRIS-2.5 × 7	CLR-15S
	TBVC1/2"12	1	○		.472	12	.472	12	.472	12	4.724	120	.295	7.5	.098	4.5	LRIS-2.5 × 7	CLR-15S
	TBVC5/8"16	1	○		.630	16	.630	16	.630	16	4.724	120	.295	7.5	.098	8.5	LRIS-2.5 × 7	CLR-15S
	TBVC1/2"08-F10-IN	2	●		1/2		1/2		1/2		4.724	120	.394	10	0	0	LRIS-2.5 × 7	CLR-15S
	TBVC3/8"10-F10	2	○		.394	10	.394	10	.394	10	4.724	120	.394	10	0	0	LRIS-2.5 × 7	CLR-15S
	TBVC1/2"12GX-F10	2	○		.472	12	.472	12	.472	12	3.346	85	.394	10	.079	2	LRIS-2.5 × 7	CLR-15S
	TBVC1/2"12-F10	2	●		.472	12	.472	12	.472	12	4.724	120	.394	10	.079	2	LRIS-2.5 × 7	CLR-15S
	TBVC5/8"16H-F10	2	○		.630	16	.630	16	.630	16	3.150	100	.394	10	.234	6	LRIS-2.5 × 7	CLR-15S
	TBVC5/8"16-F10	2	●		.630	16	.630	16	.630	16	4.724	120	.394	10	.234	6	LRIS-2.5 × 7	CLR-15S
	TBVC3/4"20F-F10	2	○		.787	20	.787	20	.787	20	3.150	80	.394	10	.394	10	LRIS-2.5 × 7	CLR-15S
	CH-SVXC5/8"1616 × 11	3		○	.630	16	.630	16	.787	20	4.724	120	1.063	27	—	—	LRIS-2.5 × 7	CLR-15S
	CH-SVXC3/4"2020 × 11	3		○	.630	16	.630	16	.787	20	4.724	120	1.220	31	—	—	LRIS-2.5 × 7	CLR-15S

TBVC Series - Inserts

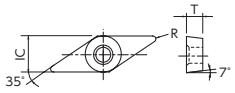
Shape	Item Number	d (Inch)	d (mm)	s (Inch)	s (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide VM1 R	VM1 L	ZM3 R	ZM3 L
 Right-Hand style shown	**TBVC11F3/8"05U**	1/4	6.35	1/8	3.18	.002	0.05			●	
	TBVC11F3/8"10U	1/4	6.35	1/8	3.18	.004	0.10	●		●	
	TBVC11F3/8"10S	1/4	6.35	1/8	3.18	.004	0.10			●	

● : Stock ○ : 1-2 week delivery

Cutting condition ➡R3

VC.. Inserts - Carbide / Cermet

(inch)	IC	T
VC..22	1/4	1/8



VC_ _

		Carbide							Cermet					
		PVD Coated										PVD Coated		
		QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●
Cast Iron	K								●	●		●	●
Non-Ferrous Material	N				●	●	●	●	●	●			●
Heat Resistant Alloy	S	●	●	●	●								
Hardened Material	H	●	●	●									

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
	VCGT 2201 FNAM3	VCGT 110300 FNAM3	1/4	.001	●	●			●	■						
	VCGT 2204M FNAM3	VCGT 110301M FNAM3	1/4	.003	●	●		○	○							
	VCGT 2204 FNAM3	VCGT 110301 FNAM3	1/4	.004					●	○						
	VCGT 2208M FNAM3	VCGT 110302M FNAM3	1/4	.007	●	●		○	○							
	VCGT 2208 FNAM3	VCGT 110302 FNAM3	1/4	.008					●	○						
	VCGT 2208 FNAM3	VCGT 110302 FNXAM3	1/4	.008									○			
	VCGT 221M FNAM3	VCGT 110304M FNAM3	1/4	.015	●	●		○								
	VCGT 221 FNAM3	VCGT 110304 FNAM3	1/4	.016									○			
NEW	VCGT 2204M YL	VCGT 110301M YL	1/4	.003			●	○								
	VCGT 2208M YL	VCGT 110302M YL	1/4	.007			●	○								
	VCGT 221M YL	VCGT 110304M YL	1/4	.015			●	○								
	VCGT 2204M CL	VCGT 110301M CL	1/4	.003		●	○	●								
	VCGT 2208M CL	VCGT 110302M CL	1/4	.007		●	○	●								
	VCGT 2201 AZ7*	VCGT 110300 FNAZ7	1/4	.001	●					○						
	VCGT 2204M AZ7*	VCGT 110301M FNAZ7	1/4	.003	●					○						
	VCGT 2208M AZ7*	VCGT 110302M FNAZ7	1/4	.007	●					○						
	VCGT 221M AZ7*	VCGT 110304M FNAZ7	1/4	.015	●					○						
	VCMT 2204 TR/LAS	VCMT 110301 TR/LAS	1/4	.004									R/L			R/L
	VCMT 2208 TR/LAS	VCMT 110302 TR/LAS	1/4	.008									R/L			R/L
	VCMT 221 TR/LAS	VCMT 110304 TR/LAS	1/4	.016									R/L			R/L
	VCGT 2201 R/LU	VCGT 110300 R/LU	1/4	.001					R	R						
	VCGT 2204M R/LU	VCGT 110301M R/LU	1/4	.003		R										
	VCGT 2204 R/LU	VCGT 110301 R/LU	1/4	.004					R	R						
	VCGT 2208M R/LU	VCGT 110302M R/LU	1/4	.007		R										
	VCGT 2208 R/LU	VCGT 110302 R/LU	1/4	.008					R	R						
	VCET 2203 RUHG	VCET 1103008 R/LUHG	1/4	.003					R							
	VCGW 2201 H Ⓜ	VCGW 110300 H	1/4	.001							●					
	VCGW 2204 H Ⓜ	VCGW 110301 H	1/4	.004							●					
	VCGW 2208 H Ⓜ	VCGW 110302 H	1/4	.008							●					

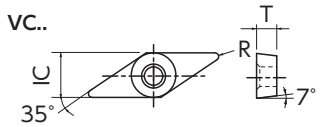






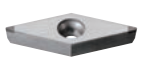
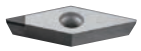


＊To be replaced by version which has 2.0mm higher edge.



		CBN (Brazed)							PCD	
		Coated		Coated						
		B5K	B52	B6K	B36	B40	B23	B30	PD1	PD2
Steel	P									
Stainless Steel	M									
Cast Iron	K	●	●				●	●		
Non-Ferrous Material	N								●	●
Heat Resistant Alloy	S									
Hardened Material	H	●	●	●	●	●				

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	B5K	B52	B6K	B36	B40	B23	B30	PD1	PD2
	VCGW 221 PD	VCGW 110304 PD	S0415	1/4	.016	2	.098		○							
	VCGW 221 PD	VCGW 110304 PD	S0635	1/4	.016	2	.098					○				
	VCGW 222 PD	VCGW 110308 PD	S0415	1/4	.031	2	.063		○							
	VCGW 222 PD	VCGW 110308 PD	S0635	1/4	.031	2	.063					○				
	VCMW 2204	VCMW 110301	None	1/4	.004	1	–								○	
	VCMW 2208	VCMW 110302	None	1/4	.008	1	–								○	
	VCMW 221	VCMW 110304	None	1/4	.016	1	–								○	

TB Series

TBT

Screw accessible from both sides

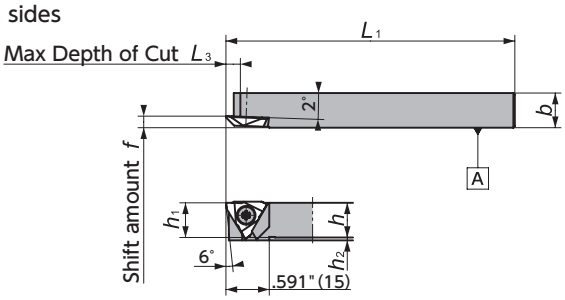
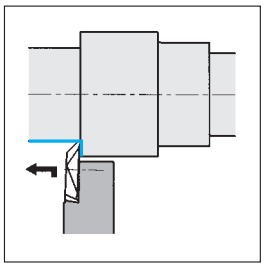


Figure-1



Right-Hand style shown

TB-N

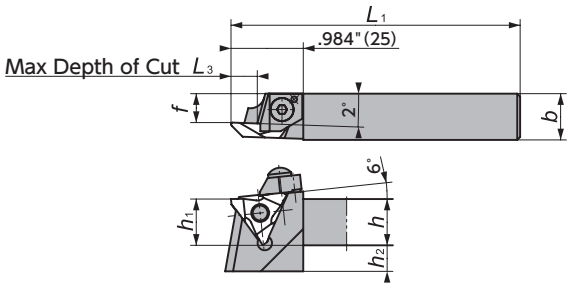
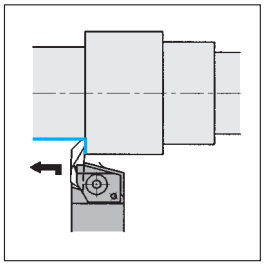


Figure-2



Right-Hand style shown

TB-F

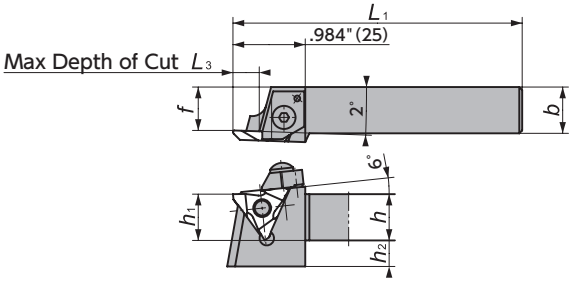
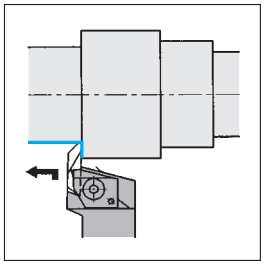


Figure-3



Right-Hand style shown

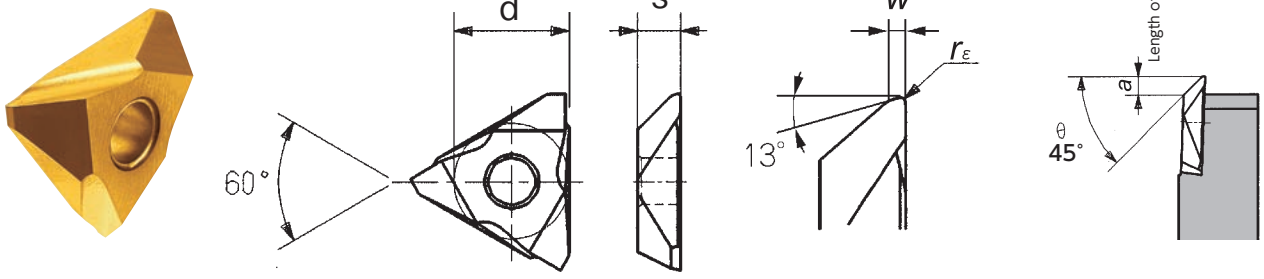
TB Series - Toolholders

TB

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	h_2 (Inch)	h_2 (mm)	f (Inch)	f (mm)	L_3 (Inch)	L_3 (mm)	Clamp Screw	Wrench
 TB32	TBT3/32-06-IN	1	●		3/8		3/8		3/8		4.724	120	.118	3	.157	4	.197	5.0	LR-S-4 × 10PW	CLR-15S
	TBT3/32-08-IN	1	●		1/2		1/2		1/2		4.724	120	.039	1	.157	4	.197	5.0	LR-S-4 × 10PW	CLR-15S
	TBT3/32-08F	1	○	○	.315	8	.315	8	.315	8	3.150	80	.157	5	.157	4	.197	5.0	LR-S-4 × 10PW	CLR-15S
	TBT3/32-08K	1	○	○	.315	8	.315	8	.315	8	4.724	120	.157	5	.157	4	.197	5.0	LR-S-4 × 10PW	CLR-15S
	TBT3/32-10F	1	○	○	.394	10	.394	10	.394	10	3.150	80	.118	3	.157	4	.197	5.0	LR-S-4 × 10PW	CLR-15S
	TBT3/32-10K	1	○	○	.394	10	.394	10	.394	10	4.724	120	.118	3	.157	4	.197	5.0	LR-S-4 × 10PW	CLR-15S
	TBT3/32-12F	1	○	○	.472	12	.472	12	.472	12	3.150	80	.039	1	.157	4	.197	5.0	LR-S-4 × 10PW	CLR-15S
	TBT3/32-12K	1	○	○	.472	12	.472	12	.472	12	4.724	120	.039	1	.157	4	.197	5.0	LR-S-4 × 10PW	CLR-15S
TB42	TB3/32-16N-42	2	○		.630	16	.630	16	.630	16	3.071	78	.354	9	.453	11.5	.354	9.0	—	LW-2.5
TB43	TB3/32-16NS	2	○		.630	16	.630	16	.630	16	3.071	78	.354	9	.394	10	.197	5.0	—	LW-2.5
	TB3/32-16N	2	○	○	.630	16	.630	16	.630	16	3.071	78	.354	9	.394	10	.354	9.0	—	LW-2.5
	TB3/32-16N-H	2	○		.630	16	.630	16	.630	16	3.937	100	.354	9	.394	10	.354	9.0	—	LW-2.5
	TB3/32-16N-K	2	○		.630	16	.630	16	.630	16	4.921	125	.354	9	.394	10	.354	9.0	—	LW-2.5
	TB3/32-20N	2	○	○	.787	20	.787	20	.787	20	3.937	100	.157	5	.394	10	.354	9.0	—	LW-2.5
	TB3/32-25N	2		○	.984	25	.984	25	.984	25	5.906	150	0	0	.394	10	.354	9.0	—	LW-2.5
	TB3/32-16FS	3	○		.630	16	.630	16	.630	16	3.937	100	.354	9	.591	15	.197	5.0	—	LW-2.5
	TB3/32-16F	3	○		.630	16	.630	16	.630	16	3.937	100	.354	9	.591	15	.354	9.0	—	LW-2.5
	TB3/32-20FS	3	○		.787	20	.787	20	.787	20	3.937	100	.157	5	.787	20	.197	5.0	—	LW-2.5
	TB3/32-20F	3	○		.787	20	.787	20	.787	20	3.937	100	.157	5	.787	20	.354	9.0	—	LW-2.5
	TB3/32-25F	3	○		.984	25	.984	25	.984	25	5.906	150	0	0	.984	25	.354	9.0	—	LW-2.5

TB32 • 42 • 43 - Inserts

■TB32 • 42 • 43



Right-Hand style shown

Item Number	Chip-breaker	a (Inch)	a (mm)	θ	r_ε (Inch)	r_ε (mm)	w (Inch)	w (mm)	d (Inch)	d (mm)	s (Inch)	s (mm)	Coated Carbide ZM3 R	Coated Carbide ZM3 L	Cermet XT3 R	Cermet XT3 L	Coated Cermet Z15 R	Coated Cermet Z15 L
TB3200R/L	Yes	.106	2.7	45°	0	0.00	.020	0.5	3/8	9.525	1/8	3.18	●					
TB3205R/L	Yes	.106	2.7	45°	.002	0.05	.020	0.5	3/8	9.525	1/8	3.18	●	○	●			
TB3210R/L	Yes	.106	2.7	45°	.004	0.10	.020	0.5	3/8	9.525	1/8	3.18				○		
TB3215R/L	Yes	.106	2.7	45°	.006	0.15	.020	0.5	3/8	9.525	1/8	3.18	●	○	●	○	○	
TB3220R/L	Yes	.106	2.7	45°	.008	0.20	.020	0.5	3/8	9.525	1/8	3.18	○					
TB4215R/L	Yes	.091	2.3	45°	.006	0.15	.040	1.0	1/2	12.70	1/8	3.18	○					
TB4305R/L	Yes	.157	4.0	45°	.002	0.05	.040	1.0	1/2	12.70	3/16	4.76	●		○			
TB4315R/L	Yes	.157	4.0	45°	.006	0.15	.040	1.0	1/2	12.70	3/16	4.76	●		○	○	○	
TB4340R/L	Yes	.154	3.9	45°	.016	0.40	.040	1.0	1/2	12.70	3/16	4.76	●		○	○	○	

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

● : Stock ○ : 1-2 week delivery

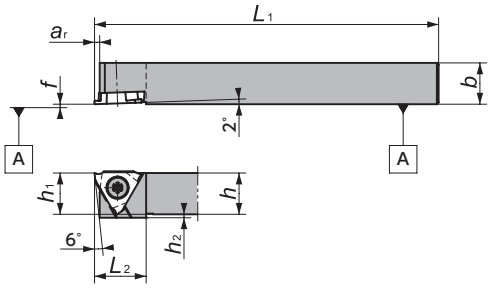
Cutting condition ➡R3

Back Turning

GTT Series

GTT

Screw accessible from both sides



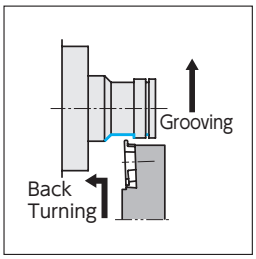


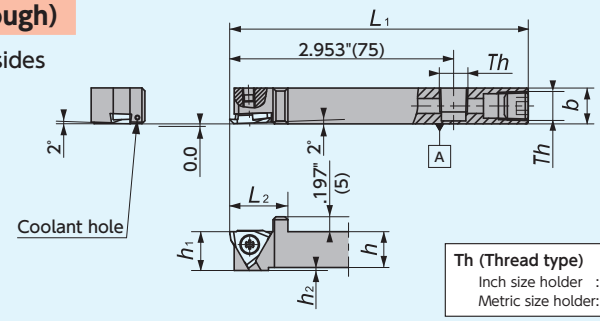
Figure-1

Right-Hand style shown

GTT-OH (Coolant through)

Screw accessible from both sides

NEW



Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: M6, Rc1/8 (PT1/8)

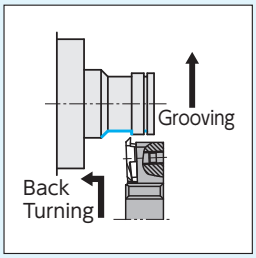
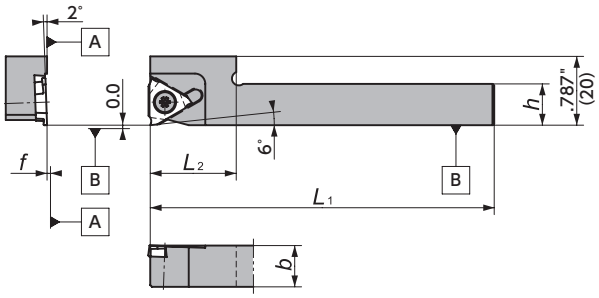


Figure-2

Right-Hand style shown

Y-GTT

Screw accessible from both sides



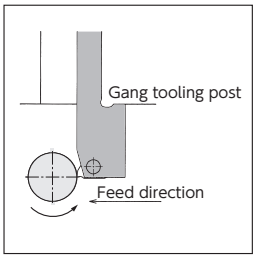


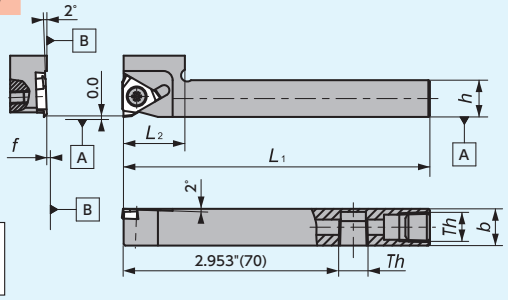
Figure-3

Right-Hand style shown
Takes Right-hand Insert

Y-GTT-OH (Coolant through)

Screw accessible from both sides

NEW



Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: Rc1/8 (PT1/8)

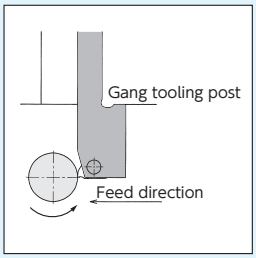
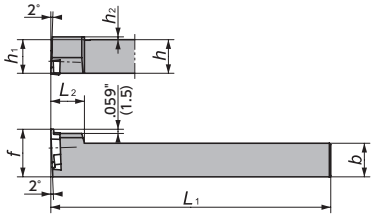


Figure-4

Right-Hand style shown
Takes Right-hand Insert

CH-GTT



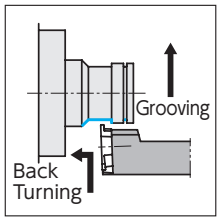
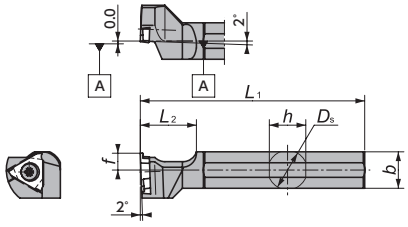


Figure-5

Left-Hand style shown
Takes Right-hand Insert

DS-GTT



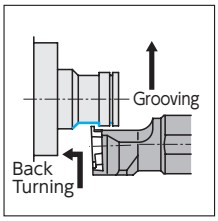


Figure-6

Left-Hand style shown
Takes Right-hand Insert

● : Stock ○ : 1-2 week delivery 💧 : Coolant through

Cutting condition ➡R3

GTT

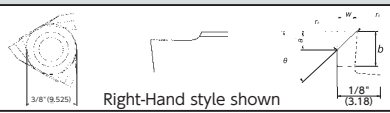
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	a_r (Inch)	a_r (mm)	h_2 (Inch)	h_2 (mm)	Th	Clamp Screw	Wrench
 TBMH32..	GTTR¼06A-IN	1	●	●	3/8		3/8		3/8		4.724	120	.000	0	.591	15.0	.071	1.8	.118	3	–	LR-S-4×10PW	CLR-15S
	GTTR¼06B-IN	1	●	●	3/8		3/8		3/8		4.724	120	.000	0	.591	15.0	.106	2.7	.118	3	–	LR-S-4×10PW	CLR-15S
	GTTR¼08A-IN	1	●	●	1/2		1/2		1/2		4.724	120	.000	0	.591	15.0	.071	1.8	.039	1	–	LR-S-4×10PW	CLR-15S
	GTTR¼08B-IN	1	●	●	1/2		1/2		1/2		4.724	120	.000	0	.591	15.0	.106	2.7	.039	1	–	LR-S-4×10PW	CLR-15S
	GTTR¼10A-IN	1	●	●	5/8		5/8		5/8		4.724	120	.000	0	.591	15.0	.071	1.8	.000	0	–	LR-S-4×10PW	CLR-15S
	GTTR¼10B-IN	1	●	●	5/8		5/8		5/8		4.724	120	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTTR¼12A-IN	1	●	●	3/4		3/4		3/4		4.724	120	.000	0	.591	15.0	.071	1.8	.000	0	–	LR-S-4×10PW	CLR-15S
	GTTR¼12B-IN	1	●		3/4		3/4		3/4		4.724	120	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTTR¼08F00	1	○	○	.315	8	.315	8	.315	8	3.150	80	.000	0	.591	15.0	.071	1.8	.157	5	–	R:LR-S-4×10PW L:LR-S-4×5.8	CLR-15S
	GTTR¼0810F00	1	○	○	.315	8	.394	10	.315	8	3.150	80	.000	0	.591	15.0	.071	1.8	.157	5	–	LR-S-4×10PW	CLR-15S
	GTTR¼08K00	1	○	○	.315	8	.315	8	.315	8	4.724	120	.000	0	.591	15.0	.071	1.8	.157	5	–	R:LR-S-4×10PW L:LR-S-4×5.8	CLR-15S
	GTTR¼0810K00	1	○	○	.315	8	.394	10	.315	8	4.724	120	.000	0	.591	15.0	.071	1.8	.157	5	–	LR-S-4×10PW	CLR-15S
	GTTR¼10F00	1	○		.394	10	.394	10	.394	10	3.150	80	.000	0	.591	15.0	.071	1.8	.118	3	–	LR-S-4×10PW	CLR-15S
	GTTR¼10K00	1	○		.394	10	.394	10	.394	10	4.724	120	.000	0	.591	15.0	.071	1.8	.118	3	–	LR-S-4×10PW	CLR-15S
	GTTR¼12F00	1	○	○	.472	12	.472	12	.472	12	3.150	80	.000	0	.591	15.0	.071	1.8	.040	1	–	LR-S-4×10PW	CLR-15S
	GTTR¼12K00	1	●	○	.472	12	.472	12	.472	12	4.724	120	.000	0	.591	15.0	.071	1.8	.040	1	–	LR-S-4×10PW	CLR-15S
	GTTR¼16H00	1	○	○	.630	16	.630	16	.630	16	3.937	100	.000	0	.591	15.0	.071	1.8	.000	0	–	LR-S-4×10PW	CLR-15S
	GTTR¼16K00	1	○	○	.630	16	.630	16	.630	16	4.724	120	.000	0	.591	15.0	.071	1.8	.000	0	–	LR-S-4×10PW	CLR-15S
	GTTR¼20K00	1	○	○	.787	20	.787	20	.787	20	4.921	125	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTTR¼25M00	1	○	○	.984	25	.984	25	.984	25	5.906	150	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTTR¼10F15	1	○	○	.394	10	.394	10	.394	10	3.150	80	.000	0	.591	15.0	.106	2.7	.118	3	–	LR-S-4×10PW	CLR-15S
	GTTR¼10K15	1	○	○	.394	10	.394	10	.394	10	4.724	120	.000	0	.591	15.0	.106	2.7	.118	3	–	LR-S-4×10PW	CLR-15S
	GTTR¼12F15	1	○	○	.472	12	.472	12	.472	12	3.150	80	.000	0	.591	15.0	.106	2.7	.040	1	–	LR-S-4×10PW	CLR-15S
	GTTR¼12K15	1	○	○	.472	12	.472	12	.472	12	4.724	120	.000	0	.591	15.0	.106	2.7	.040	1	–	LR-S-4×10PW	CLR-15S
	GTTR¼16H15	1	○	○	.630	16	.630	16	.630	16	3.937	100	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTTR¼16K15	1	●	○	.630	16	.630	16	.630	16	4.724	120	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTTR¼10F25	1	○	○	.394	10	.394	10	.394	10	3.150	80	.000	0	.591	15.0	.106	2.7	.118	3	–	LR-S-4×10PW	CLR-15S
	GTTR¼10K25	1	○	○	.394	10	.394	10	.394	10	4.724	120	.000	0	.591	15.0	.106	2.7	.118	3	–	LR-S-4×10PW	CLR-15S
	GTTR¼12F25	1	○	○	.472	12	.472	12	.472	12	3.150	80	.000	0	.591	15.0	.106	2.7	.040	1	–	LR-S-4×10PW	CLR-15S
	GTTR¼12K25	1	○	○	.472	12	.472	12	.472	12	4.724	120	.000	0	.591	15.0	.106	2.7	.040	1	–	LR-S-4×10PW	CLR-15S
	GTTR¼16H25	1	○	○	.630	16	.630	16	.630	16	3.937	100	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTTR¼16K25	1	○	○	.630	16	.630	16	.630	16	4.724	120	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTTR¼08HA-IN-OH	2	●		1/2		1/2		1/2		3.937	100	.000	0	.768	19.5	.071	1.8	.039	1	NPT1/8	LR-S-4×10PW	CLR-15S
	GTTR¼08HB-IN-OH	2	●		1/2		1/2		1/2		3.937	100	.000	0	.768	19.5	.106	2.7	.039	1	NPT1/8	LR-S-4×10PW	CLR-15S
	GTTR¼10HA-IN-OH	2	●		5/8		5/8		5/8		3.937	100	.000	0	.768	19.5	.071	1.8	.000	0	NPT1/8	LR-S-4×10PW	CLR-15S
	GTTR¼10HB-IN-OH	2	●		5/8		5/8		5/8		3.937	100	.000	0	.768	19.5	.106	2.7	.000	0	NPT1/8	LR-S-4×10PW	CLR-15S
	GTTR¼1012H00-OH	2	○		.394	10	.472	12	.394	10	3.937	100	.000	0	.768	19.5	.071	1.8	.039	1	M6 × 1	LR-S-4×10PW	CLR-15S
	GTTR¼12H00-OH	2	●		.472	12	.472	12	.472	12	3.937	100	.000	0	.768	19.5	.071	1.8	.039	1	Rc1/8 (PT1/8)	LR-S-4×10PW	CLR-15S
	GTTR¼16H00-OH	2	○		.630	16	.630	16	.630	16	3.937	100	.000	0	.768	19.5	.071	1.8	0	0	Rc1/8 (PT1/8)	LR-S-4×10PW	CLR-15S
	Y-GTTR¼06-IN	3	●		3/8		3/8		–	–	4.724	120	.000	0	.984	25.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTTR¼08-IN	3	●		1/2		1/2		–	–	4.724	120	.000	0	.984	25.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTTR¼10-IN	3	●		5/8		5/8		–	–	4.724	120	.000	0	.984	25.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT¼10MS	2	○		.394	10	.394	10	–	–	4.724	120	.000	0	.866	22.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT¼10S	3	○		.394	10	.394	10	–	–	4.724	120	.000	0	.787	20.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT¼12MS	2	○		.472	12	.472	12	–	–	4.724	120	.000	0	.866	22.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT¼12S	3	○		.472	12	.472	12	–	–	4.724	120	.000	0	.787	20.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTTR¼08H-IN-OH	4	●		1/2		1/2		–	–	3.937	100	.000	0	.984	25.0	.063	1.6	–	–	NPT1/8	LR-S-4×10PW	CLR-15S
	Y-GTTR¼12H00S-OH	4	●		.472	12	.472	12	–	–	3.937	100	.000	0	.787	20.0	.063	1.6	–	–	Rc1/8 (PT1/8)	LR-S-4×10PW	CLR-15S
	Y-GTTR¼16H00-OH	4	○		.630	16	.472	16	–	–	3.937	100	.000	0	.984	25.0	.063	1.6	–	–	Rc1/8 (PT1/8)	LR-S-4×10PW	CLR-15S
	CH-GTT¼10H00	5		○	.394	10	.394	10	.394	10.0	4.724	120	.591	15	.472	12.0	.059	1.5	.118	3	–	LR-S-4×10PW	CLR-15S
	CH-GTT¼12H00	5		○	.472	12	.472	12	.472	12.0	4.724	120	.669	17	.472	12.0	.059	1.5	.040	1	–	LR-S-4×10PW	CLR-15S

DS-GTT

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Clamp Screw	Wrench
 TBMH32..	DS-GTT¼14F	6		○	.551	14.000	.512	13	.512	13	3.150	80	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT¼15H	6		○	.518	15.875	.591	15	.591	15	3.937	100	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT¼16X	6		●	.630	16.000	.591	15	.591	15	3.740	95	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT¼19	6		●	3/4	19.050	.709	18	.709	18	4.724	120	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT¼20	6		●	.787	20.000	.748	19	.748	19	4.724	120	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT¼22	6		●	.866	22.000	.827	21	.827	21	4.724	120	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT¼25-MET	6		○	.984	25.000	.945	24	.945	24	4.724	120	.394	10	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT¼25	6		●	1	25.400	.945	24	.945	24	5.906	150	.394	10	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT¼32	6		○	.984	25.000	.945	24	.945	24	5.906	150	.394	10	.787	20	LR-S-4 × 9	RLR-20S

GTT Series - Inserts

TBMH32

Shape	Item Number	Chip-breaker	Length of Blade a (Inch)	Length of Blade a (mm)	Max Depth of Cut b (Inch)	Max Depth of Cut b (mm)	w (Inch)	w (mm)	θ	r_ε (Inch)	r_ε (mm)	Coated Carbide ZM3 R	Coated Carbide ZM3 L
 Right-Hand style shown	TBMH32100R¼05-22	Yes	.012	0.3	.071	1.8	.039	1.0	22°	.002	0.05	●	
	TBMH32100R¼05-45	Yes	.035	0.9	.071	1.8	.039	1.0	45°	.002	0.05	●	
	TBMH32150R¼05-22	Yes	.020	0.5	.106	2.7	.059	1.5	22°	.002	0.05	●	
	TBMH32150R¼05-45	Yes	.051	1.3	.102	2.6	.059	1.5	45°	.002	0.05	●	

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

MEMO

S



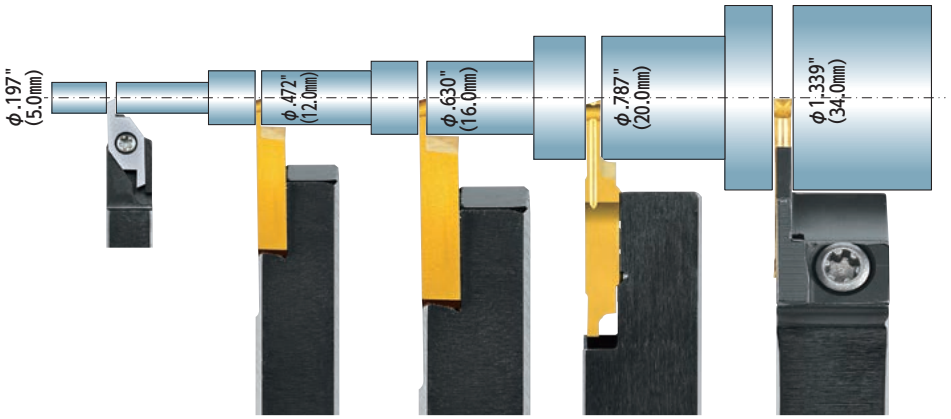
Cut-off / Parting

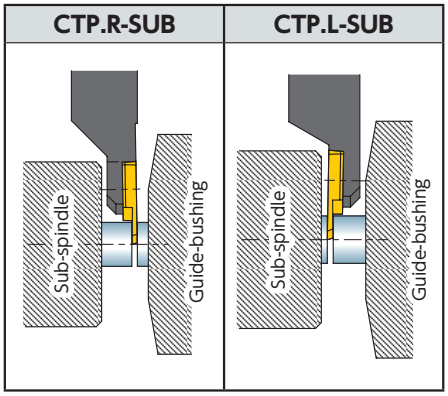
- Cut-off Tooling ····· S2
- Cut-off Tool Selection Guide ····· S4
- Recommended Cutting Conditions ····· S5
- Tool List ····· S6

CSV Series (Up to dia. .197") ····· S6
CTPS Series (Up to dia. .394") ····· S7
CTP Series (Up to dia. .472") ····· S8
CTPA Series (Up to dia. .630") ····· S8
CTPW Series (Up to dia. .787") ····· S8
CTDP Series (Up to dia. 1.339") ····· S14
CTV-S Series (Up to dia. .787") ····· S15
CTV Series (Up to dia. 1.772") ····· S16

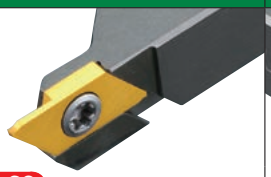
NTK Cut-off Tools - Product Lines

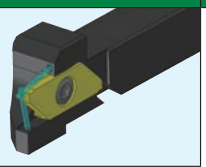
NTK offers a variety of cut-off tools with as narrow a width as .020" (0.5mm)
NTK cut-off tools are specialized for small part applications





Insert	CSV ➡S6	CTPS ➡S7	CTPS-001 ➡S7
Holder	CSV-NC  ➡S6	CTPS  ➡S7	CTPSR-SUB  ➡S7
Max Cut-off Diameter	~ϕ.197" (~5.0mm)	~ϕ.394" (~10.0mm)	~ϕ.157" (~4.0mm)
Blade width	.024" - .059" (0.6 - 1.5mm)	.047" - .079" (1.2 - 2.0mm)	.028" (0.7mm)

Insert	CTP ➡S10・S12			
Holder	CTP  ➡S8	CTP-OH NEW  ➡S8 Coolant through	CTPR-SUB  ➡S8	CTPL-SUB  ➡S8
Max Cut-off Diameter	~ϕ.472" (~12.0mm)			
Blade width	.020" - .079" (0.5 - 2.0mm)			

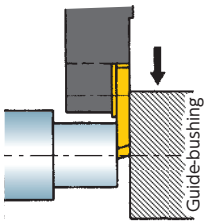
Insert	CTPA ➡S10・S12			
Holder	CTPA  ➡S8	CTPA-OH NEW  ➡S8 Coolant through	CTPAR-SUB  ➡S8	CTPAL-SUB  ➡S8
Max Cut-off Diameter	~ϕ.630" (~16.0mm)			
Blade width	.028" - .118" (0.7 - 3.0mm)			

Insert	CTPW ➡S10・S12	CTDP ➡S14
Holder	CTPW  ➡S8	CTDP  ➡S14
Max Cut-off Diameter	~ϕ.787" (~20.0mm)	~ϕ1.339" (~34.0mm)
Blade width	.098" (2.5mm)	.079"•.098" (2.0•2.5mm)

Insert	CTV-S ➡S15		CTV ➡S17		
Holder	CTV-K2  ➡S15	CTVN-K2  ➡S15	CTV-S  ➡S16	CTV-M (B)  ➡S16	CTV-X  ➡S16
Max Cut-off Diameter	~ϕ.787" (~20.0mm)		~ϕ1.378" (~35.0mm)	~ϕ1.772" (~45.0mm)	~1.378" (~35.0mm)
Blade width	.087" - .098" (2.2 - 2.5mm)		.098"•.118" (2.5•3.0mm)	.098"•.118" (2.5•3.0mm)	.118" (3.0mm)

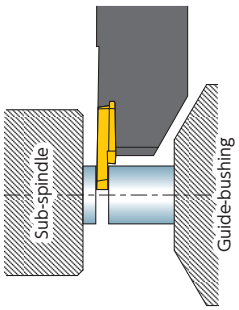
■ CTP/CTPA/CTPS/CTPW selection guide : Right hand? Or Left hand?

Right-hand recommended



R-hand Toolholder using a R-hand insert with lead angle

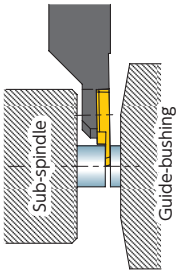
Left-hand recommended



L-hand Toolholder with a non-lead angle insert when the bar stock is held by sub-spindle

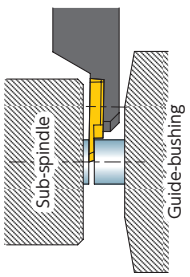
■ CTP/CTPA-SUB selection guide Right hand? Or Left hand?

Right-hand recommended



R-hand Toolholder with R-hand insert with lead angle for longer parts or small diameter part. When part length is too short for sub-spindle to hold, use L-hand with slower speed.

Left-hand recommended



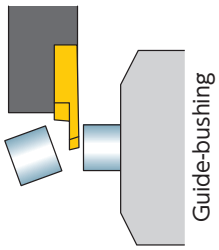
L-hand with L-hand insert with lead angle for short part

More information ➡S4

Cut-off Tool Selection Guide

Right-hand combination

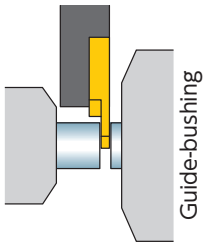
FR, FRFT, FRV Style



FRFT: Flat top
FRV : Flat top with mirror finish

- Common geometry in cut-off
- Lead angle minimizes center-boss
- End face is likely to get scratched from chip control because of lead angle and chip-breaker configuration
- Good for small diameter machining as it cuts near guide-bushing

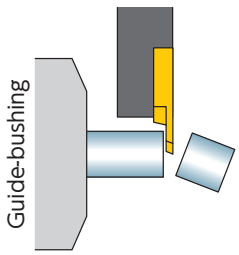
FRN, FRS,FRNV Style



FRS : Flat top
FRNV: Flat top with mirror finish

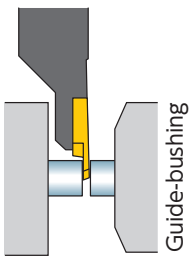
- Good for small diameter machining as it cuts near guide-bushing
- 1st recommendation when sub-spindle holds the part
- No lead angle helps to prevent scratches on both faces

FRK Style



- Used with inverse spindle rotation
- Short part length and using sub-spindle
- Less burrs with hollow work

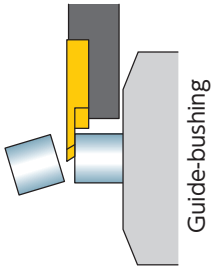
CTP. R-SUB



- Recommended when cut-off point is close to guide-bushing for small and thin parts
- When the part length is short, extended sub-spindle guide-bushing is generally used

Left-hand combination

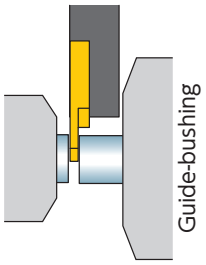
FLK, FLKFT, FLKV Style



FLKFT: Flat top
FLKV : Flat top with mirror finish

- Can cut-off closer to the sub-spindle
- Less burrs with hollow work
- Sub-spindle should hold the work

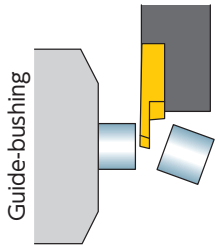
FLN, FLS Style



FLS: Flat top

- Recommended when required to cut-off close to the sub-spindle due to short part length
- Good for big diameter part
- No lead angle helps to prevent scratches on both faces
- Sub-spindle should hold the work

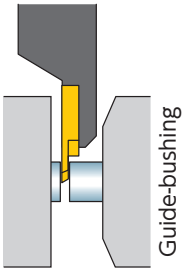
FL, FLV Style



FLV: Flat top with mirror finish

- Used with inverse spindle rotation
- Without sub-spindle
- Less burrs with hollow work

CTP. L-SUB



- Recommended when required to cut-off close to the sub-spindle especially with small diameters
- Can cut much closer to the sub-spindle than the other left-handed tool holders
- Sub-spindle should hold the work

Recommended Cutting Conditions

Cut-off

CSVT

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4					VM1	
	2nd choice	VM1					DT4	
Cutting Speed (SFM)		100 **160** 230				100 **200** 300		
Feed Rate (IPR)		.0004 **.0008** .0012				.0004 **.0012** .0020		

CTP / CTPA / CTPS / CTPW

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4				TM4	QM3	
	2nd choice	TM4			QM3 / VM1	QM3	TM4 / DT4 / C7Z(X)	
Cutting Speed (SFM)		100 **160** 230				100 **200** 300		
Feed Rate (IPR)		.0008 **.0012** .0020				.0008 **.0016** .0024		

CTDP / CTV

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DM4				TM4	QM3	
	2nd choice	TM4 / QM3				QM3	TM4 / DM4	
Cutting Speed (SFM)		100 **160** 230				100 **200** 300		
Feed Rate (IPR)		.0012 **.0020** .0031				.0016 **.0031** .0047		

1st Recommendation style for Cut-off Diameter

Cut-off diameter (ϕ)		
-.197"	CSV style	➡S6 
.197"-.472"	CTP style	➡S8 
.472"-.630"	CTPA style	➡S8 
	CTDP style	➡S14 
.630"-	CTDP style	➡S14 

CSV Series

Best for up to .200" diameter material

CSV-NC For Gang-style machine

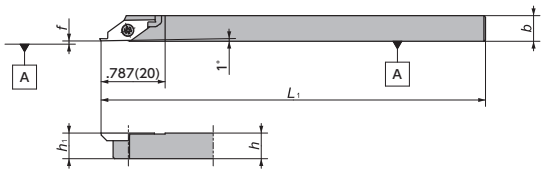


Figure-1

Right-Hand style shown

CSV For Cam-style machine

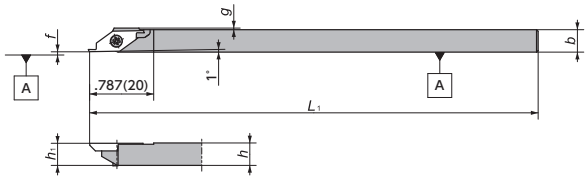


Figure-2

Right-Hand style shown

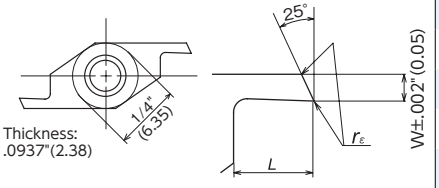
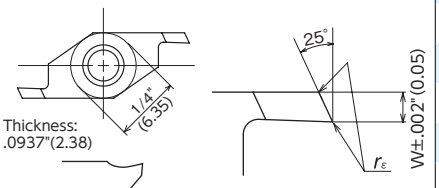
CSV Series - Toolholders

■CSV R/L / CSV R/L-NC

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	g (Inch)	g (mm)	Clamp Screw	Wrench
 CSV..11..	CSVR/L06-IN-NC	1	●	●	3/8		3/8		3/8		4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L08-IN-NC	1	●	●	1/2		1/2		1/2		4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L08NC	1	○	○	.315	8	.315	8	.315	8	4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L08NC-F	1	○		.315	8	.315	8	.315	8	4.724	120	0–.004	0.0–0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L10GXNC	1	○		.394	10	.394	10	.394	10	3.346	85	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L10NC	1	○	○	.394	10	.394	10	.394	10	4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L12NC	1	●	●	.472	12	.472	12	.472	12	4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L07GX	2	○		.275	7	.275	7	.275	7	3.346	85	.004	0.1	.020	0.5	LRIS-2.5 × 7	CLR-15S
	CSVR/L07	2	○	●	.275	7	.275	7	.275	7	5.512	140	.004	0.1	.020	0.5	LRIS-2.5 × 7	CLR-15S
	CSVR/L08GX	2	○		.315	8	.315	8	.315	8	3.346	85	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L08	2	●	●	.315	8	.315	8	.315	8	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L095	2	○		.374	9.5	.374	9.5	.374	9.5	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L10	2	●	○	.394	10	.394	10	.394	10	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L12GX	2	○		.472	12	.472	12	.472	12	3.346	85	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L12	2	●		.472	12	.472	12	.472	12	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S

CSV Series - Inserts

■CSVC - Cut-off Mirror finish

Shape	Item Number	Chip-breaker	Max. Cut-off Dia. φD (Inch)	φD (mm)	w (Inch)	w (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	VM1 R	VM1 L
 Thickness: .0937"(2.38) 1/4" (6.35) 25° W±.002" (0.05) r_ε L Right-Hand style shown	CSVC11FR/LV06 M	No	.118	3.0	.024	0.6	.079	2.0	0	0.0	○	
	CSVC11FR/LV07 M	No	.157	4.0	.028	0.7	.098	2.5	0	0.0	●	●
	CSVC11FR/LV08 M	No	.157	4.0	.031	0.8	.098	2.5	0	0.0	○	○
	CSVC11FR/LV09 M	No	.157	4.0	.035	0.9	.098	2.5	0	0.0	○	
	CSVC11FR/LV10 M	No	.197	5.0	.039	1.0	.118	3.0	0	0.0	●	●
	CSVC11FR/LV13 M	No	.197	5.0	.051	1.3	.118	3.0	0	0.0	●	○
	CSVC11FR/LV15 M	No	.197	5.0	.059	1.5	.118	3.0	0	0.0	○	○
 Thickness: .0937"(2.38) 1/4" (6.35) 25° W±.002" (0.05) r_ε Right-Hand style shown	CSVC11FR/LVB06 M	Yes	.118	3.0	.024	0.6	.079	2.0	0	0.0	○	
	CSVC11FR/LVB07 M	Yes	.157	4.0	.028	0.7	.098	2.5	0	0.0	●	
	CSVC11FR/LVB08 M	Yes	.157	4.0	.031	0.8	.098	2.5	0	0.0	○	
	CSVC11FR/LVB09 M	Yes	.157	4.0	.035	0.9	.098	2.5	0	0.0	○	
	CSVC11FR/LVB10 M	Yes	.197	5.0	.039	1.0	.118	3.0	0	0.0	●	
	CSVC11FR/LVB13 M	Yes	.197	5.0	.051	1.3	.118	3.0	0	0.0	○	
	CSVC11FR/LVB15 M	Yes	.197	5.0	.059	1.5	.118	3.0	0	0.0	○	

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

CSV series ➡O27

CTPS Series

CTPS Max. Cut-off Dia. .394" (10.0mm)

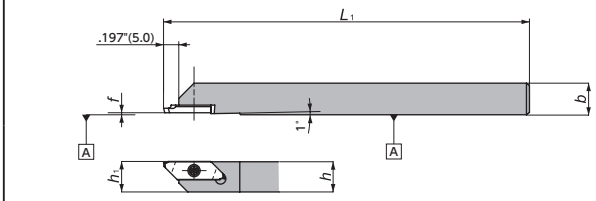


Figure-1 Right-Hand style shown

CTPSR-SUB Max. Cut-off Dia. .157" (4.0mm)

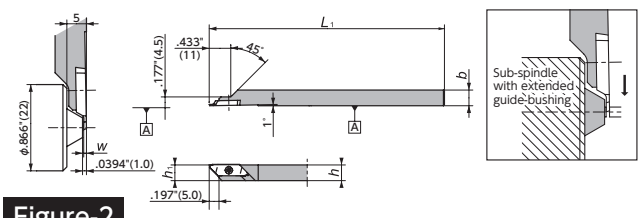


Figure-2 Right-Hand style shown

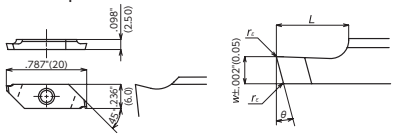
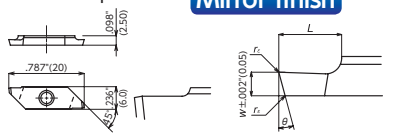
CTPS Series - Toolholders

■CTPS / CTPSR

Gage Insert	Item Number	Figure	Stock R	Stock L	Max. Cut-off Dia. ϕD (Inch)	Max. Cut-off Dia. ϕD (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	h1 (Inch)	h1 (mm)	L1 (Inch)	L1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 CTPS..	**CTPSR06-IN**	1	●		**.394**	**10.0**	3/8		3/8		3/8		4.724	120	0	0.0	LR1S-2.5 × 7	CLR-15S
	CTPSR08-IN	1	●		**.394**	**10.0**	1/2		1/2		1/2		4.724	120	0	0.0	LR1S-2.5 × 7	CLR-15S
	CTPSR10	1	○		**.394**	**10.0**	.394	10	.394	10	.394	10	4.724	120	0	0.0	LR1S-2.5 × 7	CLR-15S
	CTPSR12	1	○		**.394**	**10.0**	.472	12	.472	12	.472	12	4.724	120	0	0.0	LR1S-2.5 × 7	CLR-15S
CTPS-001	**CTPSR08-SUB04**	2	○		**.157**	**4.0**	.315	8	.315	8	.315	8	4.724	120		—	LR1S-2.5 × 5	CLR-15S

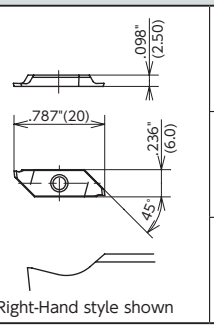
CTPS Series - Inserts

■CTPS - Cut-off

Shape	Item Number	Chip-breaker	Max. Cut-off Dia. ϕD (Inch)	Max. Cut-off Dia. ϕD (mm)	w (Inch)	w (mm)	L (Inch)	L (mm)	θ	rε (Inch)	rε (mm)	Coated Carbide VM1 R	Coated Carbide VM1 L	Coated Carbide ZM3 R	Coated Carbide ZM3 L
with chipbraker  Right-Hand style shown	**CTPS12FR**	Yes	**.157**	**4.0**	**.047**	**1.2**	.138	3.5	16°	.002	0.05	○		●	
	CTPS15FR	Yes	**.197**	**5.0**	**.059**	**1.5**	.157	4.0	16°	.002	0.05	○		●	
	CTPS18FR	Yes	**.335**	**8.5**	**.071**	**1.8**	.217	5.5	16°	.002	0.05	○		●	
	CTPS20FR	Yes	**.394**	**10.0**	**.079**	**2.0**	.236	6.0	16°	.002	0.05	○		○	
without chipbraker Mirror finish  Right-Hand style shown	**CTPS12FRV** Ⓜ	No	**.157**	**4.0**	**.047**	**1.2**	.138	3.5	20°	0	0.0	●		○	
	CTPS15FRV Ⓜ	No	**.197**	**5.0**	**.059**	**1.5**	.157	4.0	20°	0	0.0	○		○	
	CTPS18FRV Ⓜ	No	**.335**	**8.5**	**.071**	**1.8**	.217	5.5	20°	0	0.0	○		○	
	CTPS20FRV Ⓜ	No	**.394**	**10.0**	**.079**	**2.0**	.236	6.0	20°	0	0.0	○		○	

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

■CTPS-001 - Cut-off

Shape	Item Number	Chip-breaker	Max. Cut-off Dia. ϕD (Inch)	Max. Cut-off Dia. ϕD (mm)	w (Inch)	w (mm)	θ	rε (Inch)	rε (mm)	Coated Carbide ZM3 R	Coated Carbide ZM3 L
 Right-Hand style shown	**CTPS07FRN-001**	Yes	**.157**	**4.0**	**.028**	**0.7**	0°	.002	0.05	○	
	CTPS07FR-001	Yes	**.157**	**4.0**	**.028**	**0.7**	16°	.002	0.05	○	
	CTPS07FRV-001 Ⓜ	No	**.157**	**4.0**	**.028**	**0.7**	20°	0	0.0	○	

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

● : Stock ○ : 1-2 week delivery Ⓜ : Mirror finish

CTPS series ➡O31 Cutting condition ➡S5

CTP / CTPA / CTPW - Toolholders

CTP / CTPA

Screw Accessible from both sides

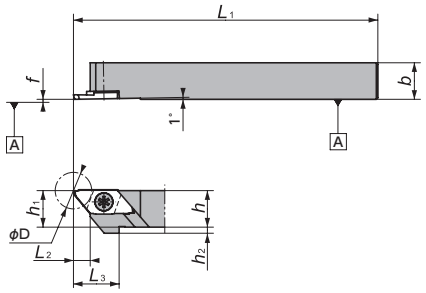
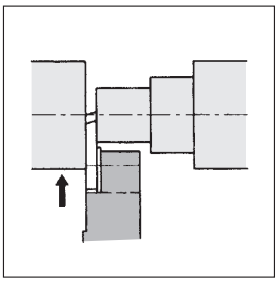


Figure-1

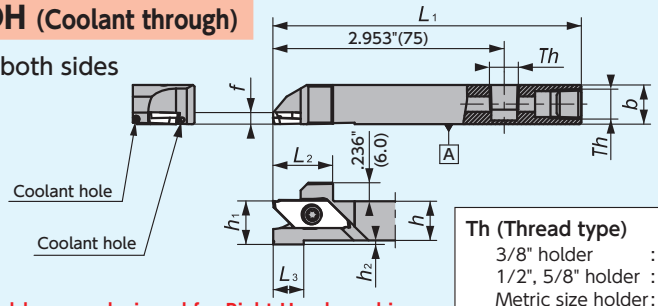


Right-Hand style shown

CTP-OH / CTPA-OH (Coolant through)

Screw Accessible from both sides

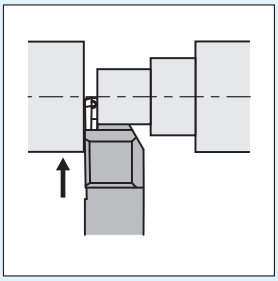
NEW



Th (Thread type)
3/8" holder : M6×1
1/2", 5/8" holder : NPT1/8
Metric size holder: Rc1/8 (PT1/8)

Figure-2

● Left-Hand holders are designed for Right-Hand machines



Right-Hand style shown

CTPW

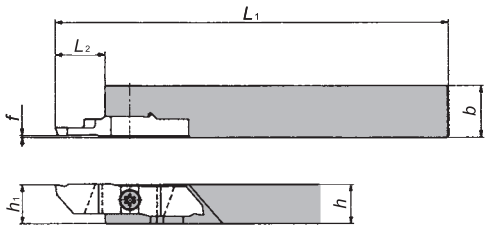
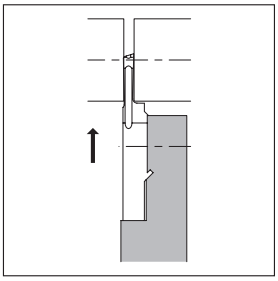
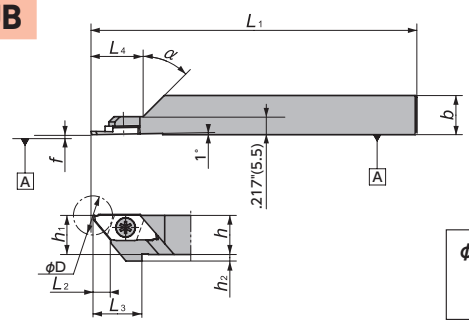


Figure-3



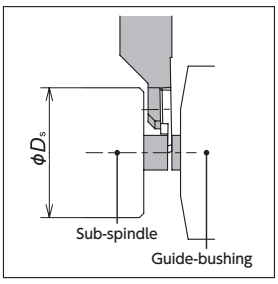
Right-Hand style shown

CTPR-SUB / CTPAR-SUB

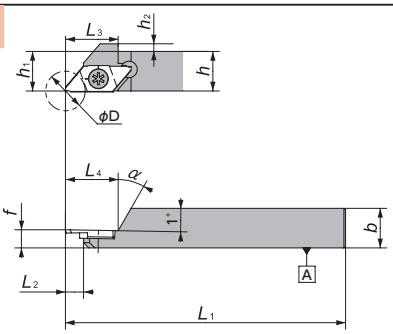


ϕDs
CTPR-SUB: ϕ1.18" (ϕ30㎜)
CTPAR-SUB: ϕ1.42" (ϕ36㎜)

Figure-4

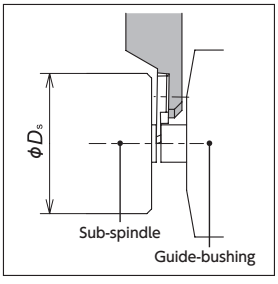


CTPL-SUB / CTPAL-SUB



ϕDs
CTPR-SUB: ϕ1.18" (ϕ30㎜)
CTPAR-SUB: ϕ1.42" (ϕ36㎜)

Figure-5



■CTP / CTPA / CTPW

Gage Insert	Item Number	Figure	Stock R	Stock L	Max. Cut-off Dia. φD* (Inch)	(mm)	h (Inch)	(mm)	h1 (Inch)	(mm)	b (Inch)	(mm)	L1 (Inch)	(mm)	h2 (Inch)	(mm)	L2 (Inch)	(mm)	L3 (Inch)	(mm)	Th	f (Inch)	(mm)	Clamp Screw	Wrench
 CTP FR../FL..	CTPR1/16-IN	1	●	●	.472	12	3/8		3/8		3/8		4.724	120	.079	2	.217	5.5	.591	15	—	0.0	0.0	LRIS-4×10PW	CLR-15S
	CTPR1/2-IN	1	●	●	.472	12	1/2		1/2		1/2		4.724	120	0	0	.217	5.5	.591	15	—	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR5/8-IN	1	●	●	.472	12	5/8		5/8		5/8		4.724	120	0	0	.217	5.5	.591	15	—	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR1/2	1	●	●	.472	12	.315	8	.315	8	.394	10	4.724	120	.157	4	.217	5.5	.591	15	—	0.0	0.0	LRIS-4×10PW	CLR-15S
	CTPR1/2H	1	○	○	.472	12	.394	10	.394	10	.394	10	3.937	100	.079	2	.217	5.5	.591	15	—	0.0	0.0	LRIS-4×10PW	CLR-15S
	CTPR1/2	1	○	○	.472	12	.394	10	.394	10	.394	10	4.724	120	.079	2	.217	5.5	.591	15	—	0.0	0.0	LRIS-4×10PW	CLR-15S
	CTPR1/2-12GX	1	○	○	.472	12	.472	12	.472	12	.472	12	3.346	85	0	0	.217	5.5	.591	15	—	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR1/2	1	○	○	.472	12	.472	12	.472	12	.472	12	4.724	120	0	0	.217	5.5	.591	15	—	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR1/3	1	○	○	.472	12	.519	13	.519	13	.519	13	4.724	120	0	0	.217	5.5	.591	15	—	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR5/8H	1	○		.472	12	.630	16	.630	16	.630	16	3.937	100	0	0	.217	5.5	.591	15	—	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR5/8	1	○	○	.472	12	.630	16	.630	16	.630	16	4.724	120	0	0	.217	5.5	.591	15	—	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR1/16-IN-OH 💧	2	●	●	.472	12	3/8		.472	12	3/8		3.937	100	.176	4.475	.768	19.5	.748	19	M6 × 1	0.0	0.0	LRIS-4×10PW	CLR-15S
	CTPR1/2-08H-IN-OH 💧	2	●	●	.472	12	1/2		1/2		1/2		3.937	100	.051	1.3	.768	19.5	.394	10	NPT1/8	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR1/2-1012H-OH 💧	2	○	○	.472	12	.394	10	.472	12	.394	10	3.937	100	.176	4.475	.768	19.5	.748	19	M6 × 1	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR1/2-12H-OH 💧	2	●	●	.472	12	.472	12	.472	12	.472	12	3.937	100	.051	1.3	.768	19.5	.394	10	Rc1/8(PT1/8)	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPR5/8-16H-OH 💧	2	○	○	.472	12	.630	16	.630	16	.630	16	3.937	100	0	0	.768	19.5	—	—	Rc1/8(PT1/8)	0.0	0.0	LRIS-4×12PW	CLR-15S
 CTPA FR../FL..	CTPA1/16-IN	1	●	●	.630	16	3/8		3/8		3/8		4.724	120	.079	2	.295	7.5	.768	19.5	—	0.0	0.0	LRIS-4×10PW	CLR-15S
	CTPA1/2-IN	1	●	●	.630	16	1/2		1/2		1/2		4.724	120	0	0	.295	7.5	.768	19.5	—	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPA5/8-IN	1	●	●	.630	16	5/8		5/8		5/8		4.724	120	0	0	.295	7.5	.768	19.5	—	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPA1/2	1	○	○	.630	16	.394	10	.394	10	.394	10	4.724	120	.079	2	.295	7.5	.768	19.5	—	0.0	0.0	LRIS-4×10PW	CLR-15S
	CTPA1/2	1	●	●	.630	16	.472	12	.472	12	.472	12	4.724	120	0	0	.295	7.5	.768	19.5	—	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPA5/8	1	○	○	.630	16	.630	16	.630	16	.630	16	4.724	120	0	0	.295	7.5	.768	19.5	—	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPA1/2-20F	1	○	○	.630	16	.787	20	.787	20	.787	20	3.150	80	0	0	.295	7.5	.768	19.5	—	0.0	0.0	LRIS-4×10	LLR-25S
	CTPA1/16-IN-OH 💧	2	●	●	.630	16	3/8		.472	12	3/8		3.937	100	.176	4.475	.768	19.5	.787	20	M6 × 1	0.0	0.0	LRIS-4×10PW	CLR-15S
	CTPA1/2-08H-IN-OH 💧	2	●	●	.630	16	1/2		1/2		1/2		3.937	100	.051	1.3	.768	19.5	.394	10	NPT1/8	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPA5/8-10H-IN-OH 💧	2	●	●	.630	16	5/8		5/8		5/8		3.937	100	0	0	.768	19.5	—	—	NPT1/8	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPA1/2-12H-OH 💧	2	●	●	.630	16	.472	12	.472	12	.472	12	3.937	100	.079	2	.768	19.5	.394	10	Rc1/8(PT1/8)	0.0	0.0	LRIS-4×12PW	CLR-15S
	CTPA5/8-16H-OH 💧	2	○	○	.630	16	.630	16	.630	16	.630	16	3.937	100	0	0	.768	19.5	0	0	Rc1/8(PT1/8)	0.0	0.0	LRIS-4×12PW	CLR-15S
 CTPW FR../FL..	CTPW1/2-08-IN	3	●	●	.787	20	1/2		.498		.630	16	4.724	120	—	—	.591	15	—	—	—	0.0	0.0	LRIS-4×10	LLR-25S
	CTPW5/8-10-IN	3	●	●	.787	20	5/8		.623		.630	16	4.724	120	—	—	.591	15	—	—	—	0.0	0.0	LRIS-4×10	LLR-25S
	CTPW1/2-10A	3		○	.787	20	.394	10	.392	9.95	.630	16	4.724	120	—	—	.591	15	—	—	—	0.0	0.0	LRIS-4×10	LLR-25S
	CTPW1/2-10	3	○		.787	20	.394	10	.392	9.95	.472	12	4.724	120	—	—	.591	15	—	—	—	0.0	0.0	LRIS-4×10	LLR-25S
	CTPW1/2-12A	3		○	.787	20	.472	12	.470	11.95	.630	16	4.724	120	—	—	.591	15	—	—	—	0.0	0.0	LRIS-4×10	LLR-25S
	CTPW1/2-12	3	○		.787	20	.472	12	.470	11.95	.472	12	4.724	120	—	—	.591	15	—	—	—	0.0	0.0	LRIS-4×10	LLR-25S
	CTPW1/2-16	3	○	○	.787	20	.630	16	.628	15.95	.630	16	4.724	120	—	—	.591	15	—	—	—	0.0	0.0	LRIS-4×10	LLR-25S
	CTPW1/2-20	3	○	○	.787	20	.787	20	.785	19.95	.787	20	4.724	120	—	—	.591	15	—	—	—	0.0	0.0	LRIS-4×10	LLR-25S

●Left-Hand coolant through holders are designed for Right-Hand machines

＊Would be changed by insert

■CTPR-SUB / CTPAR-SUB

Gage Insert	Item Number	Figure	Stock R	Max. Cut-off Dia. φD* (Inch)	(mm)	h (Inch)	(mm)	h1 (Inch)	(mm)	b (Inch)	(mm)	L1 (Inch)	(mm)	h2 (Inch)	(mm)	L2 (Inch)	(mm)	L3 (Inch)	(mm)	L4 (Inch)	(mm)	α	f (Inch)	(mm)	Clamp Screw	Wrench
 CTP..FR..	CTPR06-IN-SUB	4	●	.472	12	3/8		3/8		3/8		4.724	120	.079	2	.217	5.5	.591	15	.630	16	45°	.217	5.5	LRIS-4×5	LLR-25S
	CTPR08-IN-SUB	4	●	.472	12	1/2		1/2		1/2		4.724	120	0	0	.217	5.5	.591	15	.630	16	45°	.217	5.5	LRIS-4×5	LLR-25S
	CTPR10-IN-SUB	4	●	.472	12	5/8		5/8		5/8		4.724	120	0	0	.217	5.5	.591	15	.630	16	45°	.217	5.5	LRIS-4×5	LLR-25S
	CTPR08-SUB	4	○	.472	12	.315	8	.315	8	.315	8	4.724	120	.157	4	.217	5.5	.591	15	.630	16	45°	.217	5.5	LRIS-4×5	LLR-25S
	CTPR08J-SUB	4	○	.472	12	.315	8	.315	8	.315	8	4.331	110	.157	4	.217	5.5	.591	15	.630	16	45°	.217	5.5	LRIS-4×5	LLR-25S
	CTPR10F-SUB	4	○	.472	12	.394	10	.394	10	.394	10	3.150	80	.079	2	.217	5.5	.591	15	.630	16	45°	.217	5.5	LRIS-4×5	LLR-25S
	CTPR10KX-SUB	4	○	.472	12	.394	10	.394	10	.394	10	4.724	120	.079	2	.217	5.5	.591	15	.630	16	45°	.217	5.5	LRIS-4×5	LLR-25S
	CTPR12GX-SUB	4	○	.472	12	.472	12	.472	12	.472	12	3.346	85	0	0	.217	5.5	.591	15	.630	16	45°	.217	5.5	LRIS-4×5	LLR-25S
	CTPR12-SUB	4	○	.472	12	.472	12	.472	12	.472	12	4.724	120	0	0	.217	5.5	.591	15	.630	16	45°	.217	5.5	LRIS-4×5	LLR-25S
 CTPA..FR..	CTPAR06-IN-SUB	4	●	.630	16	3/8		3/8		3/8		4.724	120	.079	2	.295	7.5	.768	19.5	.787	20	25°	.217	5.5	LRIS-4×5	LLR-25S
	CTPAR08-IN-SUB	4	●	.630	16	1/2		1/2		1/2		4.724	120	0	0	.295	7.5	.768	19.5	.787	20	25°	.217	5.5	LRIS-4×5	LLR-25S
	CTPAR10-IN-SUB	4	●	.630	16	5/8		5/8		5/8		4.724	120	0	0	.295	7.5	.768	19.5	.787	20	25°	.217	5.5	LRIS-4×5	LLR-25S
	CTPAR10GX-SUB	4	○	.630	16	.394	10	.394	10	.394	10	3.346	85	.079	2	.787	20	.768	19.5	.787	20	25°	0	0.0	LRIS-4×5	LLR-25S
	CTPAR12GX-SUB	4	○	.630	16	.472	12	.472	12	.472	12	3.346	85	0	0	.787	20	.768	19.5	.787	20	25°	0	0.0	LRIS-4×5	LLR-25S
	CTPAR12KX-SUB	4	○	.630	16	.472	12	.472	12	.472	12	4.724	120	0	0	.787	20	.768	19.5	.787	20	25°	0	0.0	LRIS-4×5	LLR-25S

＊Would be changed by insert

■CTPL-SUB / CTPAL-SUB

Gage Insert	Item number	Figure	Stock L	Max. Cut-off Dia. φD* (Inch)	(mm)	h (Inch)	(mm)	h1 (Inch)	(mm)	b (Inch)	(mm)	L1 (Inch)	(mm)	h2 (Inch)	(mm)	L2 (Inch)	(mm)	L3 (Inch)	(mm)	L4 (Inch)	(mm)	α	f (Inch)	(mm)	Clamp screw	Wrench
 CTP..FL..	CTPL08-SUB	5	○	.472	12	.315	8	.315	8	.394	10	4.724	120	.157	4	.217	5.5	.591	15	.630	16	30°	.217	5.5	LRIS-4×5	LLR-25S
	CTPL08J-SUB	5	○	.472	12	.315	8	.315	8	.315	8	4.331	110	.157	4	.217	5.5	.591	15	.630	16	30°	.217	5.5	LRIS-4×5	LLR-25S
	CTPL10GX-SUB	5	○	.472	12	.394	10	.394	10	.394	10	3.346	85	.079	2	.217	5.5	.591	15	.630	16	30°	.217	5.5	LRIS-4×5	LLR-25S
	CTPL12GX-SUB	5	○	.472	12	.472	12	.472	12	.472	12	3.346	85	0	0	.217	5.5	.591	15	.630	16	30°	.217	5.5	LRIS-4×5	LLR-25S
 CTPA..FL..	CTPAL06-IN-SUB	5	●	.630	16	3/8		3/8		3/8		4.724	120	.079	2	.295	7.5	.768	19.5	.787	20	30°	.295	7.5	LRIS-4×5	LLR-25S
	CTPAL08-IN-SUB	5	●	.630	16	1/2		1/2		1/2		4.724	120	0	0	.295	7.5	.768	19.5	.787	20	30°	.295	7.5	LRIS-4×5	LLR-25S
	CTPAL10-IN-SUB	5	●	.630	16	5/8		5/8		5/8		4.724	120	0	0	.295	7.5	.768	19.5	.787	20	30°	.295	7.5	LRIS-4×5	LLR-25S
	CTPAL10GX-SUB	5	○	.630	16	.394	10	.394	10	.394	10	3.346	85	.079	2	.787	20	.768	19.5	.787	20	30°	.217	5.5	LRIS-4×5	LLR-25S
	CTPAL12GX-SUB	5	○	.630	16	.472	12	.472	12	.472	12	3.346	85	0	0	.787	20	.768	19.5	.787	20	30°	.217	5.5	LRIS-4×5	LLR-25S
	CTPAL12KX-SUB	5	○	.630	16	.472	12	.472	12	.472	12	4.724	120	0	0	.787	20	.768	19.5	.787	20	30°	.217	5.5	LRIS-4×5	LLR-25S
	CTPAL16GX-SUB	5	○	.630	16	.630	16	.630	16	.630	16	3.346	85	0	0	1.102	28	.768	19.5	1.102	28	30°	.217	5.5	LRIS-4×5	LLR-25S

＊Would be changed by insert

Cutting condition ➡S5

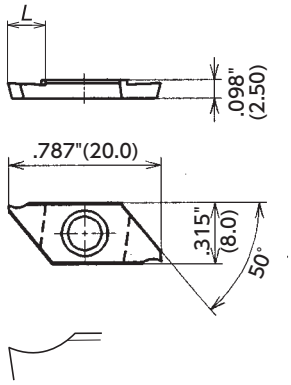
● : Stock ○ : 1-2 week delivery 💧 : Coolant through

Inserts (Right-hand) ➡S10 Inserts (Left-hand) ➡S12

CTP / CTPA / CTPW Inserts (Right-Hand)

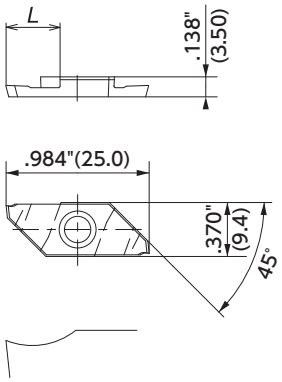
Two-sided insert

■CTP / CTPX / CTP-X



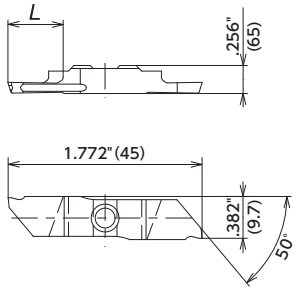
Right-Hand style shown

■CTPA / CTPAX



Right-Hand style shown

■CTPW

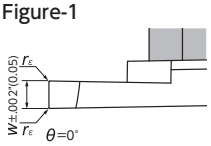
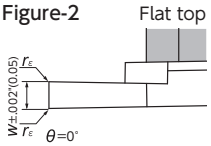
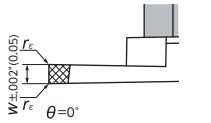
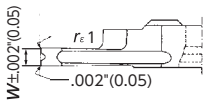
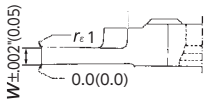


Right-Hand style shown

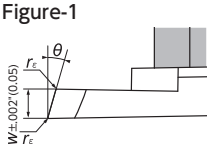
■FR

Shape	Item Number	Figure	Chip-breaker	Max. Cut-off Dia. φD (Inch)	Max. Cut-off Dia. φD (mm)	w (Inch)	w (mm)	L (Inch)	L (mm)	θ	$r_{\varepsilon 1}$ (Inch)	$r_{\varepsilon 1}$ (mm)	Coated Carbide QM3	Coated Carbide DT4	Coated Carbide VM1	Coated Carbide ZM3	Carbide KM1	PCD PD1
Figure-1	CTP05FR-SH	1	Yes	.197	5.0	.020	0.5	.110	2.8	15°	.001	0.03				●		
	CTP07FR	1	Yes	.315	8.0	.028	0.7	.177	4.5	16°	.002	0.05				●		
	CTP10FR-SH	1	Yes	.275	7.0	.039	1.0	.161	4.1	15°	.002	0.05		○		○		
	CTP10FR	1	Yes	.472	12.0	.039	1.0	.264	6.7	16°	.002	0.05		●	●	●		
	CTP10FRFT	3	No	.472	12.0	.039	1.0	.264	6.7	16°	.002	0.05	●					
	CTP10FRV Ⓜ	2	No	.472	12.0	.039	1.0	.264	6.7	20°	0.0	0.0		○	●	●	●	
Figure-2 Flat top	CTP15FR	1	Yes	.472	12.0	.059	1.5	.264	6.7	16°	.002	0.05			●	●		
	CTPX15FR	1	Yes	.472	12.0	.059	1.5	.264	6.7	16°	.002	0.05	●	●		○		
	CTP15FRX	1	Yes	.472	12.0	.059	1.5	.264	6.7	16°	.002	0.05				○		
	CTP15FRV Ⓜ	2	No	.472	12.0	.059	1.5	.264	6.7	20°	0.0	0.0			●	●	●	
Figure-3 Flat top	CTP20FR	1	Yes	.472	12.0	.079	2.0	.264	6.7	16°	.002	0.05			●	●		
	CTPX20FR	1	Yes	.472	12.0	.079	2.0	.264	6.7	16°	.002	0.05	●	●		○		
	CTP20FRX	1	Yes	.472	12.0	.079	2.0	.264	6.7	16°	.002	0.05				○		
	CTP20FRV Ⓜ	2	No	.472	12.0	.079	2.0	.264	6.7	20°	0.0	0.0			●	●	●	
Figure-4	CTPA07FR	1	Yes	.315	8.0	.028	0.7	.177	4.5	16°	.002	0.05				●		
	CTPA10FR	1	Yes	.472	12.0	.039	1.0	.264	6.7	16°	.002	0.05	●		●	●		
	CTPA10FRFT	3	No	.472	12.0	.039	1.0	.264	6.7	20°	.002	0.05	●					
	CTPA15FR	1	Yes	.630	16.0	.059	1.5	.362	9.2	16°	.002	0.05	●	●	●	●		
	CTPA15FRFT	3	No	.630	16.0	.059	1.5	.362	9.2	20°	.002	0.05	●					
Figure-5 Flat top	CTPA20FR	1	Yes	.630	16.0	.079	2.0	.362	9.2	16°	.002	0.05	●	●	●	●		
	CTPA20FRV Ⓜ	2	No	.630	16.0	.079	2.0	.362	9.2	20°	0.0	0.0			○		●	
	CTPW25FR	4	Yes	.787	20.0	.098	2.5	.472	12	17°	.002	0.05				●		
	CTPW25FRP Ⓜ	5	No	.787	20.0	.098	2.5	.472	12	17°	.002	0.05				○		

FRN

Shape	Item Number	Figure	Chip-breaker	Max. Cut-off Dia. ϕD (Inch)	(mm)	w (Inch)	(mm)	L (Inch)	(mm)	θ	$r_{\varepsilon 1}$ (Inch)	(mm)	Coated Carbide QM3	DT4	VM1	ZM3	Carbide KM1	PCD PD1
Figure-1 	CTP05FRN-SH	1	Yes	.197	5.0	.020	0.5	.110	2.8	0°	.001	0.03				●		
	CTP10FRN-SH	1	Yes	.275	7.0	.039	1.0	.161	4.1	0°	.002	0.05		○		○		
	CTP10FRN	1	Yes	.472	12.0	.039	1.0	.264	6.7	0°	.002	0.05		●		●		
	CTP15FRN	1	Yes	.472	12.0	.059	1.5	.264	6.7	0°	.002	0.05			●	●		
	CTPX15FRN	1	Yes	.472	12.0	.059	1.5	.264	6.7	0°	.002	0.05	●	●				
	CTP15FRNX	1	Yes	.472	12.0	.059	1.5	.264	6.7	0°	.002	0.05				○		
Figure-2 Flat top 	CTP15FRNV Ⓜ	2	No	.472	12.0	.059	1.5	.264	6.7	0°	0.0	0.0					●	
	CTP20FRN	1	Yes	.472	12.0	.079	2.0	.264	6.7	0°	.002	0.05			●	●		
	CTPX20FRN	1	Yes	.472	12.0	.079	2.0	.264	6.7	0°	.002	0.05	●	●				
	CTP20FRNX	1	Yes	.472	12.0	.079	2.0	.264	6.7	0°	.002	0.05				○		
Figure-3 PCD tipped 	CTP20FRNV Ⓜ	2	No	.472	12.0	.079	2.0	.264	6.7	0°	0.0	0.0					●	
	CTPA07FRN	1	Yes	.315	8.0	.028	0.7	.177	4.5	0°	.002	0.05				●		
	CTPA10FRN	1	Yes	.472	12.0	.039	1.0	.264	6.7	0°	.002	0.05	●			●		
	CTPA10FRS	2	No	.472	16.0	.039	1.0	.362	9.2	0°	.002	0.05	●					
Figure-4 	CTPA15FRN	1	Yes	.630	16.0	.059	1.5	.362	9.2	0°	.002	0.05	●	●	●	●		
	CTPA15FRS	2	No	.630	16.0	.059	1.5	.362	9.2	0°	.002	0.05	●					
	CTPA20FRN	1	Yes	.630	16.0	.079	2.0	.362	9.2	0°	.002	0.05	●	●	●	●		
	CTPA20FRS	2	No	.630	16.0	.079	2.0	.362	9.2	0°	.002	0.05	●			○		
	CTPA20FRNV Ⓜ	2	No	.630	16.0	.079	2.0	.362	9.2	0°	0.0	0.0					●	
Figure-5 Flat top 	CTPA20FRN-P	3	Yes	.630	16.0	.079	2.0	.362	9.2	0°	.004	0.1						○
	CTPA30FRN	1	Yes	.630	16.0	.118	3.0	.362	9.2	0°	.002	0.05	○					
	CTPW25FRN	4	Yes	.787	20.0	.098	2.5	.472	12	0°	.002	0.05				●		
	CTPW25FRNV Ⓜ	5	No	.787	20.0	.098	2.5	.472	12	0°	0.0	0.0				●		

FRK

Shape	Item Number	Figure	Chip-breaker	Max. Cut-off Dia. ϕD (Inch)	(mm)	w (Inch)	(mm)	L (Inch)	(mm)	θ	$r_{\varepsilon 1}$ (Inch)	(mm)	Coated Carbide QM3	DT4	VM1	ZM3	Carbide KM1	PCD PD1
Figure-1 	CTP10FRK	1	Yes	.433	11.0	.039	1.0	.264	6.7	16°	.002	0.05				○		
	CTP15FRK	1	Yes	.433	11.0	.059	1.5	.264	6.7	16°	.002	0.05				○		
	CTP20FRK	1	Yes	.433	11.0	.079	2.0	.264	6.7	16°	.002	0.05				○		

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

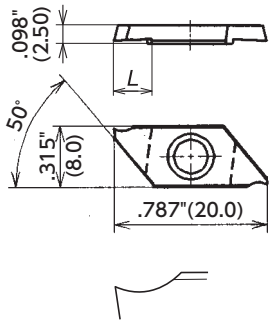
Holders ➔S8
Tool selection guide ➔S4
Cutting condition ➔S5

● : Stock ○ : 1-2 week delivery Ⓜ : Mirror finish

CTP / CTPA / CTPW Inserts (Left-Hand)

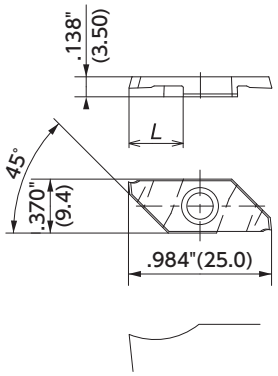
Two-sided insert

■CTP / CTPX / CTP-X



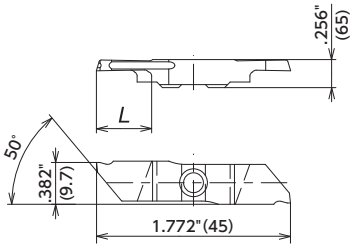
Left-Hand style shown

■CTPA / CTPAX



Left-Hand style shown

■CTPW



Left-Hand style shown

■FLK

Shape	Item Number	Figure	Chip-breaker	Max. Cut-off Dia. ϕD (Inch)	(mm)	w (Inch)	(mm)	L (Inch)	(mm)	θ	$r_{\varepsilon 1}$ (Inch)	(mm)	Coated Carbide QM3	DT4	VM1	ZM3	Carbide KM1	PCD PD1
Figure-1	**CTP05FLK-SH**	1	Yes	.197	5.0	.020	0.5	.110	2.8	17°	.001	0.03				●		
	CTP10FLK-SH	1	Yes	.275	7.0	.039	1.0	.161	4.1	17°	.002	0.05		○		○		
	CTP10FLK	1	Yes	.433	11.0	.039	1.0	.264	6.7	16°	.002	0.05		●		●		
	CTP10FLK-211	1	Yes	.472	12.0	.039	1.0	.295	7.5	16°	.002	0.05			●			
	CTP15FLK	1	Yes	.433	11.0	.059	1.5	.264	6.7	16°	.002	0.05			○	●		
	CTP15FLKB	1	Yes	.433	11.0	.059	1.5	.264	6.7	16°	.002	0.05				○		
	CTPX15FLK	1	Yes	.433	11.0	.059	1.5	.264	6.7	16°	.002	0.05	●	●				
	CTP15FLKV Ⓜ	2	No	.433	11.0	.059	1.5	.264	6.7	20°	0.0	0.0			●		●	
Figure-2 Flat top	**CTP20FLK**	1	Yes	.433	11.0	.079	2.0	.264	6.7	16°	.002	0.05			○	●		
	CTPX20FLK	1	Yes	.433	11.0	.079	2.0	.264	6.7	16°	.002	0.05	●	●				
	CTPA07FLK	1	Yes	.256	6.5	.028	0.7	.177	4.5	16°	.002	0.05				●		
	CTPA10FLK	1	Yes	.433	11.0	.039	1.0	.264	6.7	16°	.002	0.05	●		●	●		
	CTPA10FLKD	1	Yes	.630	16.0	.039	1.0	.362	9.2	16°	.002	0.05				○		
	CTPA10FLKFT	2	No	.630	16.0	.039	1.0	.311	7.9	16°	.0.0	0.0	●					
Figure-3	**CTPA15FLK**	1	Yes	.571	14.5	.059	1.5	.362	9.2	16°	.002	0.05	●	●	●	●		
	CTPA15FLKFT	2	No	.630	16.0	.059	1.5	.394	10.0	16°	0.0	0.0	●					
	CTPA15FLKV Ⓜ	2	No	.571	14.5	.059	1.5	.362	9.2	20°	0.0	0.0	●					
	CTPA20FLK	1	Yes	.571	14.5	.079	2.0	.362	9.2	16°	.002	0.05	●	●	●	●		
	CTPA20FLKV Ⓜ	2	No	.571	14.5	.079	2.0	.362	9.2	20°	0.0	0.0			○		●	
	CTPW25FLK	3	Yes	.787	20.0	.098	2.5	.472	12	17°	.002	0.05				●		

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

■FLN

Shape	Item Number	Figure	Chip-breaker	Max. Cut-off Dia. φD (Inch)	(mm)	w (Inch)	(mm)	L (Inch)	(mm)	θ	$r_{\varepsilon 1}$ (Inch)	(mm)	Coated Carbide QM3	DT4	VM1	ZM3	Carbide KM1	PCD PD1
Figure-1	CTP05FLN-SH	1	Yes	.197	5.0	.020	0.5	.110	2.8	0°	.001	0.03				●		
	CTP10FLN-SH	1	Yes	.275	7.0	.039	1.0	.161	4.1	0°	.002	0.05		○		○		
	CTP10FLN	1	Yes	.472	12.0	.039	1.0	.264	6.7	0°	.002	0.05		●		●		
	CTP15FLN	1	Yes	.472	12.0	.059	1.5	.264	6.7	0°	.002	0.05			○	●		
	CTPX15FLN	1	Yes	.472	12.0	.059	1.5	.264	6.7	0°	.002	0.05	●	●				
Figure-2 Flat top	CTP15FLNV	2	No	.472	12.0	.059	1.5	.264	6.7	0°	0.0	0.0					●	
	CTP20FLN	1	Yes	.472	12.0	.079	2.0	.264	6.7	0°	.002	0.05			○	●		
	CTPX20FLN	1	Yes	.472	12.0	.079	2.0	.264	6.7	0°	.002	0.05	●	●				
	CTP20FLNV	2	No	.472	12.0	.079	2.0	.264	6.7	0°	0.0	0.0					●	
Figure-3 PCD tipped	CTPA10FLN	1	Yes	.472	12.0	.039	1.0	.264	6.7	0°	.002	0.05	●			●		
	CTPA10FLND	1	Yes	.630	16.0	.039	1.0	.362	9.2	0°	.002	0.05				○		
	CTPA10FLS	2	No	.630	16.0	.039	1.0	.362	9.2	0°	.002	0.05	●					
	CTPA15FLN	1	Yes	.630	16.0	.059	1.5	.362	9.2	0°	.002	0.05	●	●	○	●		
	CTPA15FLS	2	No	.630	16.0	.059	1.5	.362	9.2	0°	.002	0.05	●					
Figure-4	CTPA20FLN	1	Yes	.630	16.0	.079	2.0	.362	9.2	0°	.002	0.05	●	●	○	●		
	CTPA20FLS	2	No	.630	16.0	.079	2.0	.362	9.2	0°	.002	0.05	●			○		
	CTPA20FLNV Ⓜ	2	No	.630	16.0	.079	2.0	.362	9.2	0°	0.0	0.0					●	
Figure-5 Flat top	CTPA20FLN-P	3	Yes	.630	16.0	.079	2.0	.362	9.2	0°	.004	0.1						○
	CTPA30FLN	1	Yes	.630	16.0	.118	3.0	.362	9.2	0°	.002	0.05	○					
	CTPW25FLN	4	Yes	.787	20.0	.098	2.5	.472	12	0°	.002	0.05				●		
	CTPW25FLNV Ⓜ	5	No	.787	20.0	.098	2.5	.472	12	0°	0.0	0.0				●		

■FL

Shape	Item Number	Figure	Chip-breaker	Max. Cut-off Dia. φD (Inch)	(mm)	w (Inch)	(mm)	L (Inch)	(mm)	θ	$r_{\varepsilon 1}$ (Inch)	(mm)	Coated Carbide QM3	DT4	VM1	ZM3	Carbide KM1	PCD PD1
Figure-1	CTP07FL	1	Yes	.315	8.0	.028	0.7	.177	4.5	16°	.002	0.05				●		
	CTP10FL	1	Yes	.472	12.0	.039	1.0	.264	6.7	16°	.002	0.05				●		
	CTP10FLV Ⓜ	2	No	.472	12.0	.039	1.0	.264	6.7	20°	0.0	0.0			○	○		
	CTP15FL	1	Yes	.472	12.0	.059	1.5	.264	6.7	16°	.002	0.05				○		
	CTPX15FL	1	Yes	.472	12.0	.059	1.5	.264	6.7	16°	.002	0.05		●				
Figure-2 Flat top	CTP15FLV Ⓜ	2	No	.472	12.0	.059	1.5	.264	6.7	20°	0.0	0.0			○	○		
	CTP20FL	1	Yes	.472	12.0	.079	2.0	.264	6.7	16°	.002	0.05				●		
	CTPX20FL	1	Yes	.472	12.0	.079	2.0	.264	6.7	16°	.002	0.05		●				
	CTP20FLV Ⓜ	2	No	.472	12.0	.079	2.0	.264	6.7	20°	0.0	0.0			○	○		
Figure-3	CTPA07FL	1	Yes	.315	8.0	.028	0.7	.177	4.5	16°	.002	0.05				○		
	CTPA10FL	1	Yes	.472	12.0	.039	1.0	.264	6.7	16°	.002	0.05				○		
	CTPA15FL	1	Yes	.630	16.0	.059	1.5	.362	9.2	16°	.002	0.05		●		○		
Figure-4 Flat top	CTPA20FL	1	Yes	.630	16.0	.079	2.0	.362	9.2	16°	.002	0.05		●		○		
	CTPA20FLV Ⓜ	2	No	.630	16.0	.079	2.0	.362	9.2	20°	0.0	0.0			○			
	CTPW25FL	3	Yes	.787	20.0	.098	2.5	.472	12	17°	.002	0.05				○		
	CTPW25FLP Ⓜ	4	No	.787	20.0	.098	2.5	.472	12	17°	.002	0.05				○		

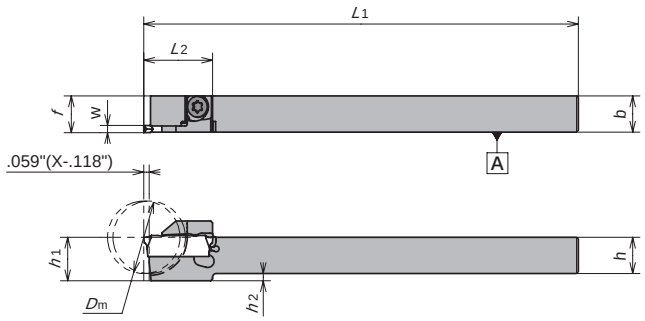
● : Stock ○ : 1-2 week delivery Ⓜ : Mirror finish

Holders ➡S8 Tool selection guide ➡S4 Cutting Condition ➡S5

CTDP (Cut Duo) Series

Max. Cut-off Dia. -ϕ.787"(20.0mm), -ϕ1"(25.4mm), ϕ1.260"(32.0mm), -ϕ1.339"(34.0mm)

CTDP



Right-Hand style shown

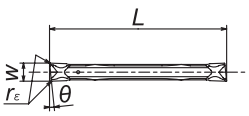
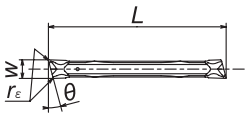
CTDP Series - Toolholders

■CTDP

Gage Insert	Item Number	Stock R	Stock L	Max. Cut-off Dia. D_m (Inch)	Max. Cut-off Dia. D_m (mm)	w (Inch)	w (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	h_2 (Inch)	h_2 (mm)	L_2 (Inch)	L_2 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
	CTDP※06-IN-20D20	●	●	.787	20.0	.079	2.0	3/8		.394	10	3/8		4.729	120	.019	0.5	.748	19.0	.400	10.150	LRIS-4 × 12	LLR-25S
	CTDP※08-IN-20D25	●	●	.984	25.0	.079	2.0	1/2		1/2		1/2		4.729	120	0	0	.866	22.0	.506	12.850	LRIS-4 × 12	LLR-25S
	CTDP※10-IN-20D32	●	●	1.260	32.0	.079	2.0	5/8		5/8		5/8		4.729	120	0	0	1.083	27.5	.631	16.025	LRIS-5 × 10	LLR-28S
	CTDP※12-IN-20D32	●	●	1.260	32.0	.079	2.0	3/4		3/4		3/4		4.729	120	0	0	1.083	27.5	.756	19.200	LRIS-5 × 10	LLR-28S
	CTDP※10-20D20	○	○	.787	20.0	.079	2.0	.394	10	.394	10	.394	10	4.724	120	.079	2	.748	19.0	.400	10.15	LRIS-4 × 12	LLR-25S
	CTDP※12-20D20	○	○	.787	20.0	.079	2.0	.472	12	.472	12	.472	12	4.724	120	0	0	.748	19.0	.478	12.15	LRIS-4 × 12	LLR-25S
CTDP20	CTDP※12-20D25	●	○	1.000	25.4	.079	2.0	.472	12	.472	12	.472	12	4.724	120	0	0	.866	22.0	.478	12.15	LRIS-4 × 12	LLR-25S
	CTDP※16-20D25	●	○	1.000	25.4	.079	2.0	.630	16	.630	16	.630	16	4.724	120	0	0	.866	22.0	.636	16.15	LRIS-4 × 12	LLR-25S
	CTDP※16-20D32A	○	○	1.260	32.0	.079	2.0	.630	16	.630	16	.630	16	4.724	120	0	0	1.083	27.5	.636	16.15	LRIS5 × 10	LLR-28S
	CTDP※2012-20D32A	○	○	1.260	32.0	.079	2.0	.787	20	.472	12	.787	20	4.724	120	0	0	1.161	29.5	.478	12.15	LRIS5 × 10	LLR-28S
	CTDP※20-20D32A	○	○	1.260	32.0	.079	2.0	.787	20	.787	20	.787	20	4.724	120	0	0	1.161	29.5	.793	20.15	LRIS5 × 10	LLR-28S
	CTDP※16-25D34A	●	○	1.339	34.0	.098	2.5	.630	16	.630	16	.630	16	4.724	120	0	0	1.122	28.5	.636	16.15	CS0516LSH	LW-3
CTDP25	CTDP※2012-25D34A	○	○	1.339	34.0	.098	2.5	.787	20	.472	12	.787	20	4.724	120	0	0	1.161	29.5	.478	12.15	CS0516LSH	LW-3
	CTDP※20-25D34A	○	○	1.339	34.0	.098	2.5	.787	20	.787	20	.787	20	4.724	120	0	0	1.161	29.5	.793	20.15	CS0516LSH	LW-3

CTDP Series - Inserts

■CTDP

Shape		Item Number	w (Inch)	w (mm)	L (Inch)	L (mm)	θ	r_ε (Inch)	r_ε (mm)	Coated Carbide QM3	Coated Carbide DM4	Coated Carbide TM4
 Two-sided	 Neutral style shown	CTDP20N	.079	2.0	.752	19.1	0°	.002	0.05	●	●	○
		CTDP20N02	.079	2.0	.752	19.1	0°	.008	0.2	●	●	○
		CTDP20R6	.079	2.0	.752	19.1	6°	.002	0.05	●	●	○
		CTDP20R15	.079	2.0	.752	19.1	15°	.002	0.05	●	●	○
	 Right-Hand style shown	CTDP25N	.098	2.5	.835	21.2	0°	.002	0.05	●	●	○
		CTDP25N02	.098	2.5	.835	21.2	0°	.008	0.2	●	●	○
		CTDP25R6	.098	2.5	.835	21.2	6°	.002	0.05	●	●	○
		CTDP25R15	.098	2.5	.835	21.2	15°	.002	0.05	●	●	○

CTV Series

Max. Cut-off Dia. -ϕ.787"(20.0㎜)

CTV-K2

Screw Accessible from both sides

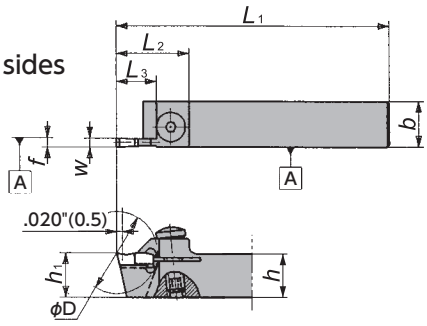
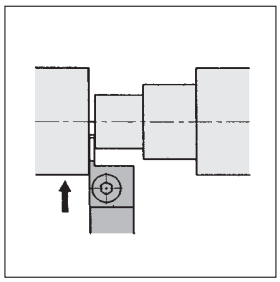


Figure-1



Right-Hand style shown

CTVN-K2

Screw Accessible from both sides

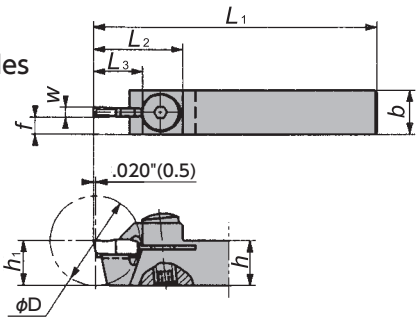
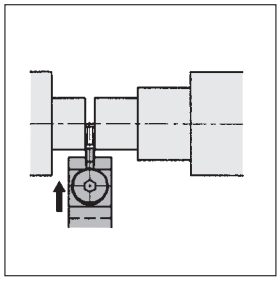


Figure-2



CTV Series - Toolholders

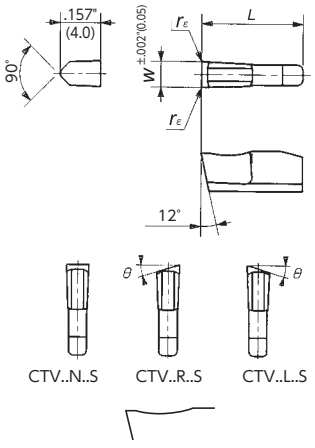
■CTV

Gage Insert	Item Number	Figure	Stock R	Stock L	Max. Cut-off Dia. ϕD (Inch)	Max. Cut-off Dia. ϕD (㎜)	w (Inch)	w (㎜)	h (Inch)	h (㎜)	b (Inch)	b (㎜)	h_1 (Inch)	h_1 (㎜)	L_1 (Inch)	L_1 (㎜)	L_2 (Inch)	L_2 (㎜)	L_3 (Inch)	L_3 (㎜)	f (Inch)	f (㎜)	Clamp Screw	Wrench
 CTV-S	CTV※10K2	1	○	○	.787	20.0	.087(.098)	2.2(2.5)	.394	10	.394	10	.394	10	4.724	120	.787	20.0	.433	11	0.0	0.0	A0S-5 × 16	LW-2.5S
	CTV※12GX2	1		○	.787	20.0	.087(.098)	2.2(2.5)	.472	12	.472	12	.472	12	3.346	85	.787	20.0	.433	11	0.0	0.0	A0S-5 × 16	LW-2.5S
	CTV※12K2	1	○	○	.787	20.0	.087(.098)	2.2(2.5)	.472	12	.472	12	.472	12	4.724	120	.787	20.0	.433	11	0.0	0.0	A0S-5 × 16	LW-2.5S
	CTVN10K2	2		○	.787	20.0	.087(.098)	2.2(2.5)	.394	10	.394	10	.394	10	4.724	120	.768	19.5	.433	11	.154	3.9	A0S-5 × 16	LW-2.5S
	CTVN12K2	2		○	.787	20.0	.087(.098)	2.2(2.5)	.472	12	.472	12	.472	12	4.724	120	.768	19.5	.433	11	.193	4.9	A0S-5 × 16	LW-2.5S

Note: *f* shows when takes CTV22.. insert

CTV Series - Inserts

■CTV-S

Shape	Item Number	w (Inch)	w (㎜)	L (Inch)	L (㎜)	θ	r_ε (Inch)	r_ε (㎜)	Coated Carbide ZM3
  Single-sided	CTV22N05S	.087	2.2	.394	10	0°	.002	0.05	○
	CTV22N10S	.087	2.2	.394	10	0°	.004	0.10	○
	CTV25N05S	.098	2.5	.394	10	0°	.002	0.05	○
	CTV25N10S	.098	2.5	.394	10	0°	.004	0.10	○
	CTV22R05S	.087	2.2	.394	10	17°	.002	0.05	○
	CTV22R10S	.087	2.2	.394	10	17°	.004	0.10	○
	CTV25R05S	.098	2.5	.394	10	17°	.002	0.05	○
	CTV25R10S	.098	2.5	.394	10	17°	.004	0.10	○
	CTV22L05S	.087	2.2	.394	10	17°	.002	0.05	○
	CTV22L10S	.087	2.2	.394	10	17°	.004	0.10	○
	CTV25L05S	.098	2.5	.394	10	17°	.002	0.05	○
	CTV25L10S	.098	2.5	.394	10	17°	.004	0.10	○

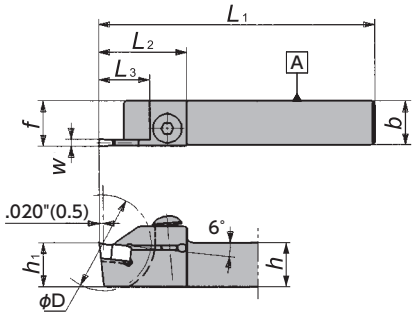
● : Stock ○ : 1-2 week delivery

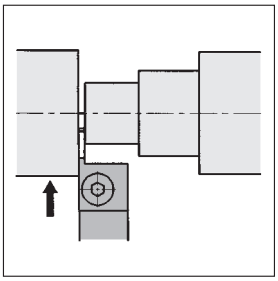
Cutting condition ➡S5

CTV Series

Max. Cut-off Dia. -ϕ1.772"(45.0㎜)

CTV (-S)

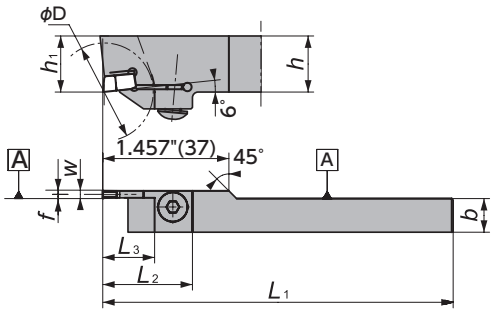


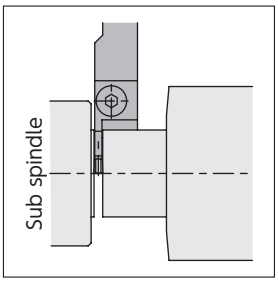


Right-Hand style shown

Figure-1

CTV-X

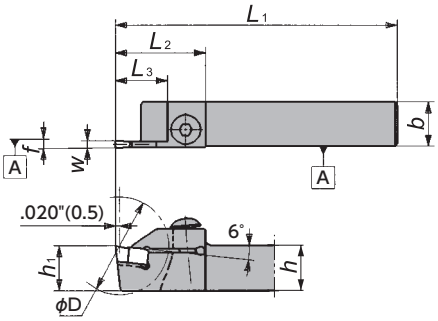


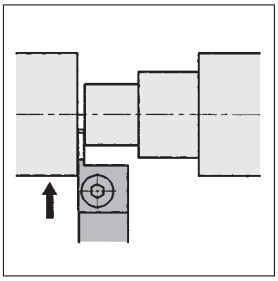


Left-Hand style shown

Figure-2

CTV-M (B)





Right-Hand style shown

Figure-3

CTV Series - Toolholders

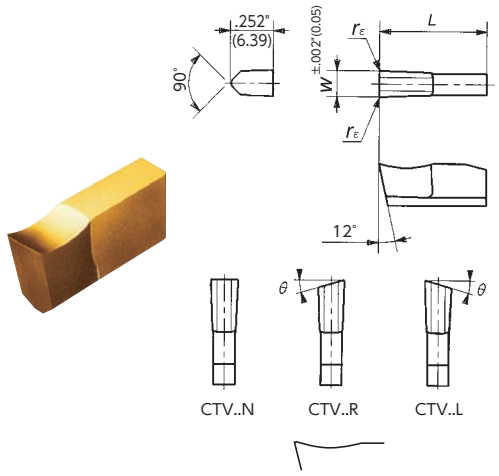
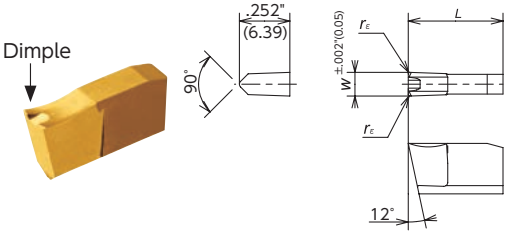
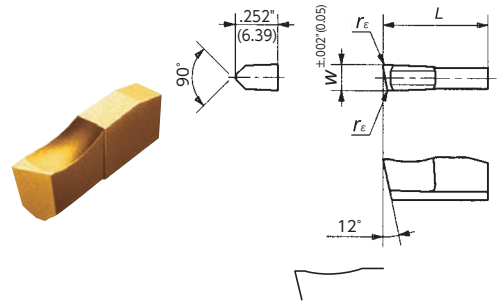


■CTV

Gage Insert	Item Number	Figure	Stock R	Stock L	Max. Cut-off Dia. D_m (Inch)	(㎜)	w (Inch)	(㎜)	h (Inch)	(㎜)	b (Inch)	(㎜)	h_1 (Inch)	(㎜)	L_1 (Inch)	(㎜)	L_2 (Inch)	(㎜)	L_3 (Inch)	(㎜)	f (Inch)	(㎜)	Clamp Screw	Wrench
CTV25	CTV*08B	1	●		.900	22.9	.098	2.5	1/2		1/2		1/2		4.5	114	.945	24	.480	12.2	.520	13.2	BS0620	LW-4
	CTV*16K25	1	●	●	1.378	35.0	.098	2.5	.630	16	.630	16	.630	16	4.921	125	1.260	32	.728	18.5	.650	16.5	BS0620	LW-4
	CTV*16K25S	1	○		.906	23.0	.098	2.5	.630	16	.630	16	.630	16	4.921	125	.945	24	.480	12.2	.650	16.5	BS0620	LW-4
	CTV*16-25M	3	○		1.102	28.0	.098	2.5	.630	16	.630	16	.630	16	4.724	120	1.004	25.5	.591	15	.020	0.5	BS0520	LW-3
	CTV*20K25	1	●	○	1.378	35.0	.098	2.5	.787	20	.787	20	.787	20	4.921	125	1.260	32	.728	18.5	.807	20.5	BS0620	LW-4
	CTV*20K25S	1	○		.906	23.0	.098	2.5	.787	20	.787	20	.787	20	4.921	125	.945	24	.480	12.2	.807	20.5	BS0620	LW-4
	CTV*20-25M	3	○		1.102	28.0	.098	2.5	.787	20	.787	20	.787	20	4.724	120	1.004	25.5	.591	15	.020	0.5	BS0520	LW-3
	CTV*1913L25	1	○	○	1.378	35.0	.098	2.5	.748	19	.512	13	.748	19	5.512	140	1.260	32	.728	18.5	.512	13.0	BS0620	LW-4
CTV30	CTV*16K30	1	○	○	1.378	35.0	.118	3.0	.630	16	.630	16	.630	16	4.921	125	1.260	32	.728	18.5	.650	16.5	BS0620	LW-4
	CTV*16K30S	1	○		.906	23.0	.118	3.0	.630	16	.630	16	.630	16	4.921	125	.945	24	.480	12.2	.650	16.5	BS0620	LW-4
	CTV*16-30M	3	○		1.102	28.0	.118	3.0	.630	16	.630	16	.630	16	4.724	120	1.004	25.5	.591	15	.020	0.5	BS0520	LW-3
	CTV*20K30	1	○	○	1.378	35.0	.118	3.0	.787	20	.787	20	.787	20	4.921	125	1.260	32	.728	18.5	.807	20.5	BS0620	LW-4
	CTV*20K30S	1	○		.906	23.0	.118	3.0	.787	20	.787	20	.787	20	4.921	125	.945	24	.480	12.2	.807	20.5	BS0620	LW-4
	CTV*20-30M	3	○		1.102	28.0	.118	3.0	.787	20	.787	20	.787	20	4.724	120	1.004	25.5	.591	15	.020	0.5	BS0520	LW-3
	CTV*25-30B	3	○	○	1.772	45.0	.118	3.0	.984	25	.984	25	.984	25	5.906	150	1.358	34.5	.925	23.5	.020	0.5	BS0625	LW-4
	CTV*1913L30	1	○	○	1.378	35.0	.118	3.0	.748	19	.512	13	.748	19	5.512	140	1.260	32	.728	18.5	.512	13.0	BS0620	LW-4
	CTVL2012K30X-1	2		○	1.378	35.0	.118	3.0	.787	20	.472	12	.787	20	4.921	125	1.260	32	.728	18.5	.118	3.0	BS0620	LW-4

CTV Series - Inserts

■CTV

Shape	Item Number	w (Inch)	w (mm)	L (Inch)	L (mm)	θ	r_ε (Inch)	r_ε (mm)	Coated Carbide QM3	Coated Carbide ZM3
 Single-sided	**CTV25N**	.098	2.5	.472	12	0°	.008	0.20		○
	CTV30N	.118	3.0	.472	12	0°	.008	0.20	○	○
	CTV25R	.098	2.5	.472	12	8°	.008	0.20		●
	CTV30R	.118	3.0	.472	12	8°	.008	0.20		○
	CTV30L	.118	3.0	.472	12	8°	.008	0.20		○
 Single-sided	**CTV30N038**	.118	3.0	.472	12	0°	.008	0.20		○
 Single-sided	**CTV25R00A**	.098	2.5	.472	12	8°	.002 MAX.	0.05 max.		●
	CTV30R00A	.118	3.0	.472	12	8°	.002 MAX.	0.05 max.		○
	CTV25R00B	.098	2.5	.472	12	17°	.002 MAX.	0.05 max.		●
	CTV30R00B	.118	3.0	.472	12	17°	.002 MAX.	0.05 max.		○

● : Stock　　○ : 1-2 week delivery

Cutting condition ➡S5

MEMO

T

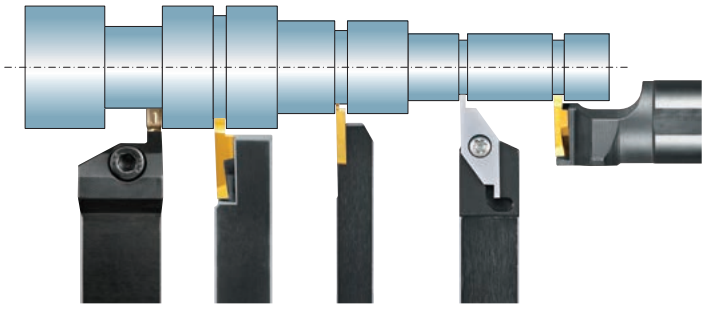


Grooving / Side Turning

- Grooving Tools ····· T2
- Recommended Cutting Condition ··· T4
- General Information ····· T5
- Tool List ····· T6

CSV Series ····· T6
CTPS Series ····· T8
GTW Series (GROOVE DUO) ····· T9
GTM.32 Series····· T10
TWG Series ····· T17
GTM.43 Series····· T18
SATURN DUO Series (Face grooving) ····· T20
GTPA Series ····· T24

NTK Grooving / Side Turning Tools - Product Lines

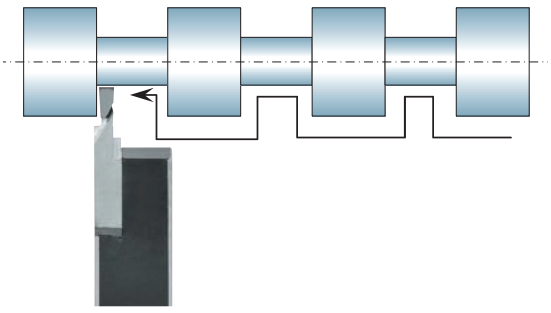


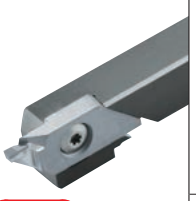
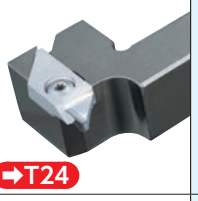
Insert	CSVG ➡T7		GTPS ➡T8
Holder	CSV	DS-CSV	CTPS
	 ➡T6	 ➡T6	 ➡T8
Blade width	.010" - .059" (0.25 - 1.50mm)		.030" - .079" (0.75 - 2.0mm)
Depth of cut	~.102" (~2.59mm)		~.098" (~2.50mm)

Insert	GTMH32 / GTMX32 / GTM32 / TMG32 ➡T12					
Holder	GTT	GTT-OH	Y-GTT	Y-GTT-OH	DS-GTT	CH-GTT
	 ➡T10	NEW  ➡T10	 ➡T10	NEW  ➡T10	 ➡T10	 ➡T10
		Coolant through	Y-axis	Y-axis w/ Coolant through		
Blade width	.012" - .118" (0.3 - 3.0mm)					
Depth of cut	~.106" (~2.69mm)					

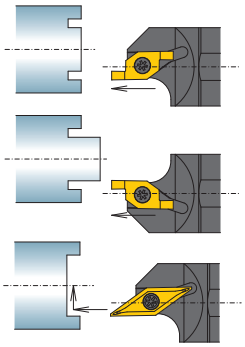
Insert	GWP ➡T9	GTM43 / GTMA43 / GTMT43 ➡T19		TWG ➡T17
Holder	GTWP	NGTN	NGTB	TWG
	NEW  ➡T9	 ➡T18	 ➡T18	 ➡T17
Blade width	.118" - .236" (3.0 - 5.9mm)	.039" - .216" (1.0 - 5.49mm)		.079" - .118" (2.0 - 3.0mm)
Depth of cut	~.354" (~9.0mm)	.177" (4.50mm)		~.118" (~3.0mm)

■ Multifunctional Grooving for non-ferrous material



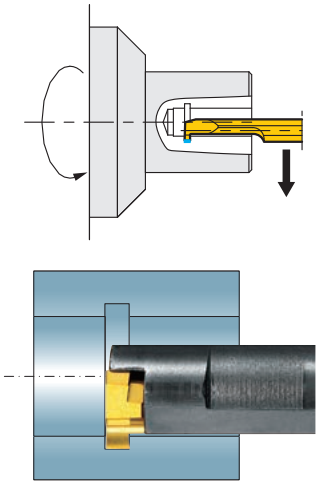
Insert	GTPA ➡T24		
Holder	GTPA	Y-GTPA	Y-GTPA-OH
	 ➡T24	 ➡T24	NEW  ➡T24
		Y-axis	Y-axis w/ Coolant through
Blade width	.079" - .098" (2.0 - 2.50mm)		
Depth of cut	~.236" (~6.0mm)		

Face Grooving



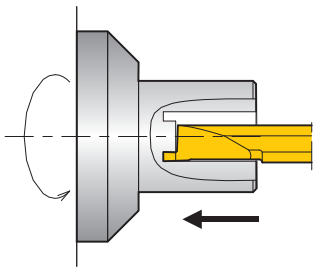
Insert	FGV ➡T23	FBV ➡T23	
Holder	FGV	DS-FGV	CH-FGV
	 ➡T22	 ➡T22	 ➡T22
Blade width	.039" - .079" (1.0㎜ - 2.0㎜)		
Depth of cut	~.118" (~3.0㎜)	FGV : ~.118" (~3.0㎜)	
		FBV : ~.157" (~4.0㎜)	

ID Grooving



Insert	SBG ➡V18	GTG ➡V19
Holder	NBH	S-BG / BG
	 ➡V14	 ➡V19
Blade width	.020" - .079" (0.5 - 2.0㎜)	.020" - .079" (0.5 - 2.0㎜)
Depth of cut	~.079" (~2.0㎜)	~.118" (~3.0㎜)

ID Face Grooving



Insert	SFG ➡V18
Holder	NBH
	 ➡V14
Blade width	.039" - .118" (1.0 - 3.0㎜)
Depth of cut	~.110" (~2.79㎜)

Recommended Cutting Conditions

Grooving

CSV / GTPS / GTG / GTMH / GTMT / GTMX / TMG / SBG

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4			DM4 / DT4	TM4	QM3	
	2nd choice	TM4 / QM3			QM3 / VM1	QM3	TM4 / DT4 / C7Z(X)	
Cutting Speed (SFM)		75 125 225	100 200 275		130 230 330	150 300 600	Carbide 150 300 500 C7Z(X) 400 500 800	
Feed Rate (IPR) A. Grooving B. Side turning*	Width .010-.020	A. .0002 - .0012 B. .0001 - .0002						
	.020-.040	A. .0008 - .0024 B. .0002 - .0004						A. .0008 - .0028 B. .0002 - .0004
	.040-.080	A. .0012 - .0028 B. .0008 - .0020						A. .0012 - .0031 B. .0012 - .0024
	> .080	A. .0012 - .0079 B. .0012 - .0024						

*When side turining, Max. DOC is under .0079". Under .016" width side turning impossible

GVP / GWP / TWG

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	QM3						
	2nd choice							
Cutting Speed (SFM)		75 125 225	100 200 275		130 230 330	150 300 600	150 300 500	
Feed Rate (IPR) A. Grooving B. Side turning*	Width .118-.157	A. .0020 - .0059						
	.157-.197	A. .0039 - .0079					A. .0039 - .0098 B. .0059 - .0118	
	> .197	A. .0059 - .0138						

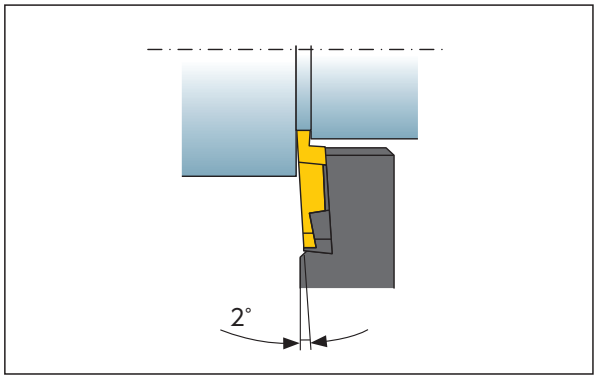
*Max DOC is 80% of width

GTPA

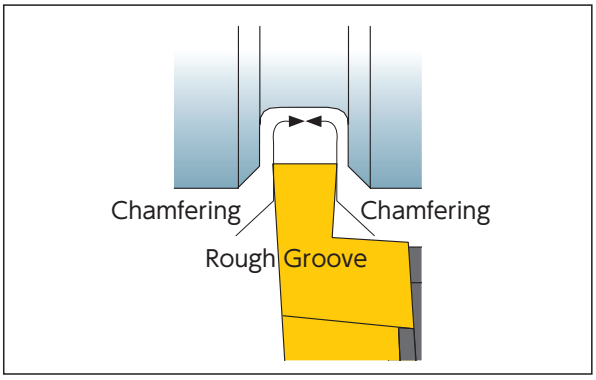
Work Material		Aluminum Alloy
Common Name		ASTM 5056 ASTM 6061
Grade	1st choice	PD1
	2nd choice	KM1
Cutting Speed (SFM)		PD1 330 650 1000 KM1 160 330 650
Feed Rate (IPR) A. Grooving B. Side turning		A. .0020 - .0079 B. .0039 - .0079

OD Grooving

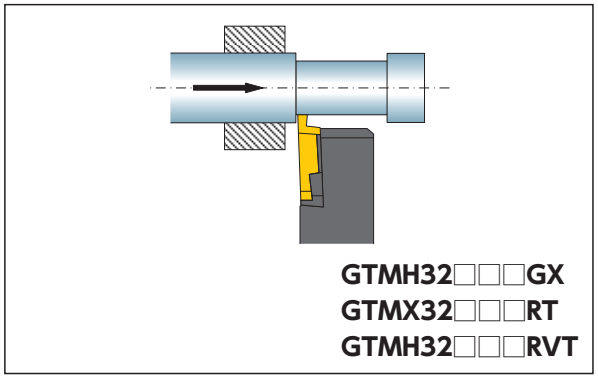
NTK GTMT / GTMH series can be used for uneven diameter grooving thanks to the 2 degree slanted insert mounting on the toolholder



Chamfering and radius machining can be done after the rough grooving process at the center of the groove

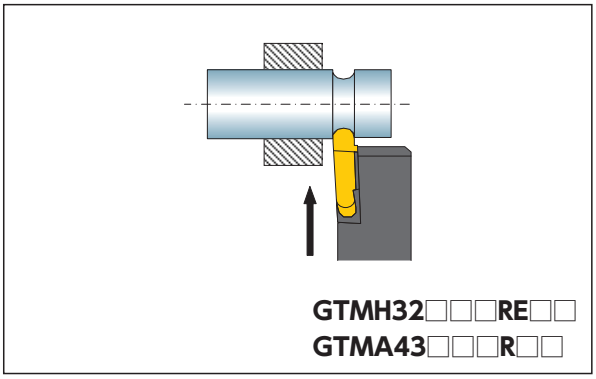


Side Turning



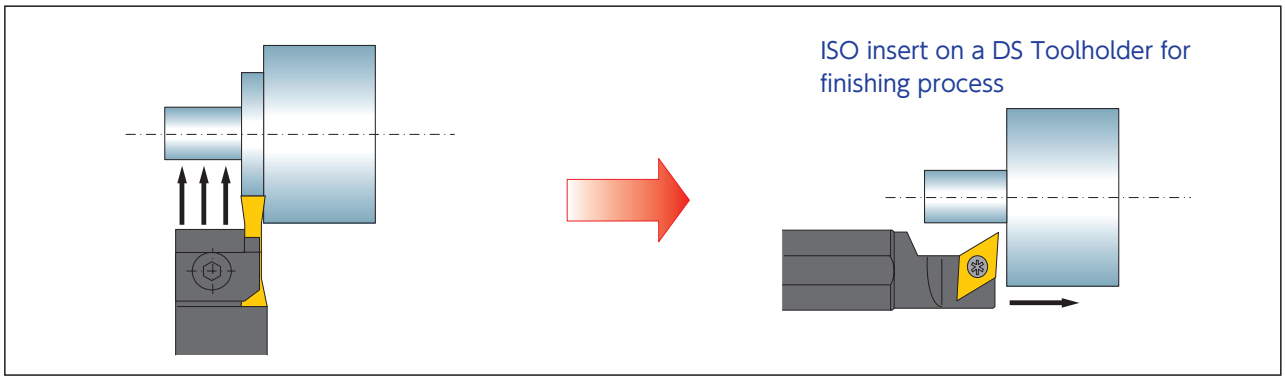
GTMH32□□□GX
GTMX32□□□RT
GTMH32□□□RVT

Full Radius

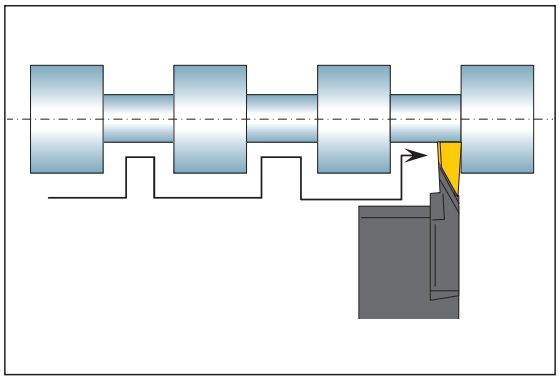


GTMH32□□□RE□□
GTMA43□□□R□□

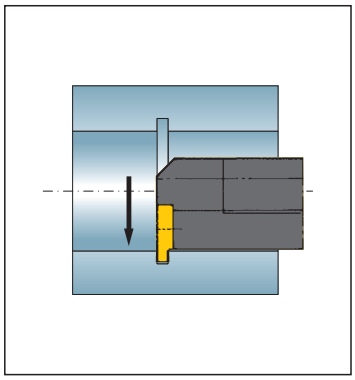
Rough Plunging for OD Turning



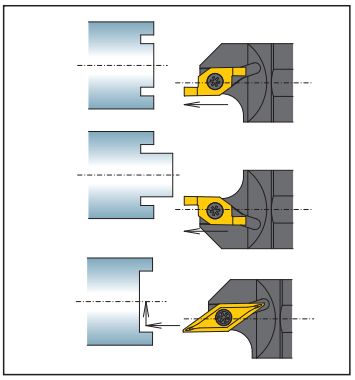
Spool Grooving



ID Grooving



Face Grooving



CSV Series

Best for up to .200" diameter material

CSV-NC

For Gang-style machine

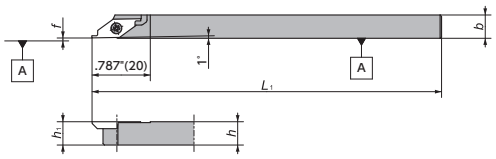


Figure-1

Right-Hand style shown

CSV

For Cam-style machine

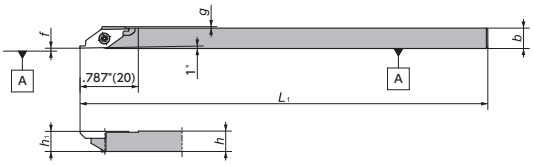


Figure-2

Right-Hand style shown

DS-CSVL

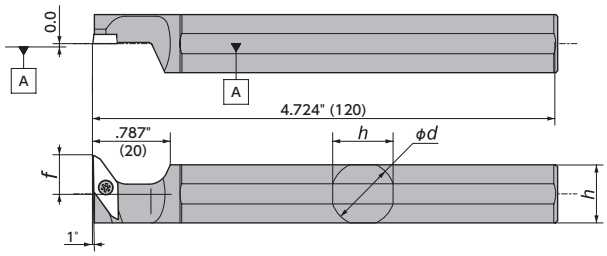


Figure-3

Left-Hand style shown
Takes Right-hand insert

CSV Series - Toolholders

■CSVR/L / CSVR/L-NC

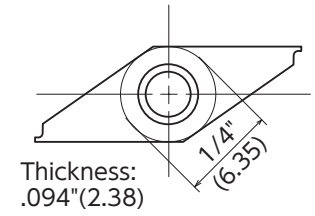
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	g (Inch)	g (mm)	Clamp Screw	Wrench
 CSV..11..	CSVR/L06-IN-NC	1	●	●	3/8		3/8		3/8		4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L08-IN-NC	1	●	●	1/2		1/2		1/2		4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L08NC	1	○	○	.315	8	.315	8	.315	8	4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L08NC-F	1	○		.315	8	.315	8	.315	8	4.724	120	0–.004	0.0–0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L10GXNC	1	○		.394	10	.394	10	.394	10	3.346	85	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L10NC	1	○	○	.394	10	.394	10	.394	10	4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L12NC	1	●	●	.472	12	.472	12	.472	12	4.724	120	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L07GX	2	○		.275	7	.275	7	.275	7	3.346	85	.004	0.1	.020	0.5	LRIS-2.5 × 7	CLR-15S
	CSVR/L07	2	○	●	.275	7	.275	7	.275	7	5.512	140	.004	0.1	.020	0.5	LRIS-2.5 × 7	CLR-15S
	CSVR/L08GX	2	○		.315	8	.315	8	.315	8	3.346	85	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L08	2	●	●	.315	8	.315	8	.315	8	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L095	2	○		.374	9.5	.374	9.5	.374	9.5	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L10	2	●	○	.394	10	.394	10	.394	10	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L12GX	2	○		.472	12	.472	12	.472	12	3.346	85	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSVR/L12	2	●		.472	12	.472	12	.472	12	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S

■DS-CSVL (Takes right-hand insert)

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 CSV..11FR..	DS-CSVL15	3		●	5/8	15.875	.591	15	.591	15	4.724	120	.394	10	LRIS-2.5 × 7	CLR-15S

CSV Series - Inserts

■CSVG - Grooving Mirror finish

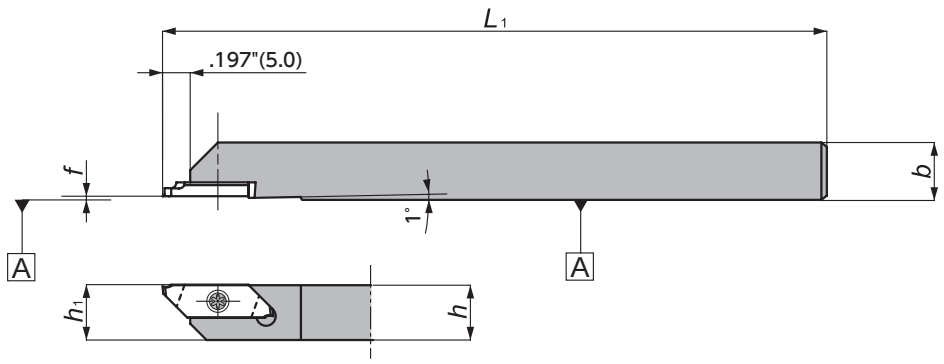
Shape	Item Number	Chip-breaker	Groove Width W (Inch)	Groove Width W (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide VM1 R	Coated Carbide VM1 L
	CSVG11F☒V025 Ⓜ	No	.010	0.25	.006	0.15	.020	0.50	0.0	0.0	●	
	CSVG11F☒V030 Ⓜ	No	.012	0.30	.006	0.15	.020	0.50	0.0	0.0	●	
	CSVG11F☒V035 Ⓜ	No	.014	0.35	.006	0.15	.020	0.50	0.0	0.0	●	
	CSVG11F☒V040 Ⓜ	No	.016	0.40	.006	0.15	.020	0.50	0.0	0.0	●	
	CSVG11F☒V045 Ⓜ	No	.018	0.45	.018	0.45	.039	1.00	0.0	0.0	●	
	CSVG11F☒V050 Ⓜ	No	.020	0.50	.018	0.45	.039	1.00	0.0	0.0	●	
	CSVG11F☒V055 Ⓜ	No	.022	0.55	.018	0.45	.039	1.00	0.0	0.0	●	
	CSVG11F☒V060 Ⓜ	No	.024	0.60	.018	0.45	.039	1.00	0.0	0.0	●	
	CSVG11F☒V065 Ⓜ	No	.026	0.65	.018	0.45	.039	1.00	0.0	0.0	●	
	CSVG11F☒V070 Ⓜ	No	.028	0.70	.018	0.45	.039	1.00	0.0	0.0	●	
	CSVG11F☒V075 Ⓜ	No	.030	0.75	.050	1.40	.079	2.00	0.0	0.0	●	○
	CSVG11F☒V080 Ⓜ	No	.031	0.80	.050	1.40	.079	2.00	0.0	0.0	●	
	CSVG11F☒V085 Ⓜ	No	.033	0.85	.050	1.40	.079	2.00	0.0	0.0	●	
	CSVG11F☒V090 Ⓜ	No	.035	0.90	.050	1.40	.079	2.00	0.0	0.0	●	
	CSVG11F☒V095 Ⓜ	No	.037	0.95	.050	1.40	.079	2.00	0.0	0.0	●	○
	CSVG11F☒V100 Ⓜ	No	.039	1.00	.050	1.40	.079	2.00	0.0	0.0	●	
	CSVG11F☒V110 Ⓜ	No	.043	1.10	.102	2.60	.102	2.60	0.0	0.0	●	
	CSVG11F☒V120 Ⓜ	No	.047	1.20	.102	2.60	.102	2.60	0.0	0.0	●	○
	CSVG11F☒V130 Ⓜ	No	.051	1.30	.102	2.60	.102	2.60	0.0	0.0	●	
	CSVG11F☒V140 Ⓜ	No	.055	1.40	.102	2.60	.102	2.60	0.0	0.0	●	
Right-Hand style shown	CSVG11F☒V150 Ⓜ	No	.059	1.50	.102	2.60	.102	2.60	0.0	0.0	●	

● : Stock ○ : 1-2 week delivery Ⓜ : Mirror finish CSV series ➡O27 Cutting condition ➡T4

CTPS Series

CTPS

For Cam-style machine



Right-Hand style shown

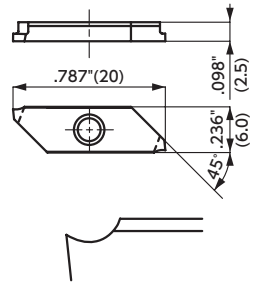
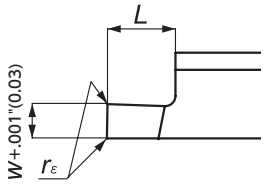
CTPS - Toolholders

■CTPS

Gage Insert	Item Number	Figure	Stock	Groove Width Range w (Inch)	(mm)	h (Inch)	(mm)	b (Inch)	(mm)	h1 (Inch)	(mm)	L1 (Inch)	(mm)	f (Inch)	(mm)	Clamp Screw	Wrench
 GTPS	**CTPSR06-IN**	1	●	.030-.079	0.75-2.00	3/8		3/8		3/8		4.724	120	0	0.0	LRIS-2.5 × 7	CLR-15S
	CTPSR08-IN	1	●	.030-.079	0.75-2.00	1/2		1/2		1/2		4.724	120	0	0.0	LRIS-2.5 × 7	CLR-15S
	CTPSR10	1	○	.030-.079	0.75-2.00	.394	10	.394	10	.394	10	4.724	120	0	0.0	LRIS-2.5 × 7	CLR-15S
	CTPSRR12	1	○	.030-.079	0.75-2.00	.472	12	.472	12	.472	12	4.724	120	0	0.0	LRIS-2.5 × 7	CLR-15S

CTPS Series - Inserts

■CTPS - Grooving

Shape		Item Number	Groove Width w (Inch)	(mm)	Max Depth of Cut (Inch)	(mm)	r_ε (Inch)	(mm)	L (Inch)	(mm)	Coated Carbide VM1	ZM3
 Right-Hand style shown		**GTPS075FR**	.030	0.75	.039	1.0	0.0	0.0	.059	1.5	○	○
		GTPS095FR	.037	0.95	.059	1.5	0.0	0.0	.079	2.0	○	○
		GTPS100FR	.039	1.00	.059	1.5	0.0	0.0	.079	2.0	○	○
		GTPS120FR	.047	1.20	.098	2.5	0.0	0.0	.118	3.0	○	○
		GTPS150FR	.059	1.50	.098	2.5	0.0	0.0	.118	3.0	○	○
		GTPS200FR	.079	2.00	.098	2.5	0.0	0.0	.118	3.0	○	○

● : Stock ○ : 1-2 week delivery

CTPS series ➡O31 Cutting condition ➡T4

GTW (GROOVE DUO) Series

GTWP

Side Turning Capable
For Swiss Machine

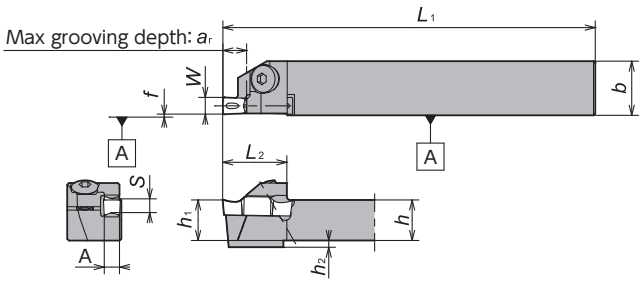
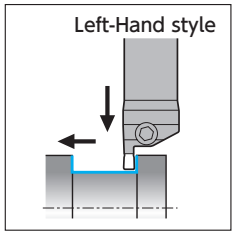


Figure-1



Right-Hand style shown

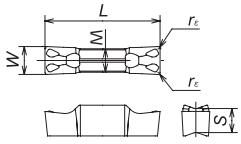
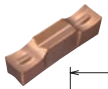
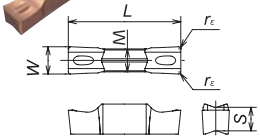
GTW Series - Toolholders



■GWP

Gage Insert	Item Number	Figure	Stock R	Stock L	Groove Width w (Inch)	(mm)	a_r (Inch)	(mm)	h (Inch)	(mm)	b (Inch)	(mm)	h_1 (Inch)	(mm)	L_1 (Inch)	(mm)	h_2 (Inch)	(mm)	f (Inch)	(mm)	L_2 (Inch)	(mm)	A (Inch)	(mm)	Seat Size s	Clamp Screw	Wrench
GWP ○ 300	GTWP□08-IN3D07	1	●		.118	3	.275	7	1/2		.630	16	1/2		4.724	120	0	0	.012	0.3	.748	19	.102	2.6	D	A0B-5×14	LW-3S
	GTWP□10-IN3D09	1	●		.118	3	.354	9	5/8		.630	16	5/8		4.724	120	0	0	.012	0.3	.866	22	.102	2.6	D	A0B-5×16	LW-3S
	GTWP□1016-3D07	1	○		.118	3	.275	7	.394	10	.630	16	.472	12	4.724	120	.079	2	.012	0.3	.748	19	.102	2.6	D	A0B-5×14	LW-3S
	GTWP□1216-3D07	1	●	○	.118	3	.275	7	.472	12	.630	16	.472	12	4.724	120	0	0	.012	0.3	.768	19.5	.102	2.6	D	A0B-5×16	LW-3S
	GTWP□1616-3D09	1	○	○	.118	3	.354	9	.630	16	.630	16	.630	16	4.724	120	0	0	.012	0.3	.866	22	.102	2.6	D	A0B-5×16	LW-3S
GWP ○ 400	GTWP□08-IN4E07	1	●		.157	4	.275	7	1/2		.630	16	1/2		4.724	120	0	0	.012	0.3	.748	19	.138	3.5	E	A0B-5×14	LW-3S
	GTWP□10-IN4E09	1	●		.157	4	.354	9	5/8		.630	16	5/8		4.724	120	0	0	.012	0.3	.866	22	.138	3.5	E	A0B-5×16	LW-3S
	GTWP□1016-4E07	1	○		.157	4	.275	7	.394	10	.630	16	.472	12	4.724	120	.079	2	.012	0.3	.748	19	.138	3.5	E	A0B-5×14	LW-3S
	GTWP□1216-4E07	1	●	○	.157	4	.275	7	.472	12	.630	16	.472	12	4.724	120	0	0	.012	0.3	.768	19.5	.138	3.5	E	A0B-5×16	LW-3S
	GTWP□1616-4E09	1	○	○	.157	4	.354	9	.630	16	.630	16	.630	16	4.724	120	0	0	.012	0.3	.866	22	.138	3.5	E	A0B-5×16	LW-3S
GWP ○ 500	GTWP□1016-5F07	1	○		.197	5	.275	7	.394	10	.630	16	.472	12	4.724	120	.079	2	.012	0.3	.748	19	.177	4.5	F	A0B-5×14	LW-3S
	GTWP□1216-5F07	1	○	○	.197	5	.275	7	.472	12	.630	16	.472	12	4.724	120	0	0	.012	0.3	.768	19.5	.177	4.5	F	A0B-5×16	LW-3S
	GTWP□1616-5F09	1	○	○	.197	5	.354	9	.630	16	.630	16	.630	16	4.724	120	0	0	.012	0.3	.866	22	.177	4.5	F	A0B-5×16	LW-3S
GWP ○ 600	GTWP□1020-6G07	1	○		.236	6	.275	7	.394	10	.787	20	.394	10	4.724	120	.079	2	.012	0.3	.866	22	.209	5.3	G	A0B-5×14	LW-3S
	GTWP□1220-6G07	1	○		.236	6	.275	7	.472	12	.787	20	.472	12	4.724	120	0	0	.012	0.3	.886	22.5	.209	5.3	G	A0B-5×16	LW-3S
	GTWP□1620-6G09	1	○	○	.236	6	.354	9	.630	16	.787	20	.630	16	4.724	120	0	0	.012	0.3	.984	25	.209	5.3	G	A0B-5×16	LW-3S

GTW Series - Inserts

Shape	Item Number	w Groove Width (Inch)	(mm)	w Width Tolerance (Inch)	(mm)	r_ε (Inch)	(mm)	M (Inch)	(mm)	L (Inch)	(mm)	Seat Size s	Coated Carbide DM4
  GWPG: Outside ground GWPM: Full-molded ●Excellent chip control ●Best for side turning	GWPG300N02D-GW	.118	3.0	.001	± 0.025	.008	0.2	.098	2.5	.811	20.6	D	●
	GWPG300N04D-GW	.118	3.0	.001	± 0.025	.016	0.4	.098	2.5	.811	20.6	D	●
	GWPG400N02E-GW	.157	4.0	.001	± 0.025	.008	0.2	.134	3.4	.811	20.6	E	●
	GWPG400N04E-GW	.157	4.0	.001	± 0.025	.016	0.4	.134	3.4	.811	20.6	E	●
	GWPG400N08E-GW	.157	4.0	.001	± 0.025	.031	0.8	.134	3.4	.811	20.6	E	●
	GWPG500N02F-GW	.197	5.0	.001	± 0.025	.008	0.2	.169	4.3	.811	20.6	F	○
	GWPG500N04F-GW	.197	5.0	.001	± 0.025	.016	0.4	.169	4.3	.811	20.6	F	○
	GWPG500N08F-GW	.197	5.0	.001	± 0.025	.031	0.8	.169	4.3	.811	20.6	F	○
	GWPG600N02G-GW	.236	6.0	.001	± 0.025	.008	0.2	.205	5.2	1.008	25.6	G	○
	GWPG600N04G-GW	.236	6.0	.001	± 0.025	.016	0.4	.205	5.2	1.008	25.6	G	○
	GWPG600N08G-GW	.236	6.0	.001	± 0.025	.031	0.8	.205	5.2	1.008	25.6	G	○
	GWPM300N04D-GW	.118	3.0	.002	± 0.05	.016	0.4	.098	2.5	.811	20.6	D	○
	GWPM400N04E-GW	.157	4.0	.002	± 0.05	.016	0.4	.134	3.4	.811	20.6	E	○
	GWPM500N04F-GW	.197	5.0	.002	± 0.05	.016	0.4	.169	4.3	.811	20.6	F	○
	GWPM600N04G-GW	.236	6.0	.002	± 0.05	.016	0.4	.205	5.2	1.008	25.6	G	○
  ●Less tool pressure design	GWPG300N02D-GV	.118	3.0	.001	± 0.025	.008	0.2	.205	2.5	.811	20.6	D	●
	GWPG300N04D-GV	.118	3.0	.001	± 0.025	.016	0.4	.205	2.5	.811	20.6	D	●
	GWPG400N02E-GV	.157	4.0	.001	± 0.025	.008	0.2	.169	4.3	.811	20.6	E	●
	GWPG400N04E-GV	.157	4.0	.001	± 0.025	.016	0.4	.169	4.3	.811	20.6	E	●
	GWPG500N02F-GV	.197	5.0	.001	± 0.025	.008	0.2	.169	4.3	.811	20.6	F	○
	GWPG500N04F-GV	.197	5.0	.001	± 0.025	.016	0.4	.169	4.3	.811	20.6	F	○
	GWPG600N02G-GV	.236	6.0	.001	± 0.025	.008	0.2	.169	4.3	1.008	25.6	G	○
	GWPG600N04G-GV	.236	6.0	.001	± 0.025	.016	0.4	.169	4.3	1.008	25.6	G	○

GTT Series

GTT

Screw accessible from both sides

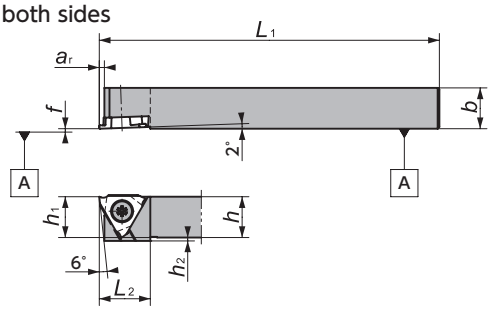
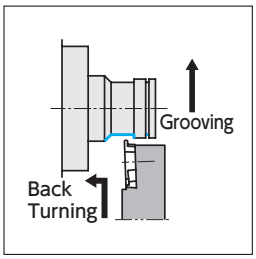


Figure-1



Right-Hand style shown

GTT-OH (Coolant through)

Screw accessible from both sides

NEW

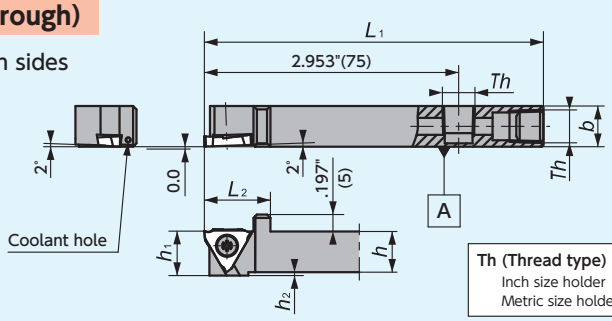
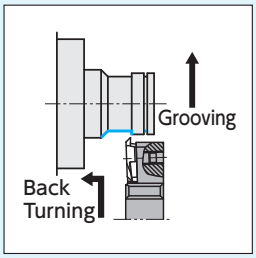


Figure-2

Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: M6, Rc1/8 (PT1/8)



Right-Hand style shown

Y-GTT

Screw accessible from both sides

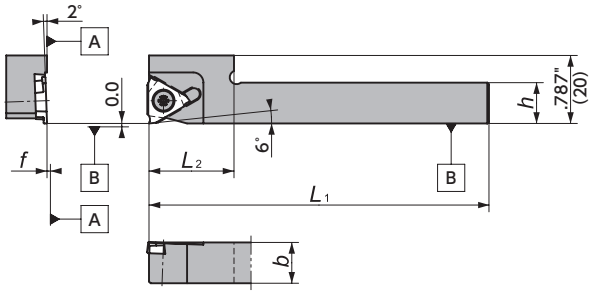
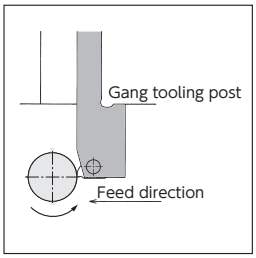


Figure-3



Right-Hand style shown
Takes Right-hand Insert

Y-GTT-OH (Coolant through)

Screw accessible from both sides

NEW

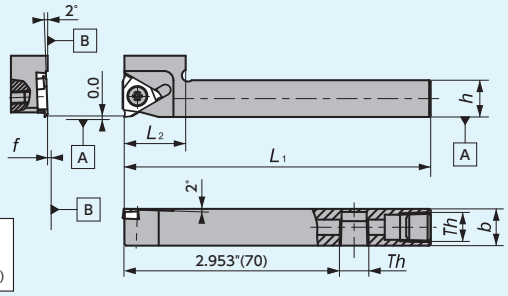
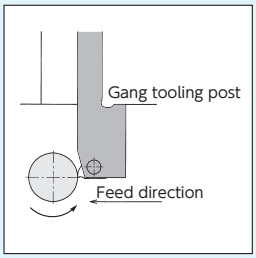


Figure-4

Th (Thread type)
Inch size holder : NPT1/8
Metric size holder: M6, Rc1/8 (PT1/8)



Right-Hand style shown
Takes Right-hand Insert

CH-GTT

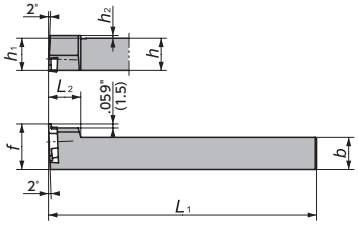
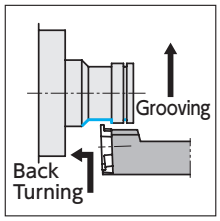


Figure-5



Left-Hand style shown
Takes Right-hand Insert

DS-GTT

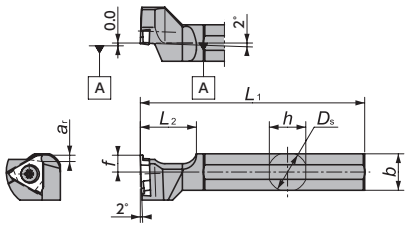
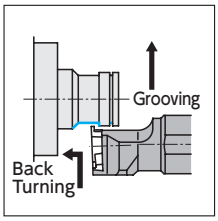


Figure-6



Left-Hand style shown
Takes Right-hand Insert

● : Stock ○ : 1-2 week delivery 💧 : Coolant through

Inserts ➡T12 Cutting condition ➡T4

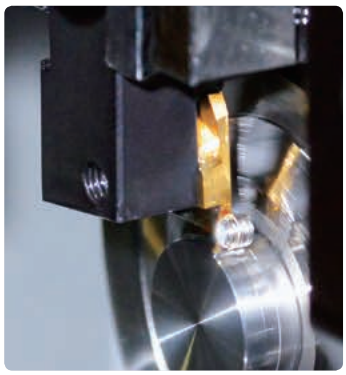
GTT

Gage Insert	Item Number	Figure	Stock R	Stock L	Groove Width W (Inch)	Groove Width W (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	a_r (Inch)	a_r (mm)	h_2 (Inch)	h_2 (mm)	Th	Clamp Screw	Wrench
 GTM..32 TMG32	GTT□06A-IN	1	●	●	.012-.125	0.30-3.17	3/8		3/8		3/8		4.724	120	.000	0	.591	15.0	.071	1.8	.118	3	–	LR-S-4×10PW	CLR-15S
	GTT□06B-IN	1	●	●	.057-.125	1.45-3.17	3/8		3/8		3/8		4.724	120	.000	0	.591	15.0	.106	2.7	.118	3	–	LR-S-4×10PW	CLR-15S
	GTT□08A-IN	1	●	●	.012-.125	0.30-3.17	1/2		1/2		1/2		4.724	120	.000	0	.591	15.0	.071	1.8	.039	1	–	LR-S-4×10PW	CLR-15S
	GTT□08B-IN	1	●	●	.057-.125	1.45-3.17	1/2		1/2		1/2		4.724	120	.000	0	.591	15.0	.106	2.7	.039	1	–	LR-S-4×10PW	CLR-15S
	GTT□10A-IN	1	●	●	.012-.125	0.30-3.17	5/8		5/8		5/8		4.724	120	.000	0	.591	15.0	.071	1.8	.000	0	–	LR-S-4×10PW	CLR-15S
	GTT□10B-IN	1	●	●	.057-.125	1.45-3.17	5/8		5/8		5/8		4.724	120	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTT□12A-IN	1	●	●	.012-.125	0.30-3.17	3/4		3/4		3/4		4.724	120	.000	0	.591	15.0	.071	1.8	.000	0	–	LR-S-4×10PW	CLR-15S
	GTT□12B-IN	1	●		.057-.125	1.45-3.17	3/4		3/4		3/4		4.724	120	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTT□08F00	1	○	○	.012-.125	0.30-3.17	.315	8	.315	8	.315	8	3.150	80	.000	0	.591	15.0	.071	1.8	.157	5	–	R:LR-S-4×10PW L:LR-S-4×5.8	CLR-15S
	GTT□0810F00	1	○	○	.012-.125	0.30-3.17	.315	8	.394	10	.315	8	3.150	80	.000	0	.591	15.0	.071	1.8	.157	5	–	LR-S-4×10PW	CLR-15S
	GTT□08K00	1	○	○	.012-.125	0.30-3.17	.315	8	.315	8	.315	8	4.724	120	.000	0	.591	15.0	.071	1.8	.157	5	–	R:LR-S-4×10PW L:LR-S-4×5.8	CLR-15S
	GTT□0810K00	1	○	○	.012-.125	0.30-3.17	.315	8	.394	10	.315	8	4.724	120	.000	0	.591	15.0	.071	1.8	.157	5	–	LR-S-4×10PW	CLR-15S
	GTT□10F00	1	○		.012-.125	0.30-3.17	.394	10	.394	10	.394	10	3.150	80	.000	0	.591	15.0	.071	1.8	.118	3	–	LR-S-4×10PW	CLR-15S
	GTT□10K00	1	○		.012-.125	0.30-3.17	.394	10	.394	10	.394	10	4.724	120	.000	0	.591	15.0	.071	1.8	.118	3	–	LR-S-4×10PW	CLR-15S
	GTT□12F00	1	○	○	.012-.125	0.30-3.17	.472	12	.472	12	.472	12	3.150	80	.000	0	.591	15.0	.071	1.8	.040	1	–	LR-S-4×10PW	CLR-15S
	GTT□12K00	1	●	○	.012-.125	0.30-3.17	.472	12	.472	12	.472	12	4.724	120	.000	0	.591	15.0	.071	1.8	.040	1	–	LR-S-4×10PW	CLR-15S
	GTT□16H00	1	○	○	.012-.125	0.30-3.17	.630	16	.630	16	.630	16	3.937	100	.000	0	.591	15.0	.071	1.8	.000	0	–	LR-S-4×10PW	CLR-15S
	GTT□16K00	1	○	○	.012-.125	0.30-3.17	.630	16	.630	16	.630	16	4.724	120	.000	0	.591	15.0	.071	1.8	.000	0	–	LR-S-4×10PW	CLR-15S
	GTT□20K00	1	○	○	.012-.125	0.30-3.17	.787	20	.787	20	.787	20	4.921	125	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTT□25M00	1	○	○	.012-.125	0.30-3.17	.984	25	.984	25	.984	25	5.906	150	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTT□10F15	1	○	○	.057-.125	1.45-3.17	.394	10	.394	10	.394	10	3.150	80	.000	0	.591	15.0	.106	2.7	.118	3	–	LR-S-4×10PW	CLR-15S
	GTT□10K15	1	○	○	.057-.125	1.45-3.17	.394	10	.394	10	.394	10	4.724	120	.000	0	.591	15.0	.106	2.7	.118	3	–	LR-S-4×10PW	CLR-15S
	GTT□12F15	1	○	○	.057-.125	1.45-3.17	.472	12	.472	12	.472	12	3.150	80	.000	0	.591	15.0	.106	2.7	.040	1	–	LR-S-4×10PW	CLR-15S
	GTT□12K15	1	○	○	.057-.125	1.45-3.17	.472	12	.472	12	.472	12	4.724	120	.000	0	.591	15.0	.106	2.7	.040	1	–	LR-S-4×10PW	CLR-15S
	GTT□16H15	1	○	○	.057-.125	1.45-3.17	.630	16	.630	16	.630	16	3.937	100	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTT□16K15	1	●	○	.057-.125	1.45-3.17	.630	16	.630	16	.630	16	4.724	120	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTT□10F25	1	○	○	.098-.125	2.50-3.17	.394	10	.394	10	.394	10	3.150	80	.000	0	.591	15.0	.106	2.7	.118	3	–	LR-S-4×10PW	CLR-15S
	GTT□10K25	1	○	○	.098-.125	2.50-3.17	.394	10	.394	10	.394	10	4.724	120	.000	0	.591	15.0	.106	2.7	.118	3	–	LR-S-4×10PW	CLR-15S
	GTT□12F25	1	○	○	.098-.125	2.50-3.17	.472	12	.472	12	.472	12	3.150	80	.000	0	.591	15.0	.106	2.7	.040	1	–	LR-S-4×10PW	CLR-15S
	GTT□12K25	1	○	○	.098-.125	2.50-3.17	.472	12	.472	12	.472	12	4.724	120	.000	0	.591	15.0	.106	2.7	.040	1	–	LR-S-4×10PW	CLR-15S
	GTT□16H25	1	○	○	.098-.125	2.50-3.17	.630	16	.630	16	.630	16	3.937	100	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTT□16K25	1	○	○	.098-.125	2.50-3.17	.630	16	.630	16	.630	16	4.724	120	.000	0	.591	15.0	.106	2.7	.000	0	–	LR-S-4×10PW	CLR-15S
	GTT□08HA-IN-OH	2	●		.012-.125	0.30-3.17	1/2		1/2		1/2		3.937	100	.000	0	.768	19.5	.071	1.8	.039	1	NPT1/8	LR-S-4×10PW	CLR-15S
	GTT□08HB-IN-OH	2	●		.057-.125	1.45-3.17	1/2		1/2		1/2		3.937	100	.000	0	.768	19.5	.106	2.7	.039	1	NPT1/8	LR-S-4×10PW	CLR-15S
	GTT□10HA-IN-OH	2	●		.012-.125	0.30-3.17	5/8		5/8		5/8		3.937	100	.000	0	.768	19.5	.071	1.8	.000	0	NPT1/8	LR-S-4×10PW	CLR-15S
	GTT□10HB-IN-OH	2	●		.057-.125	1.45-3.17	5/8		5/8		5/8		3.937	100	.000	0	.768	19.5	.106	2.7	.000	0	NPT1/8	LR-S-4×10PW	CLR-15S
	GTT□1012H00-OH	2	○		.012-.125	0.30-3.17	.394	10	.472	12	.394	10	3.937	100	.000	0	.768	19.5	.071	1.8	.039	1	M6 × 1	LR-S-4×10PW	CLR-15S
	GTT□12H00-OH	2	●		.012-.125	0.30-3.17	.472	12	.472	12	.472	12	3.937	100	.000	0	.768	19.5	.071	1.8	.039	1	Rc1/8 (PT1/8)	LR-S-4×10PW	CLR-15S
	GTT□16H00-OH	2	○		.012-.125	0.30-3.17	.630	16	.630	16	.630	16	3.937	100	.000	0	.768	19.5	.071	1.8	0	0	Rc1/8 (PT1/8)	LR-S-4×10PW	CLR-15S
	Y-GTTR□06-IN	3	●		.012-.125	0.30-3.17	3/8		3/8		–	–	4.724	120	.000	0	.984	25.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTTR□08-IN	3	●		.012-.125	0.30-3.17	1/2		1/2		–	–	4.724	120	.000	0	.984	25.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTTR□10-IN	3	●		.012-.125	0.30-3.17	5/8		5/8		–	–	4.724	120	.000	0	.984	25.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT□10MS	2	○		.012-.125	0.30-3.17	.394	10	.394	10	–	–	4.724	120	.000	0	.866	22.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT□10S	3	○		.012-.125	0.30-3.17	.394	10	.394	10	–	–	4.724	120	.000	0	.787	20.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT□12MS	2	○		.012-.125	0.30-3.17	.472	12	.472	12	–	–	4.724	120	.000	0	.866	22.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT□12S	3	○		.012-.125	0.30-3.17	.472	12	.472	12	–	–	4.724	120	.000	0	.787	20.0	.063	1.6	–	–	–	LR-S-4×10PW	CLR-15S
	Y-GTT□08H-IN-OH	4	●		.012-.125	0.30-3.17	1/2		1/2		–	–	3.937	100	.000	0	.984	25.0	.063	1.6	–	–	NTP1/8	LR-S-4×10PW	CLR-15S
	Y-GTT□12H00S-OH	4	●		.012-.125	0.30-3.17	.472	12	.472	12	–	–	3.937	100	.000	0	.787	20.0	.063	1.6	–	–	Rc1/8 (PT1/8)	LR-S-4×10PW	CLR-15S
	Y-GTT□16H00-OH	4	○		.012-.125	0.30-3.17	.630	16	.472	16	–	–	3.937	100	.000	0	.984	25.0	.063	1.6	–	–	Rc1/8 (PT1/8)	LR-S-4×10PW	CLR-15S
	CH-GTT□10H00	5		○	.012-.125	0.30-3.17	.394	10	.394	10	.394	10.0	4.724	120	.591	15	.472	12.0	.059	1.5	.118	3	–	LR-S-4×10PW	CLR-15S
	CH-GTT□12H00	5		○	.012-.125	0.30-3.17	.472	12	.472	12	.472	12.0	4.724	120	.669	17	.472	12.0	.059	1.5	.040	1	–	LR-S-4×10PW	CLR-15S

DS-GTT

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Clamp Screw	Wrench
 GTM..32 TMG32	DS-GTT□14F	6		○	.551	14.000	.512	13	.512	13	3.150	80	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT□15H	6		○	.518	15.875	.591	15	.591	15	3.937	100	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT□16X	6		●	.630	16.000	.591	15	.591	15	3.740	95	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT□19	6		●	3/4	19.050	.709	18	.709	18	4.724	120	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT□20	6		●	.787	20.000	.748	19	.748	19	4.724	120	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT□22	6		●	.866	22.000	.827	21	.827	21	4.724	120	.236	6	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT□25-MET	6		○	.984	25.000	.945	24	.945	24	5.906	150	.394	10	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT□25	6		●	1	25.400	.945	24	.945	24	4.724	120	.394	10	.787	20	LR-S-4 × 9	RLR-20S
	DS-GTT□32	6		○	.984	25.000	.945	24	.945	24	4.724	120	.394	10	.787	20	LR-S-4 × 9	RLR-20S

NEW GTMH-GX Chipbreaker for Grooving / Side Turning





Groove width .059"～



Groove width ～.039"

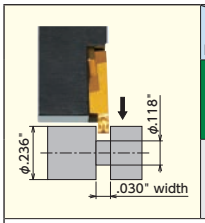
WATCH ON YouTube

Features

- Can solve either problems of chips remaining in the grooves or bird's nest of chips
- Good surface finishes on groove side faces
- UP to .078" DOC side turning capability

Excellent Chip Control

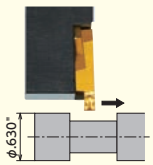
● Grooving



DOC \ Feed rate (IPR)	.0004"	.0011"	.0020"
GX chipbreaker			
Competiton's chipbreaker			

Material : 304 SS(ϕ.630"), 260 SFM, .059", DOC

● Side Turning



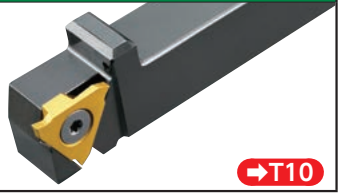
DOC \ Feed rate (IPR)	.0004"	.0011"	.0020"	.0031"
.010"				
.020"				
.030"				

Material : 304 SS(ϕ.630"), 260 SFM, .030" width insert

Best Solution for Chip Control

Now available in Coolant through toolholders

GTT-OH



➡T10

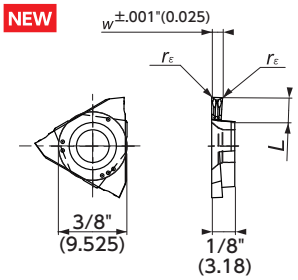
Y-GTT-OH



➡T10

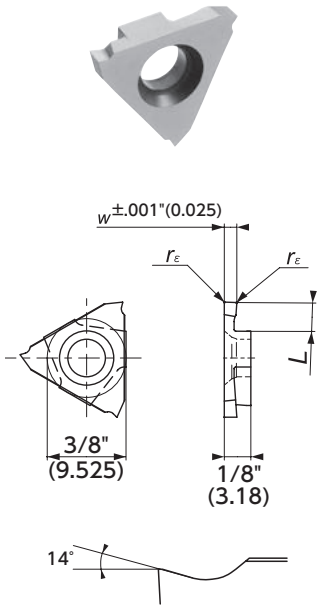
GTMH32.. Inserts - Carbide

■GTMH32-GX

Shape	Item Number	Groove Width W (Inch)	Groove Width W (mm)	Max Depth of Cut Grooving (Inch)	Max Depth of Cut Grooving (mm)	Max Depth of Cut Side turning (Inch)	Max Depth of Cut Side turning (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide DM4 R	Coated Carbide DM4 L	Coated Carbide TM4 R	Coated Carbide TM4 L
Side Turning Capable NEW  Right-Hand style shown	GTMH32075RGX	.030	0.75	.063	1.6	.030	0.75	.079	2.0	.002	0.05	●		○	
	GTMH32095RGX	.037	0.95	.063	1.6	.059	1.50	.079	2.0	.002	0.05	●		○	
	GTMH32100RGX	.039	1.00	.063	1.6	.059	1.50	.079	2.0	.002	0.05	●		○	
	GTMH32100RGX01	.039	1.00	.063	1.6	.059	1.50	.079	2.0	.004	0.1	●		○	
	GTMH32150RGX	.059	1.50	.106	2.7	.079	2.00	.118	3.0	.002	0.05	●		○	
	GTMH32150RGX01	.059	1.50	.106	2.7	.079	2.00	.118	3.0	.004	0.1	●		○	
	GTMH32150RGX02	.059	1.50	.106	2.7	.079	2.00	.118	3.0	.008	0.2	●		○	
	GTMH32200RGX	.079	2.00	.106	2.7	.079	2.00	.118	3.0	.002	0.05	●		○	
	GTMH32200RGX01	.079	2.00	.106	2.7	.079	2.00	.118	3.0	.004	0.1	●		○	
	GTMH32200RGX02	.079	2.00	.106	2.7	.079	2.00	.118	3.0	.008	0.2	●		○	
	GTMH32300RGX	.118	3.00	.106	2.7	.079	2.00	.118	3.0	.002	0.05	●		○	
	GTMH32300RGX02	.118	3.00	.106	2.7	.079	2.00	.118	3.0	.008	0.2	●		○	

■GTMX32

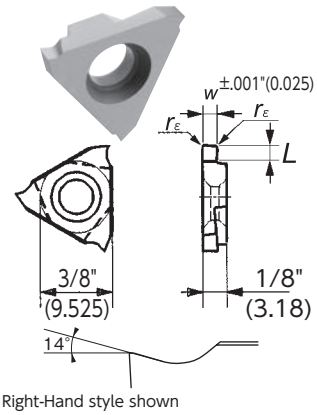
Shape	Item Number	Groove Width W (Inch)	Groove Width W (mm)	Max Depth of Cut Grooving (Inch)	Max Depth of Cut Grooving (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide QM3 R	Coated Carbide QM3 L	Coated Carbide DT4 R	Coated Carbide DT4 L
Side Turning Capable	GTMX32030R/LT	.012	0.30	.010	0.25	.024	0.6	.002	0.05	●	□	○	
	GTMX32033R/LT	.013	0.33	.010	0.25	.024	0.6	.002	0.05	●	■		
	GTMX32043R/LT	.017	0.43	.035	0.9	.047	1.2	.002	0.05	●	□	○	
	GTMX32050R/LT	.020	0.50	.035	0.9	.047	1.2	.002	0.05	●	■	○	
	GTMX32053R/LT	.021	0.53	.035	0.9	.047	1.2	.002	0.05	●	□		
	GTMX32065R/LT	.026	0.65	.035	0.9	.047	1.2	.002	0.05	●	□	○	
	GTMX32075R/LT	.030	0.75	.063	1.6	.079	2.0	.002	0.05	●	●	○	○
	GTMX32080R/LT	.031	0.80	.063	1.6	.079	2.0	.002	0.05	●	■	○	
	GTMX32095R/LT	.037	0.95	.063	1.6	.079	2.0	.002	0.05	○	○	○	○
	GTMX32100R/LT	.039	1.00	.063	1.6	.079	2.0	.002	0.05	●	□	○	
	GTMX32100R/LT01	.039	1.00	.063	1.6	.079	2.0	.004	0.1	●	□	○	
	GTMX32110R/LT	.043	1.10	.063	1.6	.079	2.0	.002	0.05	○	□		
	GTMX32120R/LT	.047	1.20	.063	1.6	.079	2.0	.002	0.05	●	□	○	
	GTMX32120R/LT01	.047	1.20	.063	1.6	.079	2.0	.004	0.1	●	□	○	
	GTMX32125R/LT	.049	1.25	.063	1.6	.079	2.0	.002	0.05	●	■	○	
	GTMX32130R/LT	.051	1.30	.063	1.6	.079	2.0	.002	0.05	○	□	○	
	GTMX32140R/LT	.055	1.40	.063	1.6	.079	2.0	.002	0.05	○	□	○	
	GTMX32145R/LT	.057	1.45	.106	2.7	.118	3.0	.002	0.05	○	□		
	GTMX32150R/LT	.059	1.50	.106	2.7	.118	3.0	.002	0.05	●	●	○	○
	GTMX32150R/LT01	.059	1.50	.106	2.7	.118	3.0	.004	0.1	●	□	○	
	GTMX32150R/LT02	.059	1.50	.106	2.7	.118	3.0	.008	0.2	●		○	
	GTMX32160R/LT	.063	1.60	.106	2.7	.118	3.0	.002	0.05	●	□	○	
	GTMX32175R/LT	.069	1.75	.106	2.7	.118	3.0	.002	0.05	○	●	○	
	GTMX32180R/LT	.071	1.80	.106	2.7	.118	3.0	.002	0.05	○	□	○	
	GTMX32200R/LT	.079	2.00	.106	2.7	.118	3.0	.002	0.05	●	●	○	○
	GTMX32200R/LT01	.079	2.00	.106	2.7	.118	3.0	.004	0.1	○	○	○	○
	GTMX32200R/LT02	.079	2.00	.106	2.7	.118	3.0	.008	0.2	●		○	
	GTMX32250R/LT	.098	2.50	.106	2.7	.118	3.0	.002	0.05	●	○	○	○
	GTMX32250R/LT01	.098	2.50	.106	2.7	.118	3.0	.004	0.1	○		○	
	GTMX32250R/LT02	.098	2.50	.106	2.7	.118	3.0	.008	0.2	○		○	
	GTMX32300R/LT	.118	3.00	.106	2.7	.118	3.0	.002	0.05	●	■	○	
	GTMX32300R/LT02	.118	3.00	.106	2.7	.118	3.0	.008	0.2	●		○	



Right-Hand style shown

■GTMH32 - VT Mirror finish

Shape	Item Number	Groove Width W (Inch)	Groove Width W (mm)	Max Depth of Cut Grooving (Inch)	Max Depth of Cut Grooving (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide VM1 R	Coated Carbide VM1 L
Side Turning Capable	GTMH32033R/LVT Ⓜ	.013	0.33	.010	0.25	.024	0.6	0.0	0.0	●	
	GTMH32043R/LVT Ⓜ	.017	0.43	.035	0.9	.047	1.2	0.0	0.0	●	
	GTMH32053R/LVT Ⓜ	.021	0.53	.063	1.6	.079	2.0	0.0	0.0	●	
	GTMH32065R/LVT Ⓜ	.026	0.65	.063	1.6	.079	2.0	0.0	0.0	●	
	GTMH32075R/LVT Ⓜ	.030	0.75	.063	1.6	.079	2.0	0.0	0.0	●	
	GTMH32080R/LVT Ⓜ	.031	0.80	.063	1.6	.079	2.0	0.0	0.0	○	
	GTMH32085R/LVT Ⓜ	.033	0.85	.063	1.6	.079	2.0	0.0	0.0	○	
	GTMH32095R/LVT Ⓜ	.037	0.95	.063	1.6	.079	2.0	0.0	0.0	○	
	GTMH32100R/LVT Ⓜ	.039	1.00	.063	1.6	.079	2.0	0.0	0.0	●	
	GTMH32110R/LVT Ⓜ	.043	1.10	.063	1.6	.079	2.0	0.0	0.0	○	
	GTMH32120R/LVT Ⓜ	.047	1.20	.063	1.6	.079	2.0	0.0	0.0	○	
	GTMH32130R/LVT Ⓜ	.051	1.30	.063	1.6	.079	2.0	0.0	0.0	○	
	GTMH32140R/LVT Ⓜ	.055	1.40	.063	1.6	.079	2.0	0.0	0.0	○	
	GTMH32150R/LVT Ⓜ	.059	1.50	.106	2.7	.118	3.0	0.0	0.0	●	
	GTMH32200R/LVT Ⓜ	.079	2.00	.106	2.7	.118	3.0	0.0	0.0	●	



Right-Hand style shown

■Side turning instruction for GTMH-GX / GTMX-T / GTMH-VT

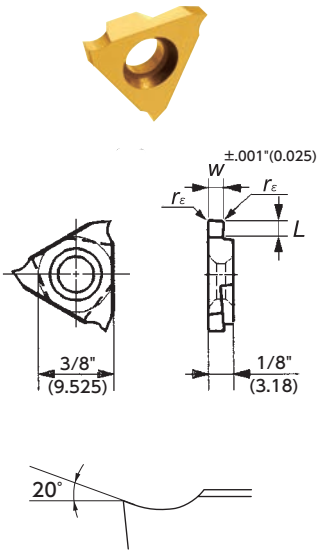
①To perform side turning with an insert whose groove width is greater than .017" set side turning feed rate to .001 IPR or smaller.

②When performing side turning with an insert whose groove width is greater than .017" and the feed rate is over .001 IPR (.004 IPR max), it is likely that chips will damage grooved sides. In this case, please perform grooving in two or more passes to make room for chips before performing side turning.

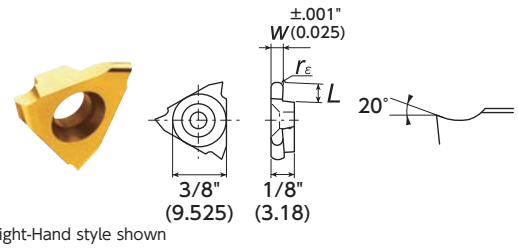
● : Stock ○ : 1-2 week delivery ■,□ : While stock lasts Ⓜ : Mirror finish Holders ➡T10 Cutting condition ➡T4

Grooving / Side-Turning

■GTMH32 – E

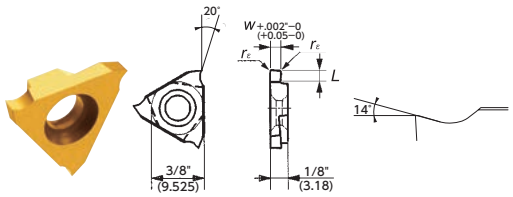
Shape	Item Number	Groove width W (Inch)	Groove width W (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide ZM3 R	Coated Carbide ZM3 L
	GTMH32033R/LE	.013	0.33	.012	0.3	.024	0.6	.001	0.03	○	○
	GTMH32043R/LE	.017	0.43	.035	0.9	.047	1.2	.001	0.03	●	○
	GTMH32053R/LE	.021	0.53	.035	0.9	.047	1.2	.002	0.05	○	○
	GTMH32075R/LE	.030	0.75	.063	1.6	.079	2.0	.002	0.05	○	○
	GTMH32077R/LE	.030	0.77	.063	1.6	.079	2.0	.002	0.05	○	
	GTMH32095R/LE	.037	0.95	.063	1.6	.079	2.0	.002	0.05	○	○
	GTMH32097R/LE	.038	0.97	.063	1.6	.079	2.0	.002	0.05	○	
	GTMH32100R/LE	.039	1.00	.063	1.6	.079	2.0	.002	0.05	○	○
	GTMH32100R/LE01	.039	1.00	.063	1.6	.079	2.0	.004	0.1	○	○
	GTMH32120R/LE	.047	1.20	.063	1.6	.079	2.0	.002	0.05	●	○
	GTMH32120R/LE01	.047	1.20	.063	1.6	.079	2.0	.004	0.1	○	○
	GTMH32125R/LE	.049	1.25	.063	1.6	.079	2.0	.002	0.05	○	
	GTMH32140R/LE	.055	1.40	.063	1.6	.079	2.0	.002	0.05	○	○
	GTMH32145R/LE	.057	1.45	.063	1.6	.079	2.0	.002	0.05	○	
	GTMH32150R/LE	.059	1.50	.106	2.7	.118	3.0	.002	0.05	○	○
	GTMH32150R/LE01	.059	1.50	.106	2.7	.118	3.0	.004	0.1	○	○
	GTMH32175R/LE	.069	1.75	.106	2.7	.118	3.0	.002	0.05	○	
	GTMH32180R/LE	.071	1.80	.106	2.7	.118	3.0	.002	0.05	○	○
	GTMH32200R/LE	.079	2.00	.106	2.7	.118	3.0	.002	0.05	○	○
	GTMH32200R/LE01	.079	2.00	.106	2.7	.118	3.0	.004	0.1	○	○
	GTMH32225R/LE	.089	2.25	.106	2.7	.118	3.0	.002	0.05	○	○
	GTMH32250R/LE	.098	2.50	.106	2.7	.118	3.0	.002	0.05	○	○
	GTMH32275R/LE	.108	2.75	.106	2.7	.118	3.0	.002	0.05	○	○
Right-Hand style shown	GTMH32300R/LE	.118	3.00	.106	2.7	.118	3.0	.002	0.05	○	○

■GTMH32 (Full radius style)

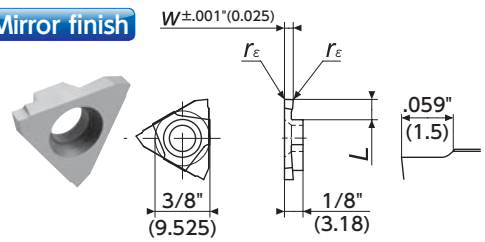
Shape	Item Number	Groove Width w (Inch)	Groove Width w (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide QM3 R	Coated Carbide QM3 L	Coated Carbide ZM3 R	Coated Carbide ZM3 L
	GTMH32050R/LE025	.020	0.50	.035	0.9	.047	1.2	.010	0.25	●		●	
	GTMH32070R/LE035	.028	0.70	.063	1.6	.079	2.0	.014	0.35	●		●	
	GTMH32100R/LE05	.039	1.00	.063	1.6	.079	2.0	.020	0.50	●		●	
	GTMH32150R/LE075	.059	1.50	.106	2.7	.118	3.0	.030	0.75	●			
	GTMH32200R/LE10	.079	2.00	.106	2.7	.118	3.0	.039	1.00	●		○	
Right-Hand style shown	GTMH32300R/LE15	.118	3.00	.106	2.7	.118	3.0	.059	1.50	●		○	

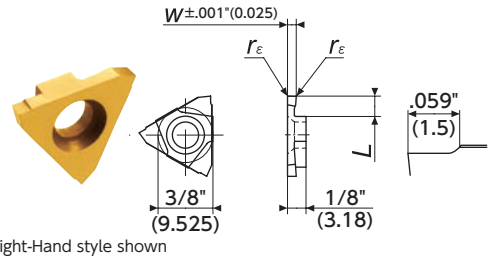
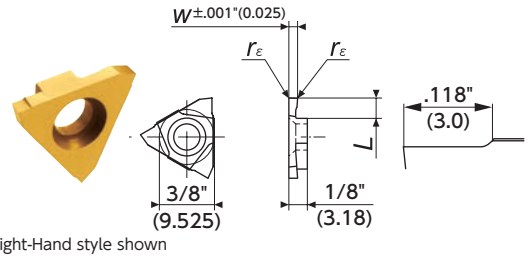
● : Stock ○ : 1-2 week delivery ■,□ : While stock lasts Ⓜ : Mirror finish Holders ➡T10 Cutting condition ➡T4

■TMG32-E

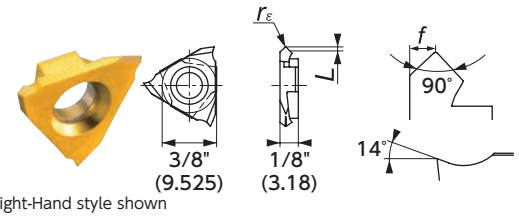
Shape	Item Number	Groove Width w (Inch)	Groove Width w (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide ZM3 R	Coated Carbide ZM3 L
 Right-Hand style shown	TMG32031R/LE01	.031	0.79	.063	1.6	.079	2.0	.004	0.1	●	■
	TMG32039R/LE01	.039	1.00	.063	1.6	.079	2.0	.004	0.1	●	●
	TMG32049R/LE01	.049	1.25	.063	1.6	.079	2.0	.004	0.1	●	■
	TMG32062R/LE02	.062	1.57	.106	2.7	.118	3.0	.008	0.2	●	□
	TMG32079R/LE02	.079	2.00	.106	2.7	.118	3.0	.008	0.2	●	□
	TMG32094R/LE02	.094	2.39	.106	2.7	.118	3.0	.008	0.2	●	
	TMG32125R/LE02	.125	3.18	.106	2.7	.118	3.0	.008	0.2	●	□

■GTMH • X32 (Flat top chipbreaker)

Shape	Item Number	Groove Width w (Inch)	Groove Width w (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	Carbide KM1 R	Carbide KM1 L
Mirror finish  Right-Hand style shown	GTMH32100R/LSSH (M)	.039	1.00	.063	1.6	.079	2.0	.002	0.05	●	
	GTMH32150R/LSSH (M)	.059	1.50	.106	2.7	.118	3.0	.002	0.05	●	
	GTMH32200R/LSSH (M)	.079	2.00	.106	2.7	.118	3.0	.002	0.05	●	

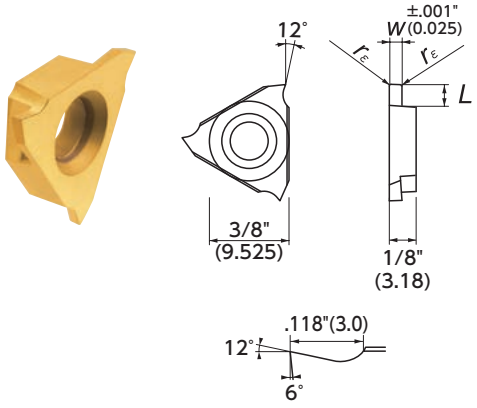
Shape	Item Number	Groove Width w (Inch)	Groove Width w (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide ZM3 R	Coated Carbide ZM3 L
 Right-Hand style shown	GTMX32100R/LSS	.039	1.00	.063	1.6	.079	2.0	.002	0.05	○	
	GTMX32150R/LSS	.059	1.50	.106	2.7	.118	3.0	.002	0.05	○	
	GTMX32200R/LSS	.079	2.00	.106	2.7	.118	3.0	.002	0.05	○	
 Right-Hand style shown	GTMX32100R/LLS	.039	1.00	.063	1.6	.079	2.0	.002	0.05	○	
	GTMX32150R/LLS	.059	1.50	.106	2.7	.118	3.0	.002	0.05	○	
	GTMX32200R/LLS	.079	2.00	.106	2.7	.118	3.0	.002	0.05	○	

■GTMX32 (90 Degree V-style)

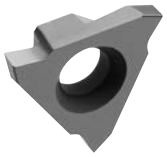
Shape	Item Number	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	Edge Geometry	r_ε (Inch)	r_ε (mm)	L (Inch)	L (mm)	Coated Carbide TM4 R	Coated Carbide TM4 L
 Right-Hand style shown	GTMX32V90R/L005	.020	0.5	90°	.002	0.05	.020	0.5	○	
	GTMX32V90R/L010	.028	0.7	90°	.004	0.1	.040	1.0	○	

GTMH32.. Inserts - Cermet

■GTMH32-J

Shape	Item Number	Groove Width *w* (Inch)	(mm)	Max Depth of Cut (Inch)	(mm)	*L* (Inch)	(mm)	r_ε (Inch)	(mm)	Coated Cermet C7Z R	L
	GTMH32075R/LJ005	.030	0.75	.063	1.6	.079	2.0	.002	0.05	○	○
	GTMH32080R/LJ005	.031	0.80	.063	1.6	.079	2.0	.002	0.05	○	
	GTMH32095R/LJ005	.037	0.95	.063	1.6	.079	2.0	.002	0.05	○	
	GTMH32100R/LJ005	.039	1.00	.063	1.6	.079	2.0	.002	0.05	○	○
	GTMH32115R/LJ005	.045	1.15	.063	1.6	.079	2.0	.002	0.05	○	○
	GTMH32120R/LJ01	.047	1.20	.063	1.6	.079	2.0	.004	0.1	○	○
	GTMH32125R/LJ01	.049	1.25	.063	1.6	.079	2.0	.004	0.1	○	
	GTMH32145R/LJ01	.057	1.45	.106	2.7	.118	3.0	.004	0.1	○	
	GTMH32150R/LJ01	.059	1.50	.106	2.7	.118	3.0	.004	0.1	○	
	GTMH32150R/LJ	.059	1.50	.106	2.7	.118	3.0	.008	0.2	○	○
	GTMH32160R/LJ01	.063	1.60	.106	2.7	.118	3.0	.004	0.1	○	
	GTMH32175R/LJ01	.069	1.75	.106	2.7	.118	3.0	.004	0.1	○	
	GTMH32180R/LJ01	.071	1.80	.106	2.7	.118	3.0	.004	0.1	○	○
	GTMH32200R/LJ01	.079	2.00	.106	2.7	.118	3.0	.004	0.1	○	○
	GTMH32200R/LJ	.079	2.00	.106	2.7	.118	3.0	.008	0.2	○	○
	GTMH32250R/LJ01	.098	2.50	.106	2.7	.118	3.0	.004	0.1	○	○
	GTMH32250R/LJ	.098	2.50	.106	2.7	.118	3.0	.008	0.2	○	
Right-Hand style shown	GTMH32300R/LJ	.118	3.00	.106	2.7	.118	3.0	.008	0.2	○	○

■GTM32 (Molded Chipbreaker)

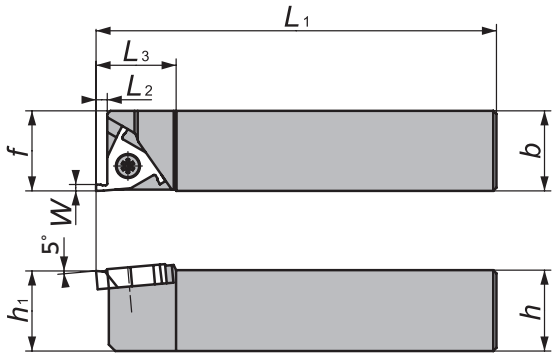
Shape	Item Number	Groove Width *w* (Inch)	(mm)	Max Depth of Cut (Inch)	(mm)	*L* (Inch)	(mm)	r_ε (Inch)	(mm)	Cermet XN4 R	L
	GTM32100R/L01	.039	1.00	.063	1.6	.079	2.0	.004	0.1	○	
	GTM32100R/L	.039	1.00	.063	1.6	.079	2.0	.008	0.2	○	
	GTM32145R/L	.057	1.45	.106	2.7	.118	3.0	.008	0.2	○	
	GTM32150R/L	.059	1.50	.106	2.7	.118	3.0	.008	0.2	○	○
	GTM32200R/L	.079	2.00	.106	2.7	.118	3.0	.008	0.2	○	○
	GTM32230R/L	.091	2.30	.106	2.7	.118	3.0	.008	0.2	○	
	GTM32250R/L	.098	2.50	.106	2.7	.118	3.0	.008	0.2	○	
Right-Hand style shown	GTM32300R/L	.118	3.00	.106	2.7	.118	3.0	.008	0.2	○	

Holders ➡T10 Cutting condition ➡T4

TWG Series

TWG

Side Turning Capable
Up to .059"(1.5㎜) doc.



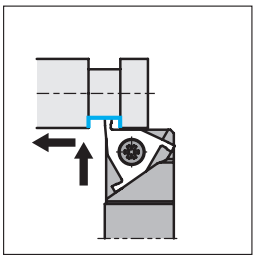


Figure-1

Right-Hand style shown

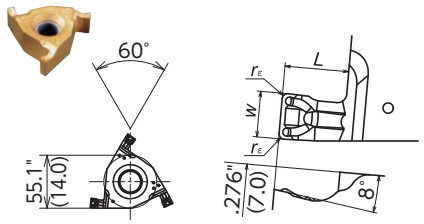
TWG Series - Toolholders

■TWG

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (㎜)	b (Inch)	b (㎜)	h_1 (Inch)	h_1 (㎜)	L_1 (Inch)	L_1 (㎜)	f (Inch)	f (㎜)	L_2 (Inch)	L_2 (㎜)	L_3 (Inch)	L_3 (㎜)	Clamp Screw	Wrench
 TWG	**TWG2012X**	1	○		.472	12	.787	20	.472	12	4.724	120	.787	20	.138	3.5	.984	25	FSS25-5.0 × 10	RLR-20S
	TWG2016X	1	○		.630	16	.787	20	.630	16	4.724	120	.787	20	.138	3.5	.984	25	FSS10-5.0 × 14	LLR-20S
	TWG□2020K	1	○	○	.787	20	.787	20	.787	20	4.921	125	.787	20	.138	3.5	.984	25	FSS10-5.0 × 14	RLR-20S
	TWG□2525K	1	○	○	.984	25	.984	25	.984	25	4.921	125	.984	25	.138	3.5	.984	25	FSS10-5.0 × 14	RLR-20S

TWG Series - Inserts

■TWG

Shape	Item Number	Groove Width w (Inch)	Groove Width w (㎜)	Max Depth of Cut (Inch)	Max Depth of Cut (㎜)	L (Inch)	L (㎜)	r_ε (Inch)	r_ε (㎜)	Coated Carbide TM1 R	Coated Carbide TM1 L
 Right-Hand style shown	**TWG20□005**	.079	2.0	.118	3.0	.138	3.5	.002	0.05	○	○
	TWG20□020	.079	2.0	.118	3.0	.138	3.5	.008	0.2	○	○
	TWG25□010	.098	2.5	.118	3.0	.138	3.5	.004	0.1	○	○
	TWG25□030	.098	2.5	.118	3.0	.138	3.5	.012	0.3	○	○
	TWG30□010	.118	3.0	.118	3.0	.138	3.5	.004	0.1	○	○
	TWG30□030	.118	3.0	.118	3.0	.138	3.5	.012	0.3	○	○

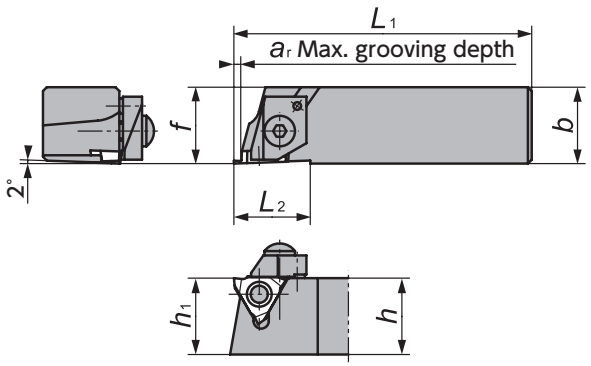
○ : 1-2 week delivery

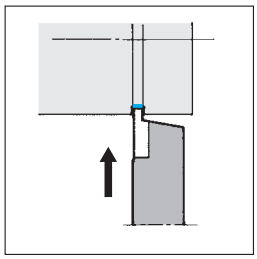
Cutting condition ➡T4

GTM.43 Series - Toolholders

NGTN

No-Offset





〈Parts〉

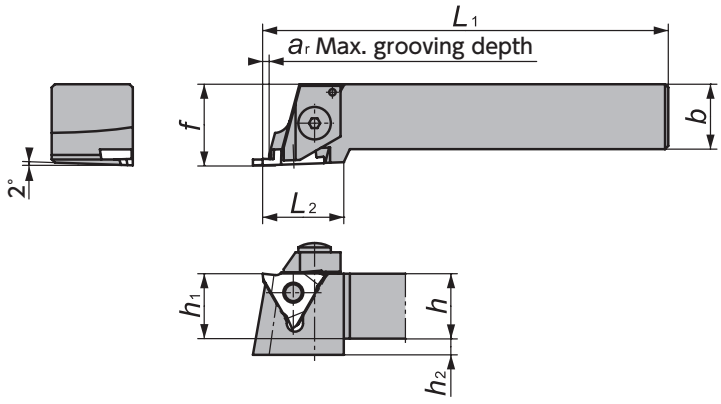
Clamp	Spring
CPR/L5S	ASG-5

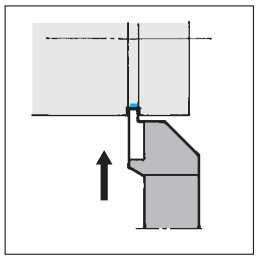
Figure-1

Right-Hand style shown

NGTB

With Offset





〈Parts〉

Clamp	Spring
CPR/L5	ASG-5
CPR/L6	ASG-6

Figure-2

Right-Hand style shown

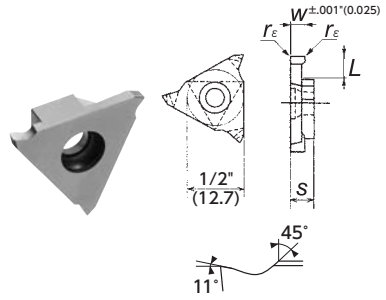
GTM.43 Series - Toolholders

■NGTN / NGTB

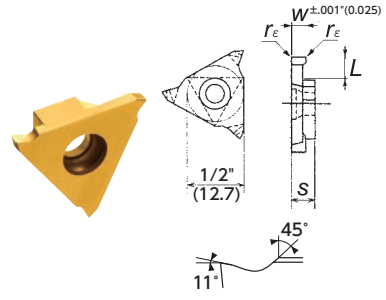
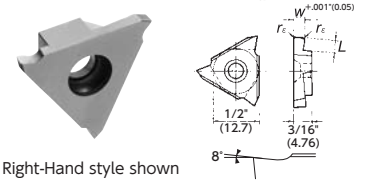
Gage Insert	Item Number	Figure	Stock R	Stock L	Groove Width Range w (Inch)	Groove Width Range w (mm)	a_r (Inch)	a_r (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	h_2 (Inch)	h_2 (mm)	Clamp Screw	Wrench
 GTM43 GTMA43 GTMT43	NGTN□161643-20	1	○	○	.079-.137	2.00-3.49	.177	4.5	.630	16	.630	16	.630	16	3.071	78	.630	16	.787	20	.354	9	A0S-5×20	LW-2.5
	NGTN□161643-35	1	○	○	.138-.217	3.50-5.50	.177	4.5	.630	16	.630	16	.630	16	3.071	78	.630	16	.787	20	.354	9	A0S-5×20	LW-2.5
	NGTB□161643-00S	2	○	○	.039-.098	1.00-2.49	.118	3.0	.630	16	.630	16	.630	16	3.150	100	.787	20	.984	25	.354	9	A0S-5×25	LW-2.5
	NGTB□161643-20S	2	○	○	.079-.137	2.00-3.49	.177	4.5	.630	16	.630	16	.630	16	3.150	100	.787	20	.984	25	.354	9	A0S-5×25	LW-2.5
	NGTB□161643-35S	2	○	○	.138-.217	3.50-5.50	.177	4.5	.630	16	.630	16	.630	16	3.150	100	.787	20	.984	25	.354	9	A0S-5×25	LW-2.5

GTMA43.. Inserts - Carbide / Cermet

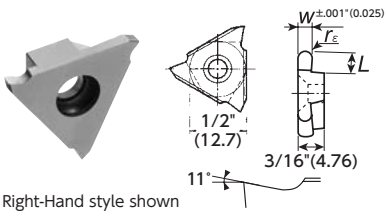
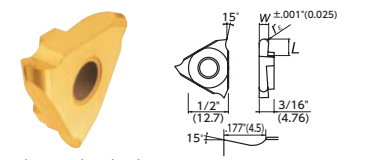
GTMT43 / GTMA43

Shape	Item Number	Groove Width w (Inch)	Groove Width w (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	s (Inch)	s (mm)	Coated Carbide QM3 R	Coated Carbide QM3 L	Coated Carbide DM4 R	Coated Carbide DM4 L
 Right-Hand style shown	GTMT43145R/L	.057	1.45	.118	3.0	.138	3.5	.008	0.2	.187	4.76	○	○	○	○
	GTMT43150R/L	.059	1.50	.118	3.0	.138	3.5	.008	0.2	.187	4.76	○	○	○	○
	GTMT43175R/L	.069	1.75	.118	3.0	.138	3.5	.008	0.2	.187	4.76	○	○	○	○
	GTMT43185R/L	.073	1.85	.118	3.0	.138	3.5	.008	0.2	.187	4.76	○	○	○	○
	GTMT43200R/L	.079	2.00	.118	3.0	.138	3.5	.008	0.2	.187	4.76	○	○	○	○
	GTMT43230R/L	.091	2.30	.118	3.0	.138	3.5	.008	0.2	.187	4.76	○	○	○	○
	GTMT43250R/L	.098	2.50	.169	4.3	.217	5.5	.012	0.3	.187	4.76	○		○	
	GTMT43265R/L	.104	2.65	.169	4.3	.217	5.5	.012	0.3	.187	4.76	○		○	
	GTMT43280R/L	.110	2.80	.169	4.3	.217	5.5	.012	0.3	.187	4.76	○	○	○	○
	GTMT43300R/L	.118	3.00	.169	4.3	.217	5.5	.012	0.3	.187	4.76	○	○	○	○
	GTMT43330R/L	.130	3.30	.169	4.3	.217	5.5	.012	0.3	.187	4.76	○	○		
	GTMT43350R/L	.138	3.50	.169	4.3	.217	5.5	.012	0.3	.187	4.76	○	○	○	○
	GTMT43400R/L	.157	4.00	.169	4.3	.217	5.5	.016	0.4	.187	4.76	○	○	○	○
	GTMT43450R/L	.177	4.50	.169	4.3	.217	5.5	.016	0.4	.187	4.76	○	○	○	○
	GTMT43500R/L	.197	5.00	.169	4.3	.217	5.5	.016	0.4	.227	5.76	○	○	○	○
	GTMT43550R/L	.217	5.50	.169	4.3	.217	5.5	.016	0.4	.227	5.76	○	○	○	○

GTMA43 / GTMA43 / GTM43

Shape	Item Number	Groove Width w (Inch)	Groove Width w (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	Coated Cermet C7Z R	Coated Cermet C7Z L	Cermet XN4 R	Cermet XN4 L
 Right-Hand style shown	GTMA43100R/L J01	.039	1.00	.063	1.6	.079	2.0	.004	0.1	○	○		
	GTMA43125R/L J01	.049	1.25	.063	1.6	.079	2.0	.004	0.1	○			
	GTMA43145R/L J01	.057	1.45	.118	3.0	.138	3.5	.004	0.1	○	○		
	GTMA43150R/L J	.059	1.50	.118	3.0	.138	3.5	.008	0.2	○	○		
	GTMA43175R/L J	.069	1.75	.118	3.0	.138	3.5	.008	0.2	○	○		
	GTMA43185R/L J	.073	1.85	.118	3.0	.138	3.5	.008	0.2	○			
	GTMA43200R/L J	.079	2.00	.118	3.0	.138	3.5	.008	0.2	○			
	GTMA43230R/L J	.091	2.30	.118	3.0	.138	3.5	.008	0.2	○			
	GTMA43250R/L J03	.098	2.50	.177	4.5	.217	5.5	.012	0.3	○			
	GTMA43265R/L J03	.104	2.65	.177	4.5	.217	5.5	.012	0.3	○			
	GTMA43280R/L J03	.110	2.80	.177	4.5	.217	5.5	.012	0.3	○			
	GTMA43300R/L J03	.118	3.00	.177	4.5	.217	5.5	.012	0.3	○	○		
	GTMA43330R/L J03	.130	3.30	.177	4.5	.217	5.5	.012	0.3	○			
	GTMA43350R/L J03	.138	3.50	.177	4.5	.217	5.5	.012	0.3	○			
	GTMA43400R/L J04	.157	4.00	.177	4.5	.217	5.5	.016	0.4	○	○		
	GTMA43450R/L J04	.177	4.50	.177	4.5	.217	5.5	.016	0.4	○	○		
 Right-Hand style shown	GTM43200R/L	.079	2.00	.118	3.0	.138	3.5	.008	0.2			○	○
	GTM43230R/L	.091	2.30	.118	3.0	.138	3.5	.008	0.2			○	
	GTM43250R/L	.098	2.50	.165	4.2	.217	5.5	.008	0.2			○	○
	GTM43265R/L	.104	2.65	.165	4.2	.217	5.5	.008	0.2			○	
	GTM43300R/L	.118	3.00	.165	4.2	.217	5.5	.008	0.2			○	○
	GTM43330R/L	.130	3.30	.165	4.2	.217	5.5	.008	0.2			○	
	GTM43350R/L	.138	3.50	.165	4.2	.217	5.5	.008	0.2			○	○
	GTM43400R/L	.157	4.00	.165	4.2	.217	5.5	.008	0.2			○	○
	GTM43450R/L	.177	4.50	.165	4.2	.217	5.5	.008	0.2			○	

GTMA43 (Full Radius style)

Shape	Item Number	Groove Width w (Inch)	Groove Width w (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	L (Inch)	L (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide QM3 R	Coated Carbide QM3 L	Coated Cermet C7Z R	Coated Cermet C7Z L
 Right-Hand style shown	GTMA43200R/L 10R	.079	2.00	.118	3.0	.138	3.5	.039	1.0	○			
	GTMA43300R/L 15R	.118	3.00	.177	4.5	.217	5.5	.059	1.5	○			
	GTMA43400 R/L 20R	.157	4.00	.177	4.5	.217	5.5	.787	2.0	○			
 Right-Hand style shown	GTMA43100R/L J05R	.039	1.00	.063	1.6	.079	2.0	.020	0.50			○	
	GTMA43150R/L J075R	.059	1.50	.118	3.0	.138	3.5	.030	0.75			○	
	GTMA43200R/L J10R	.079	2.00	.118	3.0	.138	3.5	.039	1.00			○	
	GTMA43250R/L J125R	.098	2.50	.157	4.0	.217	5.5	.049	1.25			○	
	GTMA43300R/L J15R	.118	3.00	.157	4.0	.217	5.5	.059	1.50			○	

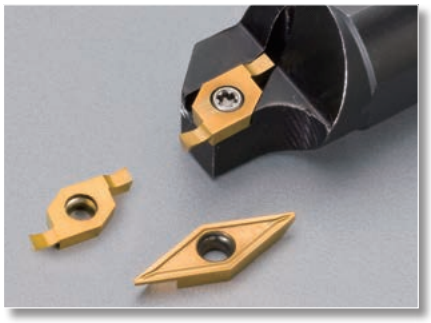
○ : 1-2 week delivery

Cutting condition ➡T4

SATURN DUO

Face grooving tool

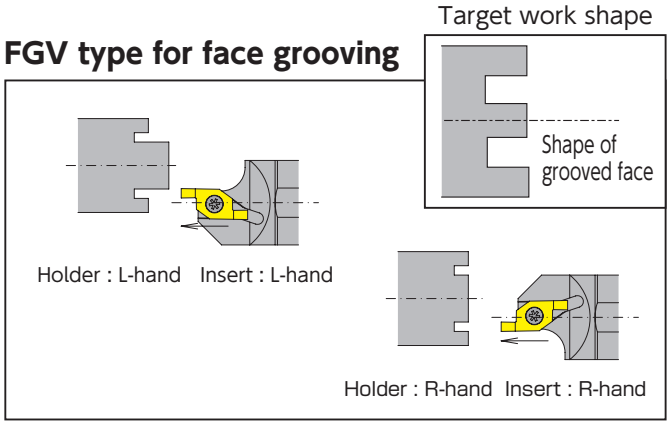
WATCH ON YouTube



Features

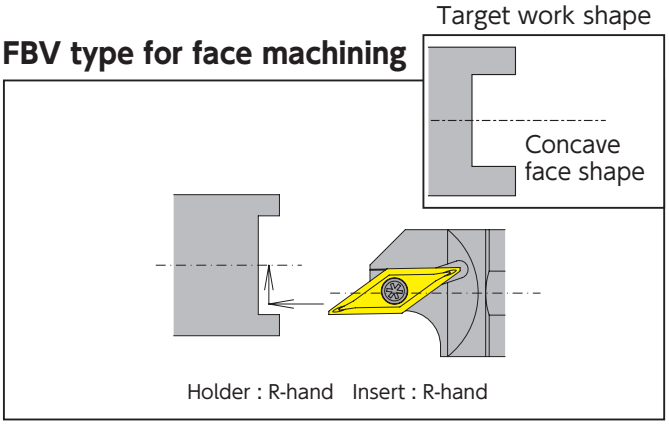
- FGV type for face grooving and FBV type for face machining
- Economical double-corner specification
- Improved tool rigidity by optimizing the overhang and holder shape
- Gang-type, front-gang-type and sleeve holder types available

FGV type for face grooving



- Grooving is possible under a wide range of cutting conditions due to strengthened rigidity of both insert and holder
- Minimum machining diameter of ϕ.236", and groove width of .039"
- Left-hand types available for machining work with a boss

FBV type for face machining



- Further improved face machining efficiency
- Minimum machining diameter of ϕ.315"

■Recommended Cutting Condition for FGV Style Tooling (for Face Grooving)

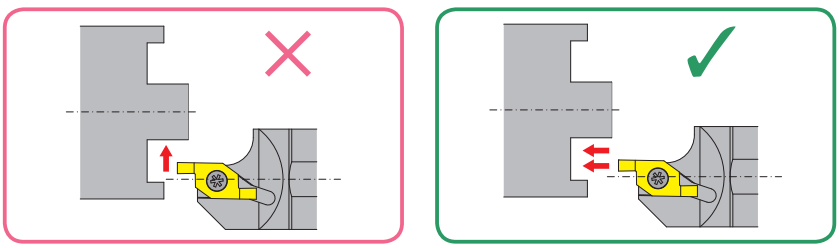
			Steel (Carbon Steel, Alloy Steel)	Stainless Steel (Excluding 303 SS)	Free Cutting Steel (Including 303 SS)	Non-ferrous Metals (Brass, Aluminum, Copper)
Speed (SFM)			160 (100 - 330)	130 (100 - 330)	200 (100 - 330)	260 (160 - 390)
Feed Rate (IPR)	Groove Depth (Inch)	.039	.001 (.0004-.002)	.0008 (.0004-.002)	.002 (.0004-.0025)	.002 (.0004-.0025)
		.059	.0008 (.0004-.002)	.0004 (.0002-.001)	.001 (.0004-.002)	.001 (.0004-.002)
		.079	.0004 (.0002-.001)	.0004 (.0002-.001)	.0008 (.0004-.002)	.0008 (.0004-.002)

☆Tips for Successful Face Grooving

①Run multiple passes if turning wider grooves.
Make sure to groove from outer diameter to inner diameter to avoid any interference.
②If lines appear on the boss section, slow down feed rate when retracting the tool.
③If scratch appears at the end of the boss, slow down the feed rate.
④If groove surface looks torn, either slow down feed rate or increase speed.
⑤If groove bottom looks torn with a speed and feed condition, increase the speed.

☆Note

Side turning cannot be performed with FGV style tooling



■Recommended Cutting Conditions for FBV Style Tooling (for Face Grooving)

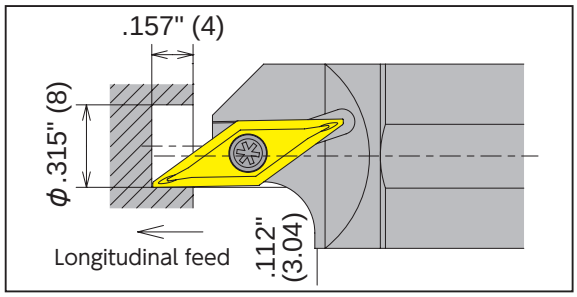
Minimum machining diameter: ϕ .315" (8㎜) WET

			Steel (Carbon Steel, Alloy Steel)	Stainless Steel (Excluding 303 SS)	Free Cutting Steel (Including 303 SS)	Non-ferrous Metals (Brass, Aluminum, Copper)
Speed (SFM)			160 (100 - 330)	130 (100 - 330)	200 (100 - 330)	260 (160 - 390)
Feed Rate (IPR)	Groove Depth (Inch)	.039	.001 (.0004-.002)	.0008 (.0004-.002)	.002 (.0004-.0025)	.002 (.0004-.0025)
		.059	.0008 (.0004-.002)	.0004 (.0002-.001)	.001 (.0004-.002)	.001 (.0004-.002)
		.079	.0004 (.0002-.001)	.0004 (.0002-.001)	.0008 (.0004-.002)	.0008 (.0004-.002)

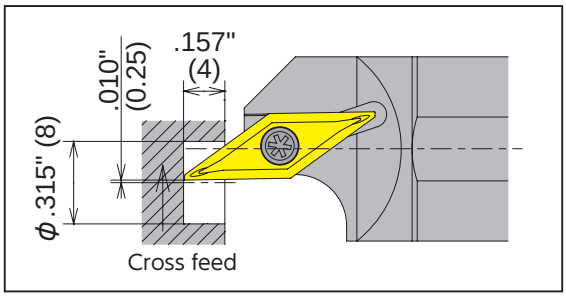
* When machining difficult materials where chip control is problematic (such as 304SS), it is recommended that the machining be carried out in several stages.

☆Machining process

- For materials with good machinability, it is possible to machine up to .157" (4㎜) deep at a low feed rate in a single pass for both longitudinal feed and cross feed.



Cutting in Z direction : Longitudinal feed



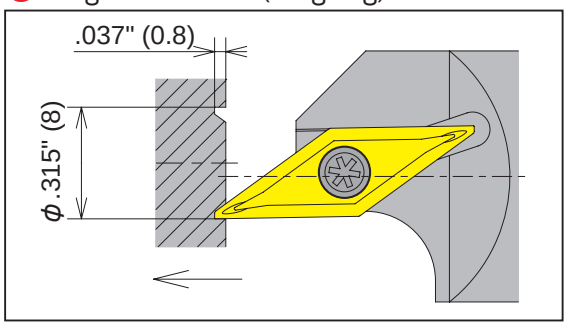
Cutting in X direction : Cross feed

☆Useful tips for machining

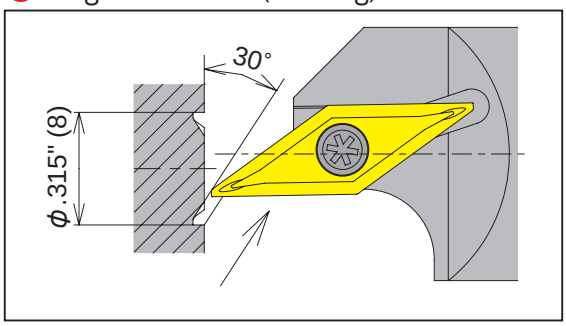
When burrs occur on ID surface, it is recommended to perform the cut in 2 passes, one for roughing and one for finishing as shown in the following procedure:

☆Example of 2-pass machining: Leave .008" (0.2㎜) on roughing then run a finish cut

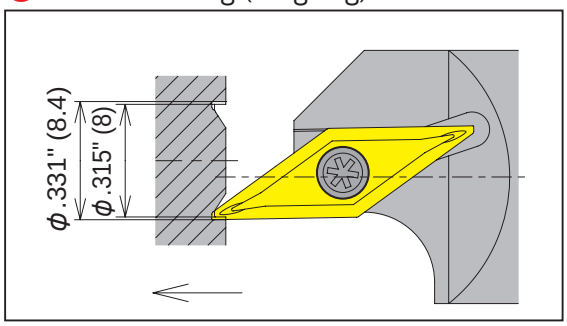
❶ Longitudinal feed (roughing)



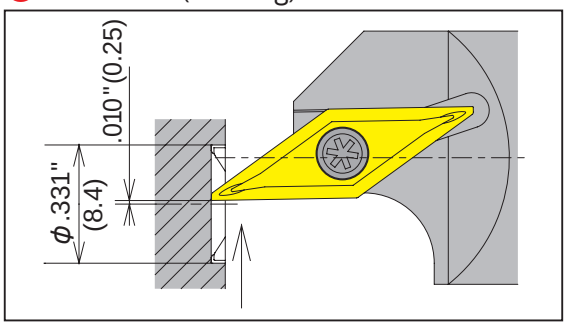
❷ Longitudinal feed (finishing)



❸ Slant machining (roughing)



❹ Cross feed (finishing)



Inserts ➡T23 Holders ➡T22

Grooving / Side-Turning

FGV Series

FGV

For Gang-style machine

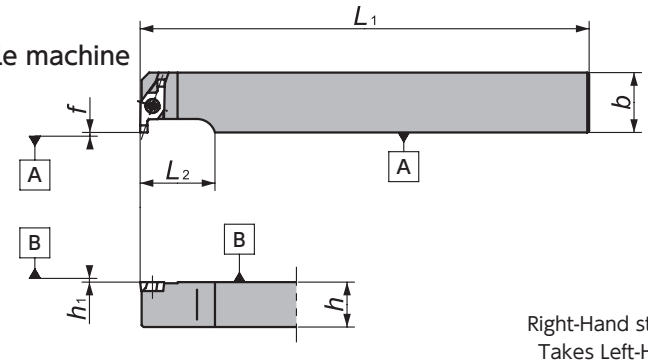
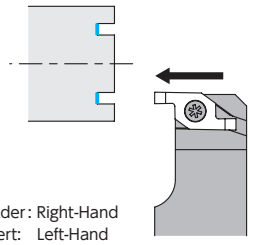


Figure-1

Right-Hand style shown
Takes Left-Hand insert



CH-FGV

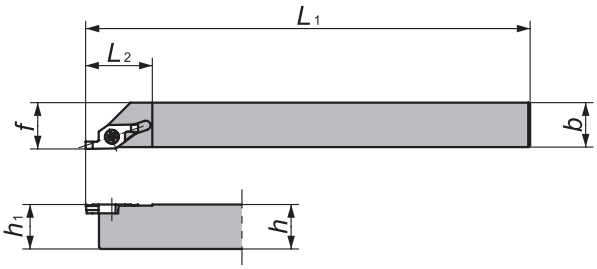
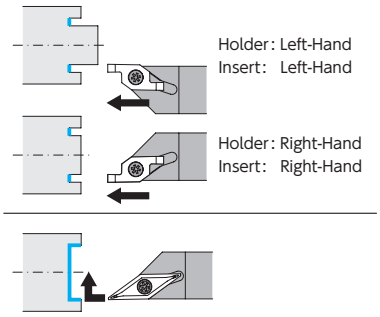


Figure-2

Right-Hand style shown



Only right hand holder is available when using FBV insert

DS-FGV

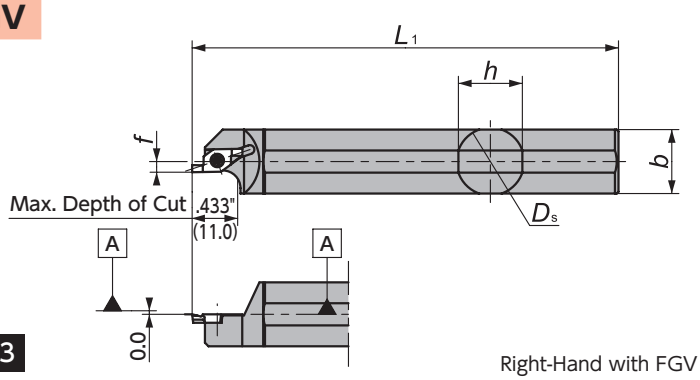
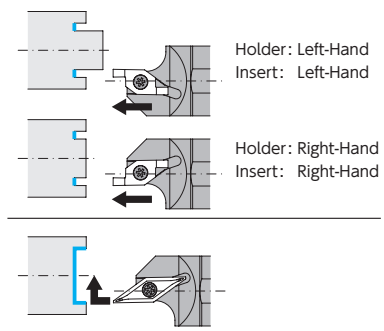


Figure-3

Right-Hand with FGV style shown



Only right hand holder is available when using FBV insert

FGV - Toolholders

FGV

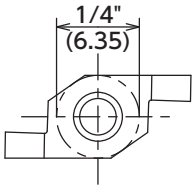
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Clamp Screw	Wrench
FGV...L	FGV R/L1016	1	○		.413	10	.630	16	0	0.0	4.724	120	0	0.0	.787	20	LRIS-2.5 × 7	CLR-15S
	FGV R/L1216	1	○		.472	12	.630	16	0	0.0	4.724	120	0	0.0	.787	20	LRIS-2.5 × 7	CLR-15S
	FGV R/L1616	1	○		.630	16	.630	16	0	0.0	4.724	120	0	0.0	.787	20	LRIS-2.5 × 7	CLR-15S
FGV FBV	CH-FGV R/L1010	2	○	○	.413	10	.394	10	.394	10	4.724	120	.413	10.5	.709	18	LRIS-2.5 × 7	CLR-15S
	CH-FGV R/L1212	2	○	○	.472	12	.472	12	.472	12	4.724	120	.492	12.5	.709	18	LRIS-2.5 × 7	CLR-15S
	CH-FGV R/L1616	2	○	○	.630	16	.630	16	.630	16	4.724	120	.650	16.5	.709	18	LRIS-2.5 × 7	CLR-15S

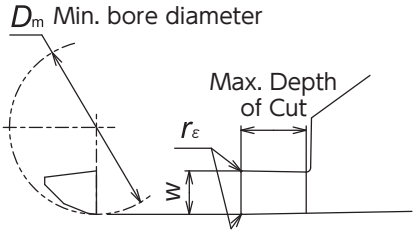
DS-FGV

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 FGV FBV	DS-FGV R/L16-012	3	○	○	.630	16.000	.591	15	.591	15	3.150	80	.118	3.0	LRIS-2.5 × 7	CLR-15S
	DS-FGV R/L19	3	○	○	3/4	19.050	.709	18	.709	18	4.724	120	.118	3.0	LRIS-2.5 × 7	CLR-15S
	DS-FGV R/L20	3	○	○	.787	20.000	.748	19	.748	19	4.724	120	.118	3.0	LRIS-2.5 × 7	CLR-15S
	DS-FGV R/L22	3	○	○	.866	22.000	.827	21	.827	21	4.724	120	.118	3.0	LRIS-2.5 × 7	CLR-15S
	DS-FGV R/L22M	1	○	○	.866	22.000	.827	21	.827	21	5.906	150	.118	3.0	LRIS-2.5 × 7	CLR-15S
	DS-FGV R/L25-MET	3	○	○	.984	25.000	.945	24	.945	24	5.906	150	.118	3.0	LRIS-2.5 × 7	CLR-15S
	DS-FGV R/L25	3	○	○	1	25.400	.965	24.5	.965	24.5	4.724	120	.118	3.0	LRIS-2.5 × 7	CLR-15S

FGV - Inserts

FGV



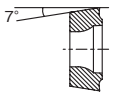


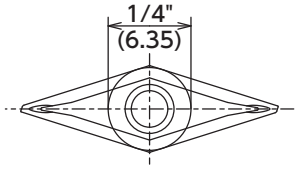
Right-Hand style shown

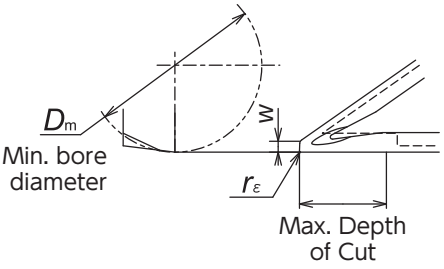
Shape	Item Number	Groove Width w (Inch)	Groove Width w (mm)	Min. Bore Diameter (Inch)	Min. Bore Diameter (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	Thickness (Inch)	Thickness (mm)	rε (Inch)	rε (mm)	Coated Carbide TM4 R	Coated Carbide TM4 L
 Right-Hand style shown	FGV100RB00D6	.039	1.0	.236	6.0	.059	1.5	3/32	2.38	.000	0.00	○	
	FGV100RB05D6	.039	1.0	.236	6.0	.059	1.5	3/32	2.38	.002	0.05	○	
	FGV150RB00D6	.059	1.5	.236	6.0	.079	2.0	3/32	2.38	.000	0.00	○	
	FGV150RB05D6	.059	1.5	.236	6.0	.079	2.0	3/32	2.38	.002	0.05	○	
	FGV200RB00D6	.079	2.0	.236	6.0	.118	3.0	3/32	2.38	.000	0.00	○	
	FGV200RB05D6	.079	2.0	.236	6.0	.118	3.0	3/32	2.38	.002	0.05	○	
 Left-Hand style shown	FGV100LB00D6	.039	1.0	.236	6.0	.059	1.5	3/32	2.38	.000	0.00		○
	FGV100LB05D6	.039	1.0	.236	6.0	.059	1.5	3/32	2.38	.002	0.05		○
	FGV150LB00D6	.059	1.5	.236	6.0	.079	2.0	3/32	2.38	.000	0.00		○
	FGV150LB05D6	.059	1.5	.236	6.0	.079	2.0	3/32	2.38	.002	0.05		○
	FGV200LB00D6	.079	2.0	.236	6.0	.118	3.0	3/32	2.38	.000	0.00		○
	FGV200LB05D6	.079	2.0	.236	6.0	.118	3.0	3/32	2.38	.002	0.05		○

FBV - Inserts

FBV







Right-Hand style shown

Shape	Item Number	Groove Width w (Inch)	Groove Width w (mm)	Min. Bore Diameter (Inch)	Min. Bore Diameter (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	Thickness (Inch)	Thickness (mm)	rε (Inch)	rε (mm)	Coated Carbide TM4 R	Coated Carbide TM4 L
 Right-Hand style shown	FBV40R05D8AM3	.020	0.5	.315	8.0	.157	4.0	.102	2.58	.002	0.05	○	
	FBV40R15D8AM3	.020	0.5	.315	8.0	.157	4.0	.102	2.58	.006	0.15	○	

Note: Only CH-FGVR and DS-FGVR can take FBV Right hand insert.

○ : 1-2 week delivery

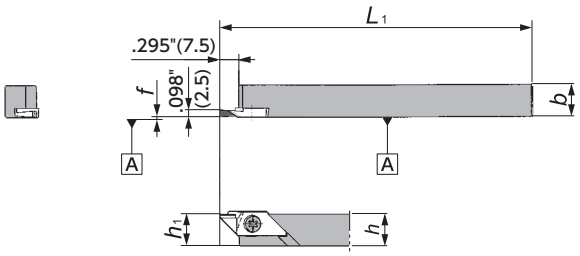
Cutting condition ➡T20

GTPA Series

Best tool for Aluminum Spool Machining

GTPA

Screw Accessible from both sides



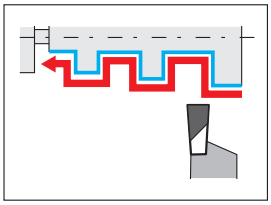


Figure-1

Right-Hand style shown

Y-GTPA

Screw Accessible from both sides

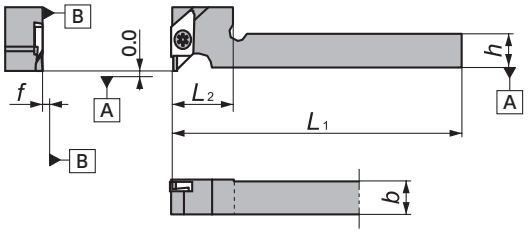


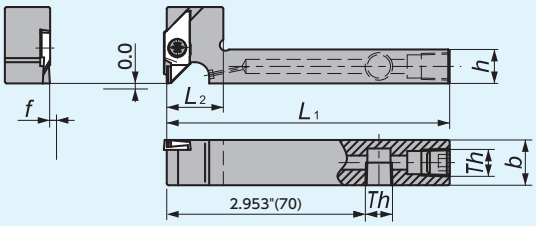
Figure-2

Right-Hand style shown

Y-GTPA-OH (Coolant through)

Screw Accessible from both sides

NEW



Th (Thread type)
Metric size holder: Rc1/8 (PT1/8)

Figure-3

Right-Hand style shown

GTPA - Toolholders

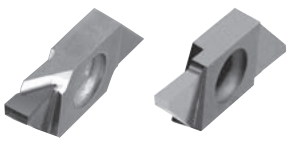
■GTPA

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	L_2 (Inch)	L_2 (mm)	Th	Clamp Screw	Wrench
 GTPA	GTPA※1010	1	○		.394	10	.394	10	.394	10	4.724	120	.004	0.1	–	–	–	LR1S-4 × 10PW	CLR-15S
	GTPA※1212	1	○		.472	12	.472	12	.472	12	4.724	120	.004	0.1	–	–	–	LR1S-4 × 10PW	CLR-15S
	GTPA※1616	1	○		.630	16	.630	16	.630	16	4.724	120	.004	0.1	–	–	–	LR1S-4 × 12PW	CLR-15S
	Y-GTPA※1216	2	○		.472	12	.630	16	–	–	4.724	120	.004	0.1	.787	20	–	LR1S-4 × 12PW	CLR-15S
	Y-GTPA※1216HS-OH 💧	3	○		.472	12	.630	16	–	–	2.756	70	.004	0.1	.787	20	Rc1/8(PT1/8)	LR1S-4 × 12PW	CLR-15S
	Y-GTPA※1216H-OH 💧	3	○		.630	16	.630	16	–	–	2.756	70	.004	0.1	.984	25	Rc1/8(PT1/8)	LR1S-4 × 12PW	CLR-15S

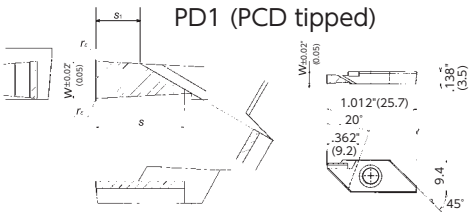
GTPA Series - Inserts

■GTPA

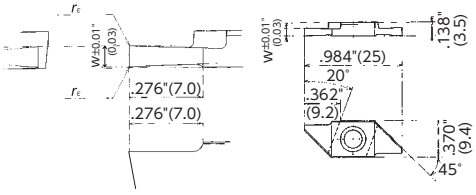
Shape



PD1 (PCD tipped)



KM1 (Carbide)



Item Number	Groove Width w (Inch)	Groove Width w (mm)	Max Depth of Cut (Inch)	Max Depth of Cut (mm)	s (Inch)	s (mm)	s_1 (Inch)	s_1 (mm)	r_ε (Inch)	r_ε (mm)	Coated Carbide KM1	PCD PD1
GTPA20FRN01-082	.079	2.0	.118	3.0	.157	4.0	.079	2.0	-.004	-0.1		○
GTPA20FRN01	.079	2.0	.197	5.0	.236	6.0	.157	4.0	-.004	-0.1		○
GTPA20FRN01	.079	2.0	.236	6.0	–	–	–	–	-.004	-0.1	○	
GTPA25FRN01-081	.098	2.5	.118	3.0	.157	4.0	.024	1.0	-.004	-0.1		○
GTPA25FRN01	.098	2.5	.197	5.0	.236	6.0	.118	3.0	-.004	-0.1		○
GTPA25FRN01	.098	2.5	.236	6.0	–	–	–	–	-.004	-0.1	○	

○ : 1-2 week delivery　　💧 : Coolant through

Cutting condition ➡T4

U

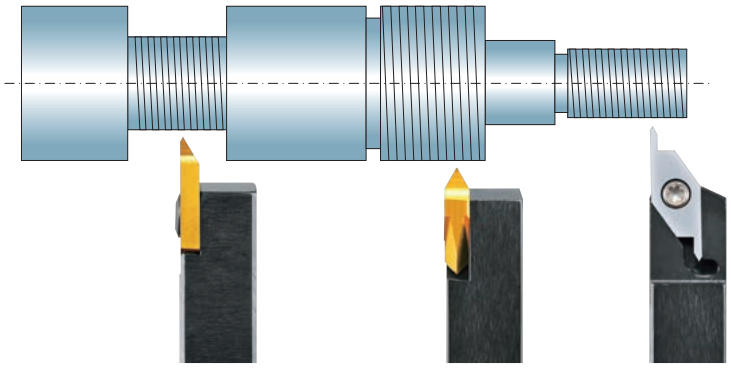


Threading

- Threading Tools ····· U2
- Recommended Cutting Conditions····· U4
- General Information ····· U5
- Tool List ····· U6

CSV series·····U6
TTPS series ·····U8
TTP series ····· U10
TTMH series ····· U14
Thread Whirling ····· U16

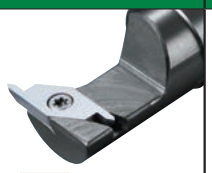
NTK Threading Tools - Product Lines

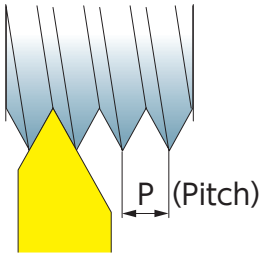


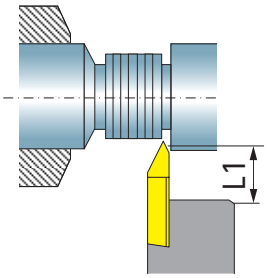
Thread Whirling System



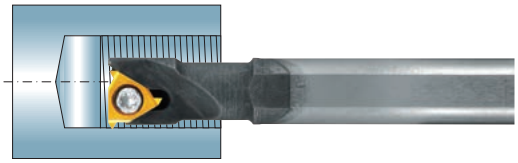
➡U16

Insert	CSVT ➡U6		TTPS ➡U8
Holder	CSV	DS-CSV	CTPS
	 ➡U6	 ➡U6	 ➡U8
Profile	60°		60°
Pitch	127 – 51 TPI (0.2 – 0.5mm)		127 - 17 TPI (0.2 - 1.5mm)
L1	.118" (3.0mm)		.197" (5.0mm)



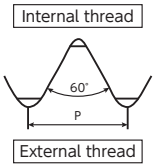
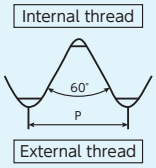
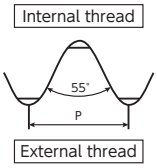
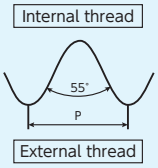
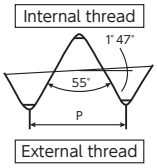
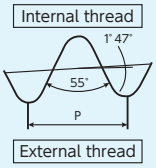
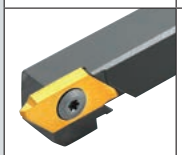


Insert	TTP ➡U11			TTMH32 ➡U14		
Holder	TTP	DS-TTP	CH-TTP	STTN	DS-STT	NTTB
	 ➡U10	 ➡U10	 ➡U10	 ➡U14	 ➡U14	 ➡U14
Profile	60° / 55°			60°		
Pitch	127 – 13 TPI (0.2 – 2.0mm)			31 – 9 TPI (0.8 – 3.0mm)		
L1	.217" (5.5mm)			.157" (4.0mm)	.118" (3.0mm)	.157" (4.0mm)



Insert	SBT ➡V20	TMN ➡V22
Holder	NBH	TGC / HN
	 ➡V14	 ➡V22
Profile	60°	60°
Pitch	51 - 15 TPI (0.5 - 1.75mm)	63 - 34 TPI (0.4 - 0.75mm)
L1	.024" - .071" (0.6 - 1.8mm)	.028" - .039" (0.7 - 1.0mm)

Tools and Thread Standards

Thread Type		ISO Metric	American Unified	Whitworth	Parallel Pipe	American Tapered Pipe	Tapered Pipe
		M	UNC UNE	W	G(PF)	NPT	R(PT)
							
Profile		60°	60°	55°	55°	60°	55°
Tool \ Pitch		mm	TPI	TPI	TPI	TPI	TPI
External Thread	 **CSVT**	0.2 - 0.5	80 - 56	—	—	—	—
	 **TTPS**	0.2 - 1.5	80 - 18	—	—	(18)	—
	 **TTP**	0.2 - 2.0	80 - 13	40/24/20/18/16	(28/19)	(18/14)	(28/19)
	 **TTMH**	0.8 - 3.0	24 - 9	—	—	18/14/11.5	—
Internal Thread	 **SBT**	0.5 - 1.75	36 - 16	—	—	(18)	—
	 **TGC/HN**	0.4 - 0.75	56 - 36	—	—	—	—

(Please check Radius [Flat] shape over inserts)

Recommended Cutting Conditions

Threading

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	VM1			VM1 / ZM3		QM3	
	2nd choice	ZM3			QM3		VM1 / ZM3	
Cutting Speed (SFM)		75 125 225	100 200 275		130 230 330	150 300 600	150 300 500	

*Unless your machine is equipped with high speed threading program, please set the feed rate to 80 IPM or lower to prevent making incomplete threads

Recommended Depth of Cut (DOC) for Each Pass

TTP, TTPS, TTMH, TTMA, CSVT

Thread Type		Pitch (mm)	Total DOC (mm)	Number of pass	1	2	3	4	5	6	7	8	9	10
Metric (60°)	Male thread	0.20	0.20	4	0.08	0.06	0.04	0.02						
		0.25	0.24	4	0.10	0.08	0.04	0.02						
		0.30	0.28	5	0.08	0.07	0.07	0.04	0.02					
		0.35	0.32	5	0.10	0.09	0.07	0.04	0.02					
		0.40	0.35	5	0.12	0.10	0.07	0.04	0.02					
		0.45	0.39	5	0.16	0.10	0.07	0.04	0.02					
		0.50	0.33	5	0.10	0.10	0.07	0.04	0.02					
		0.60	0.40	6	0.10	0.10	0.08	0.06	0.04	0.02				
		0.70	0.48	6	0.10	0.10	0.10	0.10	0.06	0.02				
		0.75	0.52	7	0.10	0.10	0.10	0.08	0.07	0.05	0.02			
		0.80	0.56	7	0.10	0.10	0.10	0.10	0.08	0.06	0.02			
		1.00	0.71	8	0.15	0.15	0.12	0.10	0.08	0.06	0.03	0.02		
		1.25	0.90	9	0.20	0.18	0.13	0.10	0.10	0.07	0.05	0.05	0.02	
		1.50	1.09	10	0.22	0.20	0.15	0.12	0.10	0.10	0.08	0.05	0.05	0.02

Thread Type		Pitch (TPI)	Total DOC (inch)	Number of pass	1	2	3	4	5	6	7	8	9	10
American Unified	Male thread	80	.008	4	.003	.003	.002	.001						
		72	.009	4	.004	.003	.002	.001						
		64	.011	5	.003	.003	.002	.002	.001					
		56	.012	5	.004	.003	.002	.002	.001					
		48	.015	5	.005	.004	.003	.002	.001					
		44	.016	6	.005	.004	.003	.002	.002	.001				
		40	.018	6	.005	.004	.004	.003	.002	.001				
		36	.020	6	.005	.005	.004	.003	.002	.001				
		32	.022	7	.005	.005	.004	.003	.002	.002	.001			
		28	.025	7	.006	.005	.004	.004	.003	.002	.001			
		24	.030	8	.007	.006	.005	.004	.003	.002	.002	.001		
		20	.033	9	.007	.006	.005	.004	.003	.003	.002	.002	.001	
		18	.038	9	.008	.007	.006	.005	.004	.003	.002	.002	.001	
		16	.036	9	.007	.007	.006	.005	.004	.003	.002	.002	.001	
		14	.043	10	.008	.008	.007	.006	.005	.003	.002	.002	.002	.001

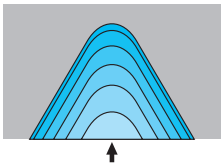
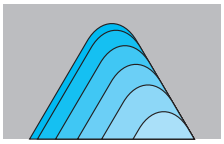
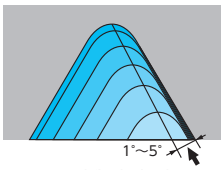
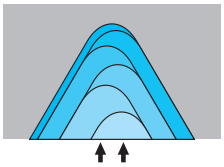
Cutting Conditions for STICK DUO

For 600 - 1500 RPM Recommended Depth of Cut (DOC) for Each Pass

Metric Thread		Number of Pass																				
Pitch (mm)	Total DOC (mm)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
0.5	0.3	0.06	0.05	0.05	0.04	0.04	0.03	0.02	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—
0.7	0.43	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.03	0.02	0.01	—	—	—	—	—	—	—	—	—	—	—
0.75	0.46	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.02	0.01	—	—	—	—	—	—	—	—	—	—
0.8	0.49	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.02	0.01	—	—	—	—	—	—	—	—	—
1.0	0.62	0.07	0.07	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.02	0.01	—	—	—	—	—	—	—
1.25	0.76	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.04	0.03	0.03	0.02	0.01	—	—	—	—	—	—
1.5	0.92	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.01	—	—	—
1.75	1.09	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.01

UNF Thread		Number of Pass																		
Pitch (TPI)	Total DOC (inch)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
36	.017	.002	.002	.002	.002	.002	.002	.001	.001	.0008	.0004	—	—	—	—	—	—	—	—	—
32	.019	.002	.002	.002	.002	.002	.001	.001	.001	.001	.0008	.0004	—	—	—	—	—	—	—	—
28	.022	.003	.002	.002	.002	.002	.002	.001	.001	.001	.001	.001	.0008	.0004	—	—	—	—	—	—
24	.026	.003	.002	.002	.002	.002	.002	.002	.002	.001	.001	.001	.001	.0008	.0004	—	—	—	—	—
20	.031	.003	.003	.003	.003	.002	.002	.002	.002	.002	.002	.001	.001	.001	.001	.0008	.0004	—	—	—
18	.034	.003	.003	.003	.003	.003	.002	.002	.002	.002	.002	.002	.002	.001	.001	.001	.0008	.0004	—	—
16	.039	.003	.003	.003	.003	.003	.003	.003	.002	.002	.002	.002	.002	.002	.001	.001	.001	.001	.0008	.0004

Infeed Threading Method

	Features	
	Advantage	Disadvantage
 Radial Infeed	●Most popular and easiest method ●Easy to change parameter ●Uniform wear on both sides of insert	●Chip evacuation ●Vibration due to higher cutting force ●Ineffective for large pitch threading
 Flank Infeed	●2nd most popular and easy method ●Effective for larger pitch and gummy material thanks to lower cutting force ●Excellent chip evacuation	●Larger flank wear on right side of the insert ●Difficult to change cutting depth per cut
 Modified Flank Infeed	●Reduce flank wear on right side ●Effective for larger pitch and gummy material thanks to lower cutting force ●Excellent chip evacuation	●Difficult to program ●Difficult to change cutting depth per cut
 Incremental Infeed	●Uniform flank wear ●Effective for larger pitch and gummy material thanks to lower cutting force	●Difficult to program ●Difficult to change cutting depth per cut ●Chip evacuation

CSV Series

Best for up to .200" diameter material

CSV-NC For Gang-style machine

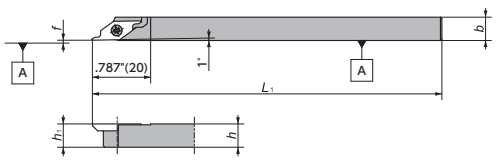


Figure-1

Right-Hand style shown

CSV For Cam-style machine

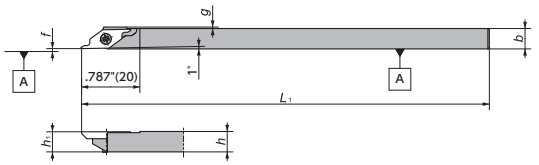


Figure-2

Right-Hand style shown

DS-CSVL

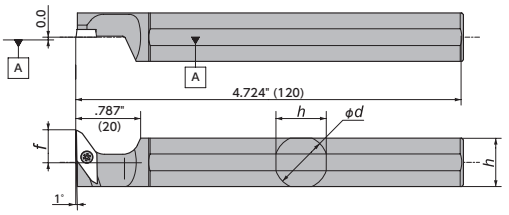


Figure-3

Left-Hand style shown
Takes Right-hand insert

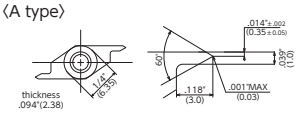
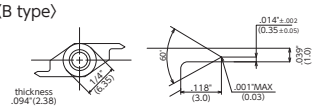
■CSV R/L / CSV R/L-NC

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	g (Inch)	g (mm)	Clamp Screw	Wrench
 CSV..11..	CSV R/L06-IN-NC	1	●	●	3/8		3/8		3/8		4.724	120	.004	0.1	–	–	LRIS-2.5 × 7	CLR-15S
	CSV R/L08-IN-NC	1	●	●	1/2		1/2		1/2		4.724	120	.004	0.1	–	–	LRIS-2.5 × 7	CLR-15S
	CSV R/L08NC	1	○	○	.315	8	.315	8	.315	8	4.724	120	.004	0.1	–	–	LRIS-2.5 × 7	CLR-15S
	CSV R/L08NC-F	1	○		.315	8	.315	8	.315	8	4.724	120	0–.004	0.0–0.1	–	–	LRIS-2.5 × 7	CLR-15S
	CSV R/L10GXNC	1	○		.394	10	.394	10	.394	10	3.346	85	.004	0.1	–	–	LRIS-2.5 × 7	CLR-15S
	CSV R/L10NC	1	○	○	.394	10	.394	10	.394	10	4.724	120	.004	0.1	–	–	LRIS-2.5 × 7	CLR-15S
	CSV R/L12NC	1	○	○	.472	12	.472	12	.472	12	4.724	120	.004	0.1	–	–	LRIS-2.5 × 7	CLR-15S
	CSV R/L07GX	2	○		.275	7	.275	7	.275	7	3.346	85	.004	0.1	.020	0.5	LRIS-2.5 × 7	CLR-15S
	CSV R/L07	2	○	●	.275	7	.275	7	.275	7	5.512	140	.004	0.1	.020	0.5	LRIS-2.5 × 7	CLR-15S
	CSV R/L08GX	2	○		.315	8	.315	8	.315	8	3.346	85	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSV R/L08	2	●	●	.315	8	.315	8	.315	8	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSV R/L095	2	○		.374	9.5	.374	9.5	.374	9.5	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSV R/L10	2	●	○	.394	10	.394	10	.394	10	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSV R/L12GX	2	○		.472	12	.472	12	.472	12	3.346	85	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CSV R/L12	2	●		.472	12	.472	12	.472	12	5.512	140	.004	0.1	0.0	0.0	LRIS-2.5 × 7	CLR-15S

■DS-CSVL (Takes right-hand insert)

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 CSV..11FR..	DS-CSVL15	3		●	5/8	15.875	.591	15	.591	15	4.724	120	.394	10	LRIS-2.5 × 7	CLR-15S

■CSVT - Threading Mirror finish

Shape	Item Number	Chip-breaker	r_ε (TPI)	r_ε (mm)	Pitch (TPI)	Pitch (mm)	Coated Carbide VM1 R	Coated Carbide VM1 L
〈A type〉  Right-Hand style shown	CSVT11FR/LP60-035A (M)	No	–R.001	R0.03 MAX	127 - 51	0.2 - 0.5	●	●
〈B type〉  Right-Hand style shown	CSVT11FR/LP60-035B (M)	No	–R.001	R0.03 MAX	127 - 51	0.2 - 0.5	●	●

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

CSVT Style



Unified Standard (UN, UNF, UNC) Threads

	Thread Type		Pitch			Applicable Inserts
	#1	#2	(TPI)	(inch)	(mm)	
Coarse		No.1-64 UNC	64	.016	0.3969	CSVT11F1/4P60-035A CSVT11F1/4P60-035B
	No.2-56 UNC		56	.018	0.4536	
Fine	No.0-80 UNF		80	.013	0.3175	
		No.1-72 UNF	72	.014	0.3528	
	No.2-64 UNF		64	.016	0.3969	
		No.3-56 UNF	56	.018	0.4536	

Metric (M) Threads / Fine and Coarse

	Pitch (mm)				
	0.50	0.40	0.35	0.25	0.20
M1				Coarse	Fine
M2		Coarse		Fine	
M3	Coarse		Fine		
M4	Fine				
M5					

Recommended Depth of Cut (DOC) for Each Pass (mm)

TTP, TTPS, TTMH, TTMA, CSVT

Thread Type		Pitch (mm)	Total DOC (mm)	Number of pass	1	2	3	4	5	6	7	8	9	10
Metric (60°)	Male thread	0.20	0.20	4	0.08	0.06	0.04	0.02						
		0.25	0.24	4	0.10	0.08	0.04	0.02						
		0.30	0.28	5	0.08	0.07	0.07	0.04	0.02					
		0.35	0.32	5	0.10	0.09	0.07	0.04	0.02					
		0.40	0.35	5	0.12	0.10	0.07	0.04	0.02					
		0.45	0.39	5	0.16	0.10	0.07	0.04	0.02					
		0.50	0.33	5	0.10	0.10	0.07	0.04	0.02					
		0.60	0.40	6	0.10	0.10	0.08	0.06	0.04	0.02				
		0.70	0.48	6	0.10	0.10	0.10	0.10	0.06	0.02				
		0.75	0.52	7	0.10	0.10	0.10	0.08	0.07	0.05	0.02			
		0.80	0.56	7	0.10	0.10	0.10	0.10	0.08	0.06	0.02			
		1.00	0.71	8	0.15	0.15	0.12	0.10	0.08	0.06	0.03	0.02		
		1.25	0.90	9	0.20	0.18	0.13	0.10	0.10	0.07	0.05	0.05	0.02	
		1.50	1.09	10	0.22	0.20	0.15	0.12	0.10	0.10	0.08	0.05	0.05	0.02

● : Stock ○ : 1-2 week delivery Ⓜ : Mirror finish CSV series ➡O27 Cutting condition ➡U4

CTPS Series

CTPS

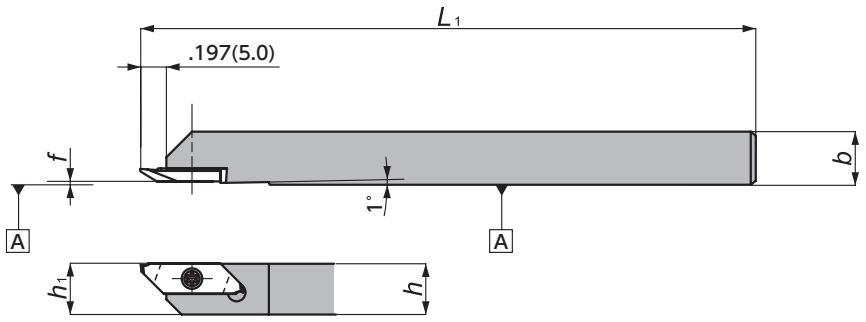


Figure-1

Right-Hand style shown

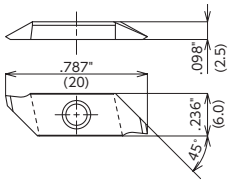
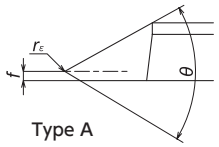
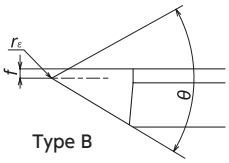
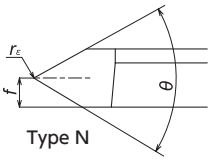
CTPS Series - Toolholders

■CTPS (Takes right-hand inserts)

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 TTPS	**CTPSR06-IN**	1	●		3/8		3/8		3/8		4.724	120	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CTPSR08-IN	1	●		1/2		1/2		1/2		4.724	120	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CTPSR10	1	○		.394	10	.394	10	.394	10	4.724	120	0.0	0.0	LRIS-2.5 × 7	CLR-15S
	CTPSR12	1	○		.472	12	.472	12	.472	12	4.724	120	0.0	0.0	LRIS-2.5 × 7	CLR-15S

CTPS Series - Inserts

■TTPS - Threading

Shape	Item Number	Type	θ	f (Inch)	f (mm)	r_ε (Inch)	r_ε (mm)	Pitch (TPI)	Pitch (mm)	Coated Carbide VM1	Coated Carbide ZM3
	**TTPS60FR4A**	A	60°	.016	0.4	.002 MAX Flat	(0.05) MAX Flat	**127 - 34**	**0.2 - 0.75**	○	○
 Type A	**TTPS60FR4B**	B	60°	.016	0.4	.002 MAX Flat	(0.05) MAX Flat	**127 - 34**	**0.2 - 0.75**	○	○
 Type B	**TTPS60FR8A**	A	60°	.031	0.8	R.002	(0.05)	**63 - 21**	**0.4 - 1.25**	○	○
 Type N	**TTPS60FR8B**	B	60°	.031	0.8	R.002	(0.05)	**63 - 21**	**0.4 - 1.25**	○	○
 Right-Hand style shown	**TTPS60FR-N**	N	60°	.049	1.25	R.004	(0.1)	**25 - 17**	**1.0 - 1.5**	○	○

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

TTPS Style

Unified Standard (UN, UNF, UNC) Threads

	Thread Type		Pitch		Applicable Inserts
	#1	#2	(TPI)	(mm)	
Coarse		No.1-64 UNC	64	0.397	**TTPS60FR4A (B)**
	No.2-56 UNC		56	0.454	**TTPS60FR4A (B)** **TTPS60FR8A (B)**
		No.3-48 UNC	48	0.529	
	No.4-40 UNC		40	0.635	
	No.5-40 UNC		40	0.635	
	No.6-32 UNC		32	0.794	
	No.8-32 UNC		32	0.794	
	No.10-24 UNC		24	1.058	**TTPS60FR4A (B)** **TTPS60FR8A (B)** **TTPS60FR-N**
		No.12-24 UNC	24	1.058	
	1/4-20 UNC		20	1.270	
	5/16-18 UNC		18	1.411	**TTPS60FR-N**
Fine	No.0-80 UNF		80	0.318	**TTPS60FR4A (B)**
		No.1-72 UNF	72	0.353	
	No.2-64 UNF		64	0.397	
		No.3-56 UNF	56	0.454	**TTPS60FR4A (B)** **TTPS60FR8A (B)**
	No.4-48 UNF		48	0.529	
	No.5-44 UNF		44	0.577	
	No.6-40 UNF		40	0.635	
	No.8-36 UNF		36	0.706	
	No.10-32 UNF		32	0.794	
		No.12-28 UNF	28	0.907	**TTPS60FR8A (B)**
	1/4-28 UNF		28	0.907	
	5/16-24 UNF		24	1.058	**TTPS60FR8A (B)** **TTPS60FR-N**
	3/8-24 UNF		24	1.058	
	7/16-20 UNF		20	1.270	
	1/2-20 UNF		20	1.270	
	9/16-18 UNF		18	1.411	**TTPS60FR-N**
	5/8-18 UNF		18	1.411	

Metric (M) Threads / Fine and Coarse

Thread Type			Pitch (mm)										
#1	#2	#3	1.50	1.25	1.00	0.80	0.75	0.70	0.50	0.40	0.35	0.25	0.20
M1												Coarse	Fine
M2										Coarse		Fine	
M3									Coarse		Fine		
M4								Coarse	Fine				
M5						Coarse							
M6					Coarse		Fine						
	M7												
M8				Coarse	Fine								
		M9											
M10			Coarse	Fine									
		M11											
M12			Fine	Fine									
	M14												
		M15			Fine								
M16													
		M17											
	M18												
M20													
	M22												
M24													
		M25											
		M26											
	M27				Fine								
		M28											

Covered Thread Pitch Range

Inserts	Pitch	
	(TPI)	(mm)
TTPS60FR4A(B)	127 - 34	0.2 - 0.75
TTPS60FR8A(B)	63 - 21	0.4 - 1.25
TTPS60FR-N	25 - 17	1.0 - 1.5

● : Stock ○ : 1-2 week delivery

CTPS series ➡O31 Cutting condition ➡U4

TTP Series

TTP

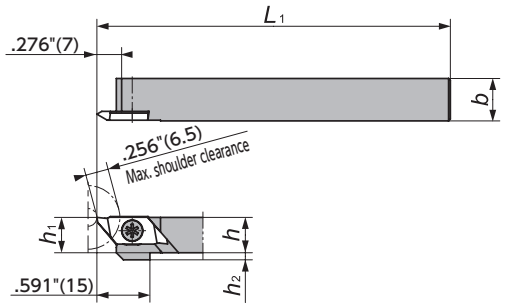
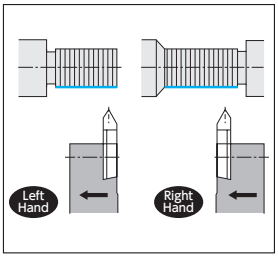


Figure-1



Right-Hand style shown

CH-TTP

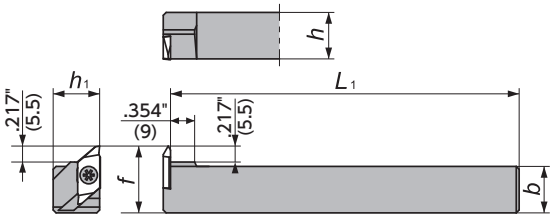
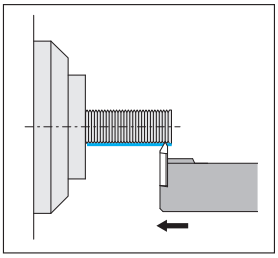


Figure-2



Left-Hand style shown
Takes Right-hand insert

DS-TTP

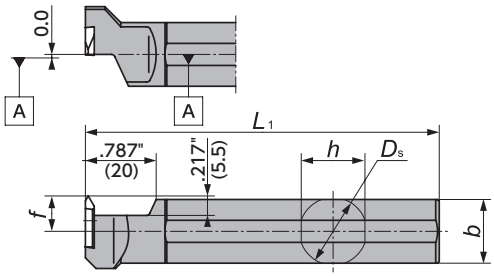
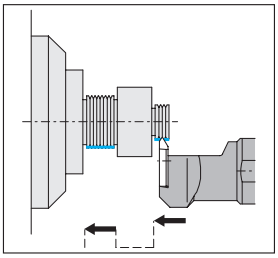


Figure-3



Left-Hand style shown
Takes Right-hand insert

■TTP R/L / CH-TTPL

Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h1 (Inch)	h1 (mm)	L1 (Inch)	L1 (mm)	f (Inch)	f (mm)	h2 (Inch)	h2 (mm)	Clamp Screw	Wrench
 TTP.. TTP..FR	TTPR/L06-IN	1	●	●	3/8		3/8		3/8		4.724	120	–	–	.079	2	LRIS-4 × 10PW	CLR-15S
	TTPR/L08-IN	1	●	●	1/2		1/2		1/2		4.724	120	–	–	0	0	LRIS-4 × 10PW	CLR-15S
	TTPR/L10-IN	1	●	●	5/8		5/8		5/8		4.724	120	–	–	0	0	LRIS-4 × 12PW	CLR-15S
	TTPR/L08	1	○	○	.315	8	.394	10	.315	8	4.724	120	–	–	.157	4	LRIS-4 × 12PW	CLR-15S
	TTPR/L10	1	○	○	.394	10	.394	10	.394	10	4.724	120	–	–	.079	2	LRIS-4 × 12PW	CLR-15S
	TTPR/L12GX	1	○	○	.472	12	.472	12	.472	12	3.346	85	–	–	0	0	LRIS-4 × 12PW	CLR-15S
	TTPR/L12	1	●	●	.472	12	.472	12	.472	12	4.724	120	–	–	0	0	LRIS-2.5 × 7	CLR-15S
	TTPR/L16H	1	○	○	.630	16	.630	16	.630	16	3.937	100	–	–	0	0	LRIS-2.5 × 7	CLR-15S
	TTPR/L16	1	○	○	.630	16	.630	16	.630	16	4.724	120	–	–	0	0	LRIS-2.5 × 7	CLR-15S
	TTPR/L20F	1	○	○	.787	20	.787	20	.787	20	3.150	80	–	–	0	0	LRIS-4 × 10	LLR-25S-20 × 65
	CH-TTPL16	2		○	.630	16	.630	16	.630	16	4.724	120	.906	23	–	–	LRIS-4 × 10	LLR-25S-20 × 65
	CH-TTPL20	2		○	.787	20	.787	20	.787	20	4.724	120	1.063	27	–	–	LRIS-4 × 10	LLR-25S-20 × 65

■DS-TTP

Gage Insert	Item Number	Figure	Stock R	Stock L	Ds (Inch)	Ds (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L1 (Inch)	L1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 TTP..	DS-TTPR/L16F	3		○	.630	16.000	.591	15	.591	15	3.150	80	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-TTPR/L19	3		●	3/4	19.050	.709	18	.709	18	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-TTPR/L20	3		●	.787	20.000	.748	19	.748	19	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-TTPR/L22	3		●	.866	22.000	.827	21	.827	21	4.724	120	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-TTPR/L25-MET	3		○*	.984	25.000	.945	24	.945	24	5.906	150	.118	3.0	LRIS-4 × 10	LLR-25S-20 × 65
	DS-TTPR/L25	3		●	1	25.400	.945	24	.945	24	5.906	150	.394	10.0	LRIS-4 × 10	LLR-25S-20 × 65

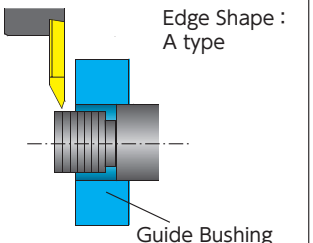
*To be released in August 2015.

TTP Series - Inserts

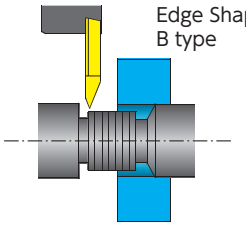
TTP - Threading

	Shape	Item Number	θ	f (Inch)	f (mm)	r_ε (Inch)	r_ε (mm)	Pitch (TPI)	Pitch (mm)	Coated Carbide QM3 R	Coated Carbide QM3 L	Coated Carbide ZM3 R	Coated Carbide ZM3 L	Carbide KM1 R	Carbide KM1 L
Right-Hand	A type	TTP60FR2A	60°	.008	0.2	(.002) MAX Flat	(0.05) MAX Flat	127 - 63	0.2 - 0.4			○			
		TTP60FR4A	60°	.016	0.4	(.002) MAX Flat	(0.05) MAX Flat	127 - 34	0.2 - 0.75	●		●			
		TTP60FR4AS Ⓜ	60°	.016	0.4	(.002) MAX Flat	(0.05) MAX Flat	127 - 34	0.2 - 0.75					○	
		TTP60FR8A	60°	.031	0.8	(R.002)	(R0.05)	63 - 21	0.4 - 1.25	●		●			
		TTP60FR8AS Ⓜ	60°	.031	0.8	(R.002)	(R0.05)	63 - 21	0.4 - 1.25					○	
		TTP55FR8A	55°	.031	0.8	(R.002)	(R0.05)	48 - 16	–			●			
	B type	TTP60FR2B	60°	.008	0.2	(.002) MAX Flat	(0.05) MAX Flat	127 - 63	0.2 - 0.4			○			
		TTP60FR4B	60°	.016	0.4	(.002) MAX Flat	(0.05) MAX Flat	127 - 34	0.2 - 0.75	●		●			
		TTP60FR4BS Ⓜ	60°	.016	0.4	(.002) MAX Flat	(0.05) MAX Flat	127 - 34	0.2 - 0.75					○	
		TTP60FR8B	60°	.031	0.8	(R.002)	(R0.05)	63 - 21	0.4 - 1.25	●		●			
		TTP60FR8BS Ⓜ	60°	.031	0.8	(R.002)	(R0.05)	63 - 21	0.4 - 1.25					○	
		TTP55FR8B	55°	.031	0.8	(R.002)	(R0.05)	48 - 16	–			●			
	N type	TTP60FR-N	60°	.049	1.25	(R.004)	(R0.1)	25 - 17	1.0 - 1.5	●		●			
		TTP60FR-NS Ⓜ	60°	.049	1.25	(R.004)	(R0.1)	25 - 17	1.0 - 1.5					○	
		TTP60FR-N02	60°	.049	1.25	(R.008)	(R0.2)	16 - 13	1.5 - 2.0	●		○			
Left-Hand	A type	TTP60FL2A	60°	.008	0.2	(.002) MAX Flat	(0.05) MAX Flat	127 - 63	0.2 - 0.4				○		
		TTP60FL4A	60°	.016	0.4	(.002) MAX Flat	(0.05) MAX Flat	127 - 34	0.2 - 0.75		●		●		
		TTP60FL4AS Ⓜ	60°	.016	0.4	(.002) MAX Flat	(0.05) MAX Flat	127 - 34	0.2 - 0.75						○
		TTP60FL8A	60°	.031	0.8	(R.002)	(R0.05)	63 - 21	0.4 - 1.25		●		●		
		TTP60FL8AS Ⓜ	60°	.031	0.8	(R.002)	(R0.05)	63 - 21	0.4 - 1.25						○
		TTP55FL8A	55°	.031	0.8	(R.002)	(R0.05)	48 - 16	–				●		
	B type	TTP60FL2B	60°	.008	0.2	(.002) MAX Flat	(0.05) MAX Flat	127 - 63	0.2 - 0.4				○		
		TTP60FL4B	60°	.016	0.4	(.002) MAX Flat	(0.05) MAX Flat	127 - 34	0.2 - 0.75		●		●		
		TTP60FL4BS Ⓜ	60°	.016	0.4	(.002) MAX Flat	(0.05) MAX Flat	127 - 34	0.2 - 0.75						○
		TTP60FL8B	60°	.031	0.8	(R.002)	(R0.05)	63 - 21	0.4 - 1.25		○		●		
		TTP60FL8BS Ⓜ	60°	.031	0.8	(R.002)	(R0.05)	63 - 21	0.4 - 1.25						○
		TTP55FL8B	55°	.031	0.8	(R.002)	(R0.05)	48 - 16	–				●		
	N type	TTP60FL-N	60°	.049	1.25	(R.004)	(R0.1)	25 - 17	1.0 - 1.5		●		●		
		TTP60FL-NS Ⓜ	60°	.049	1.25	(R.004)	(R0.1)	25 - 17	1.0 - 1.5						○
		TTP60FL-N02	60°	.049	1.25	(R.008)	(R0.2)	16 - 13	1.5 - 2.0		●		○		

Right Hand Toolholders

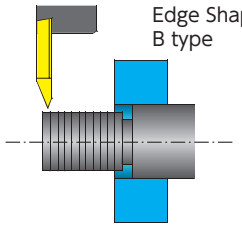


Toolholder	TTPR
Insert	TTP..FR..A

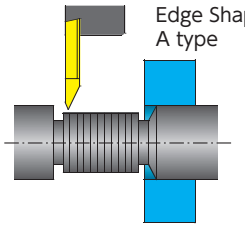


Toolholder	TTPR
Insert	TTP..FR..B

Left Hand Toolholders



Toolholder	TTPL
Insert	TTP..FL..B



Toolholder	TTPL
Insert	TTP..FL..A

● : Stock ○ : 1-2 week delivery Ⓜ : Mirror finish

Cutting condition ➡U4

TTP Style



Unified Standard (UN, UNF, UNC) Threads

	Thread Type		Pitch		Applicable Inserts
			(TPI)	(mm)	
Coarse (UNC)		No.1-64 UNC	64	0.3969	**TTP60FR¼2A(B) TTP60FR¼4A, AS(B, BS)**
	No.2-56 UNC		56	0.4536	**TTP60FR¼4A, AS(B, BS) TTP60FR¼8A, AS(B, BS)**
		No.3-48 UNC	48	0.5292	
	No.4-40 UNC		40	0.6350	
	No.5-40 UNC		40	0.6350	
	No.6-32 UNC		32	0.7938	**TTP60FR¼8A, AS(B, BS)**
	No.8-32 UNC		32	0.7938	
	No.10-24 UNC		24	1.0583	**TTP60FR¼8A, AS(B, BS) TTP60FR¼-N(S)**
		No.12-24 UNC	24	1.0583	
	1/4-20 UNC		20	1.2700	
	5/16-18 UNC		18	1.4111	**TTP60FR¼-N(S)**
	3/8-16 UNC		16	1.5875	**TTP60FR¼-N02**
	7/16-14 UNC		14	1.8143	
	1/2-13 UNC		13	1.9538	
Fine (UNC)	No.0-80 UNF		80	0.3175	**TTP60FR¼2A(B) TTP60FR¼4A, AS(B, BS)**
		No.1-72 UNF	72	0.3528	
	No.2-64 UNF		64	0.3969	
		No.3-56 UNF	56	0.4536	**TTP60FR¼4A, AS(B, BS) TTP60FR¼8A, AS(B, BS)**
	No.4-48 UNF		48	0.5292	
	No.5-44 UNF		44	0.5773	
	No.6-40 UNF		40	0.6350	
	No.8-36 UNF		36	0.7056	
	No.10-32 UNF		32	0.7938	**TTP60FR¼8A, AS(B, BS)**
		No.12-28 UNF	28	0.9071	
	1/4-28 UNF		28	0.9071	
	5/16-24 UNF		24	1.0583	**TTP60FR¼8A, AS(B, BS) TTP60FR¼-N(S)**
	3/8-24 UNF		24	1.0583	
	7/16-20 UNF		20	1.2700	**TTP60FR¼-N(S)**
	1/2-20 UNF		20	1.2700	
	9/16-18 UNF		18	1.4111	
	5/8-18 UNF		18	1.4111	
	3/4-16 UNF		16	1.5875	**TTP60FR¼-N02**
	7/8-14 UNF		14	1.8143	

Metric (M) Threads / Fine and Coarse

Thread Type			Pitch (mm)										
			2.00	1.50	1.25	1.00	0.80	0.75	0.70	0.50	0.40	0.35	0.25	0.20
M1													Coarse	Fine
M2											Coarse		Fine	
M3										Coarse		Fine		
M4									Coarse	Fine				
M5							Coarse							
M6						Coarse		Fine						
	M7													
M8					Coarse	Fine								
		M9												
M10				Coarse	Fine									
		M11												
M12				Fine										
	M14		Coarse											
		M15												
M16			Coarse											
		M17												
	M18		Fine	Fine										
M20														
	M22													
M24														
		M25												
		M26												
	M27		Fine			Fine								
		M28												
M30														
		M32												

Covered Thread Pitch Range

Inserts	Pitch	
	(TPI)	(mm)
TTP60FR/L2A(B)	127 - 63	0.2 - 0.4
TTP60FR/L4A,AS(B,BS)	127 - 34	0.2 - 0.75
TTP60FR/L8A,AS(B,BS)	63 - 21	0.4 - 1.25
TTP60FR/L-N(S)	25 - 17	1.0 - 1.5
TTP60FR/L-N02	16 - 13	1.5 - 2.0

TTP60FR/L-N02 can be used up to M150 when the pitch is 2.0 mm

Whitworth

Applicable Insert	Thread Type	Pitch	
		(TPI)	(mm)
TTP55FR/L8A (B)	W 1/8	40	0.63
	W 3/16	24	1.06
	W 1/4	20	1.27
	W 5/16	18	1.41
	W 3/8	16	1.54

STTN Series

STTN

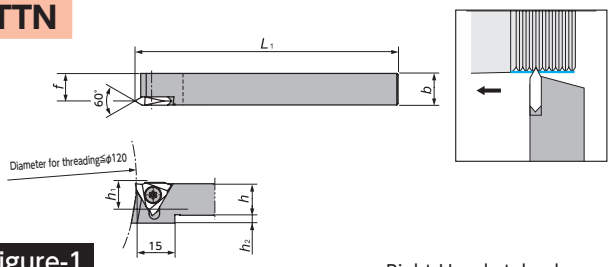


Figure-1

Right-Hand style shown

NTTB

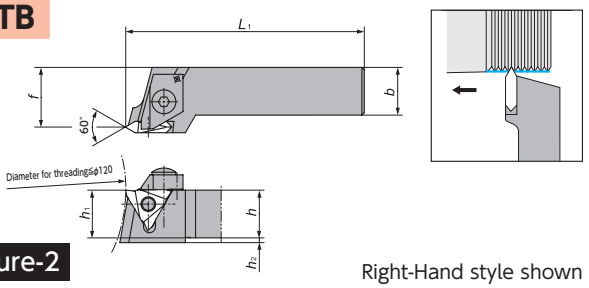


Figure-2

Right-Hand style shown

DS-STT

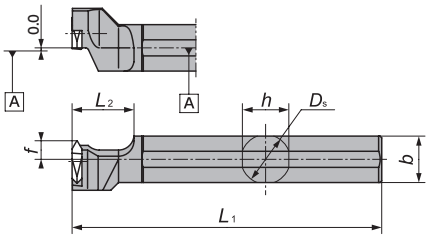
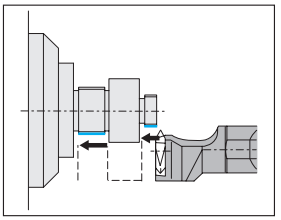


Figure-3



Left-Hand style shown
Takes Right-hand insert

■STTNR/L / NTTBR/L

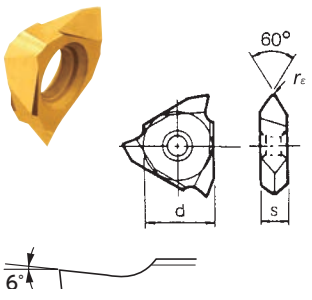
Gage Insert	Item Number	Figure	Stock R	Stock L	h (Inch)	h (mm)	b (Inch)	b (mm)	h_1 (Inch)	h_1 (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	h_2 (Inch)	h_2 (mm)	Clamp Screw	Wrench
 TTMH3260	**STTNR101032**	1	○		.394	10	.394	10	.394	10	3.150	80	.335	8.5	.197	5.0	LR-S-4 × 9	RLR-20S
	STTNR121232	1	○		.472	12	.472	12	.472	12	3.150	80	.413	10.5	.197	5.0	LR-S-4 × 9	RLR-20S
	STTNR121232-K	1	○		.472	12	.472	12	.472	12	4.912	125	.413	10.5	.197	5.0	LR-S-4 × 9	RLR-20S
	NTTBR161632	2	○		.630	16	.630	16	.630	16	4.724	120	.787	20.0	.157	4.0	–	LW-2.5
	NTTBR202032	2	○		.787	20	.787	20	.787	20	5.512	140	.984	25.0	0.0	0.0	–	LW-2.5

■DS-STTR/L

Gage Insert	Item Number	Figure	Stock R	Stock L	D_s (Inch)	D_s (mm)	h (Inch)	h (mm)	b (Inch)	b (mm)	L_1 (Inch)	L_1 (mm)	f (Inch)	f (mm)	Clamp Screw	Wrench
 TTMH3260	**DS-STTR14F**	3		○	.551	14.000	.512	13	.512	13	3.150	80	.236	6.0	LR-S-4 × 9	RLR-20S
	DS-STTR15H	3		○	5/8	15.875	591	15	591	15	3.937	100	.236	6.0	LR-S-4 × 9	RLR-20S
	DS-STTR16X*	3		○	.630	16.000	591	15	591	15	3.346	85	.236	6.0	LR-S-4 × 9	RLR-20S

STTN Series - Inserts

■TTMH

Shape	Item Number	d (Inch)	d (mm)	s (Inch)	s (mm)	r_ε (Inch)	r_ε (mm)	Pitch (Inch)	Pitch (mm)	Coated Carbide ZM3 R	Coated Carbide ZM3 L	Coated Cermet C7X R	Coated Cermet C7X L
 Right-Hand style shown	**TTMH3260R010**	3/8	9.525	1/8	3.18	.004	0.10	**31 - 9**	**0.8 - 3.0**	○		○	
	TTMH3260R015	3/8	9.525	1/8	3.18	.006	0.15	**25 - 9**	**1.0 - 3.0**	○		○	
	TTMH3260R020	3/8	9.525	1/8	3.18	.008	0.20	**16 - 9**	**1.5 - 3.0**	○			
	TTMH3260R025	3/8	9.525	1/8	3.18	.010	0.25	**14 - 9**	**1.75 - 3.0**			○	

TTMH Style



Unified Standard (UN, UNF, UNC) Threads

	Thread Type		Pitch		Applicable Inserts
	#1	#2	(TPI)	(mm)	
Coarse (UNC)	No.10-24 UNC		24	1.0583	TTMH3260R010 TTMH3260R015
		No.12-24 UNC	24	1.0583	
	1/4-20 UNC		20	1.2700	
	5/16-18 UNC		18	1.4111	
	3/8-16 UNC		16	1.5875	TTMH3260R010,R015 TTMH3260R020
	7/16-14 UNC		14	1.8143	TTMH3260R010,R015 TTMH3260R020,R025
	1/2-13 UNC		13	1.9538	
	9/16-12 UNC		12	2.1167	
	5/8-11 UNC		11	2.3091	
	3/4-10 UNC		10	2.5400	
	7/8-9 UNC		9	2.8222	
Fine (UNF)		No.12-28 UNF	28	0.9071	TTMH3260R010
	1/4-28 UNF		28	0.9071	
	5/16-24 UNF		24	1.0583	TTMH3260R010 TTMH3260R015
	3/8-24 UNF		24	1.0583	
	7/16-20 UNF		20	1.2700	
	1/2-20 UNF		20	1.2700	
	9/16-18 UNF		18	1.4111	
	5/8-18 UNF		18	1.4111	
	3/4-16 UNF		16	1.5875	TTMH3260R010,R015 TTMH3260R020
	7/8-14 UNF		14	1.8143	TTMH3260R010,R015 TTMH3260R020,R025
	1-12 UNF		12	2.1167	
	1 1/8-12 UNF		12	2.1167	
	1 1/4-12 UNF		12	2.1167	
	1 3/8-12 UNF		12	2.1167	
	1 1/2-12 UNF		12	2.1167	

Metric (M) Threads / Fine and Coarse

Thread Type			Pitch (mm)							
#1	#2	#3	3.00	2.50	2.00	1.75	1.50	1.25	1.00	0.80
M5										Coarse
M6									Coarse	
	M7									
M8								Coarse	Fine	
		M9								
M10							Coarse	Fine		
		M11								
M12						Coarse	Fine	Fine		
	M14				Coarse					
		M15								
M16					Coarse					
		M17								
	M18			Coarse	Fine					
M20										
	M22									
M24			Coarse							
		M25								
		M26					Fine			
	M27		Coarse		Fine					
		M28								
M30			Fine							
		M32								
	M33		Fine							
		M35								
M36			Fine		Fine					
		M38								
	M39		Fine		Fine					
		M40								

Covered Thread Pitch Range

Inserts	Pitch	
	(TPI)	(mm)
TTMH3260R010	31 - 9	0.8 - 3.0
TTMH3260R015	25 - 9	1.0 - 3.0
TTMH3260R020	16 - 9	1.5 - 3.0
TTMH3260R025	14 - 9	1.75 - 3.0

● : Stock ○ : 1-2 week delivery

Cutting condition ➡U4

Thread Whirling

Features

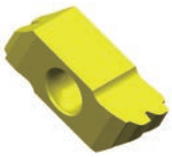
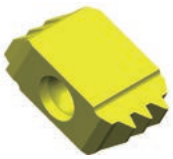


WATCH ON YouTube

- NTK's unique patented design technology makes precise and correct inserts possible the first time, *without any redesign or remanufacture even if it is a multiple-lead thread*
- The sharper cutting edges produce a better surface finish and longer tool life than competitor's inserts

Form Double-lead or Multiple-lead with Single Pass

Patented

	Double-lead threads	Triple-lead threads
Work	Bone screw	Worm gear
Work material	Ti-6Al-4V ELI	brass
Work appearance		
Insert appearance		
Major Dia.	ϕ.157"(4.0㎜)	ϕ.278"(7.0㎜)
Minor Dia.	ϕ.094"(2.4㎜)	ϕ.185"(4.7㎜)
Lead [Pitch×No. of Lead]	.135"(3.42㎜) [.067"×2(1.71㎜×2)]	.193"(4.9㎜) [.064"×3(1.63㎜×3)]

- Can reduce cycle time by more than half
- NTK can achieve what other competitors cannot

Double-lead Bone Screw Process Example

1. 1st thread whirl at taper part
2. Rotate the bar 180° and whirl the 2nd thread on same part as 1
3. Thread whirl whole straight part
4. Thread whirl at very last part to get two-exits, after back of bar has been backed up a half lead (one pitch) and rotated 180°

Special Item Capability

- Even though almost all bone screw shapes are special, NTK thread whirling inserts can make the correct shape of thread the first time, without any redesign and remanufacture
- Inserts will be delivered in 5 weeks after the order is received
- Within a 3 week time period, expedite delivery is available with an expedite fee
- Basically NTK thread whirling inserts are ground with topping and coated

Recommended Cutting Conditions

No. of teeth / Conditions		9	6	4	
Main spindle	RPM	**10 - 40**	10 - 25	7 - 15	Faster RPM reduces machining time
	F	**5400 - 14400**	3600 - 9000	2500 - 5400	
Whirling cutter	RPM	**1500 - 4000**			
Feed Rate		**Same as thread-lead**			
Bar stock	ϕ	**~ϕ.400" ***		~ϕ.200"	* For cutter with ϕ12㎜ ID
Work Material		**Ti-6Al-4V ELI / 316SS / Titanium**			

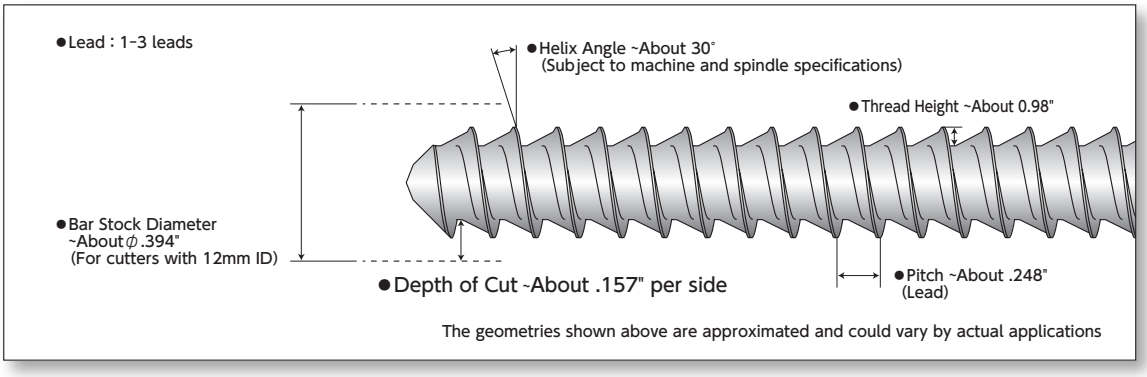
- Formula for calculating thread whirling process time

$$T\ (\text{Seconds}) = \frac{60 \times \text{Thread length}}{\text{Main spindle rpm} \times \text{Feed rate (Thread lead)}}$$

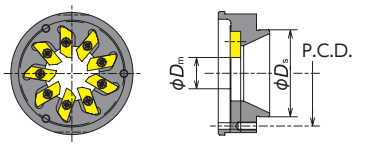
Ex.) Double lead / 2" length / .100" lead (2×.050" pitch) / 30 rpm

$$T\ (\text{Seconds}) = \frac{60 \times 2}{30 \times .100"} = 40 \text{ Seconds}$$

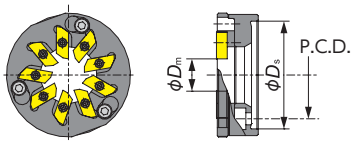
Applicable Thread Geometry (Approximated)



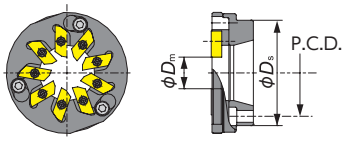
Thread Whiring System



Type 1



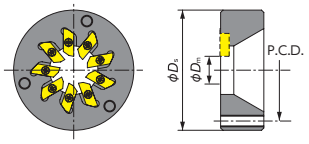
Type 2
Quick-change



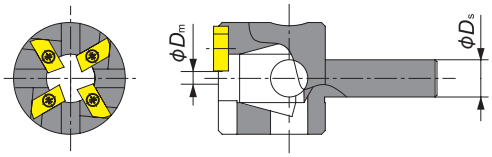
Type 3
Quick-change

Machine make	Model	Location	Spindle make	Spindle model	Helix angle	NTK Thread whirling system	Stock	No. of tooth	ϕD_m (mm)	Type	ϕD_s	P.C.D.	Mount adapter screw
CITIZEN	$M_4$32-VIII	Gang	CITIZEN	BTW-4000	0° – 15°	**TWC9C0746HP1**	●	**9**	**ϕ12**	**1**	ϕ46	ϕ35	M3
	L20E/L20X	Gang		BTW-3000	0° – 15°								
	A20	Gang		BTW-2000	±25°	**TWC9C1040HP1** **TWC6C1040HP1** **TWC9C1040HP1-D16**	● ● ●	**9** **6** **9**	**ϕ12** **ϕ12** **ϕ16**	**1**	ϕ33	ϕ40	M3 (Provided with spindle)
	$M_4$32			BTW-1000	0° – 25°								
	C32				±25°								
	L20												
	M20				+20° – −25°								
	$M_3$32				±25°								
	C12/16	Gang	CITIZEN	LTR0170	±15°	**TWC9C1037P2**	●	**9**	**ϕ12**	**2**	ϕ37	ϕ30.5	CS0310(M3)
	M12/16	Turret		LTR0168									
	M12/16 III			MSW105									
	M20/32 III			KSW110									
	L20	Gang		LTR0183	±15°	**TWC9J1040P2**	●	**9**	**ϕ12**	**2**	ϕ40	ϕ32.5	H-M4 × 12
	M20/32												
	M20/32	Turret		LTR0169									
	K16	Attachment	PCM	GSW-101	±15°	**TWC6P1620HP1-D9**	●	**6**	**ϕ9**	**1**	ϕ32	ϕ26	M4 (Provided with spindle)
	L20	Gang		LSW-101-L20	±10°	**TWC9P1340P2**	●	**9**	**ϕ12**	**2**	ϕ40	ϕ32.5	M4 (Provided with spindle)
	M12/16	Turret		MSW-101									
	M20/M32			KSW-101									
STAR	ECAS-12/20	Attachment	STAR	54178	±10°	**TWC9S1640P2**	●	**9**	**ϕ12**	**3**	ϕ40	ϕ33	CS04148S(M4)
	SB-12R/16R/20R			OM171	−20° – 0°								
	SR-20RIII			68172	−20° – 0°								
	SR-20RIV/SR-32J/SW-20												
	ECAS-20T/ST-20	Turret		59172	±20°								
	ECAS-32T			58171	±10°								
	ST-38			43156	±20°								
	SV-12			45172	±10°								
	SV-20			42173	±10°								
	SV-32			43172	±10°								
	SV-38R			43156	±20°								
	SV-12R II	Attachment		10159	±20°	**TWC4S1433HP1**	●*	**4**	**ϕ8**	**7**	ϕ33	ϕ27	CS0310(M3)
TSUGAMI	BH20/BH38	Turret	TSUGAMI	3263-Y481	±10°	**TWC9TS2252P2**	●	**9**	**ϕ12**	**3**	ϕ52	ϕ42	CS0515(M5)
	BS20	Attachment		3214-Y1371	±10°	**TWC9TS20550P2**	●	**9**	**ϕ16**	**3**	ϕ50	ϕ40	CS0515(M5)
	SS20/SS26/SS32 B0265/B0266 - II B0325/B0326 - II	Attachment		3268-Y450 3268-Y451	0° – 10°	**TWC9TS2244HP1**	●	**9**	**ϕ12**	**4**	ϕ52	ϕ44	CS0520(M5)
	S205/S206			3281-Y450 3281-Y451	0° – 20°	**TWC9TS1944HP1**	●	**9**	**ϕ12**	**4**	ϕ52	ϕ44	CS0520(M5)
	B0123/B0124/B0125/ B0126 - II / III			3220-Y6540 3220-Y6541	0° – 25°	**TWC9TS1644HP1**	●	**9**	**ϕ12**	**4**	ϕ52	ϕ44	CS0515(M5)
	B0203/B0204/B0205/ B0205/B0206 - II / III				0° – 30°	**TWC9TS1044HP1**	●	**9**	**ϕ12**	**4**	ϕ52	ϕ44	CS0515(M5)
	SS20/SS26/SS32			3268-Y271	0° – 10°	**TWC9TS1952P2BK**	●	**9**	**ϕ12**	**4**	ϕ52	ϕ38	CS0515(M5)
					0° – 20°	**TWC9TS1652P2BK**	●	**9**	**ϕ12**	**4**	ϕ52	ϕ38	CS0515(M5)
	SS207/SS267/SS327	—	Using B-axis		0° – 15°	**TWC4TS3010HP1**	●	**4**	**ϕ7**	**5**	ϕ10	For single-corner inserts only	

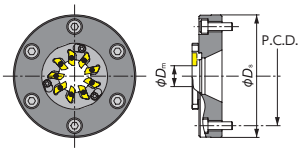
*To be released in July 2015.



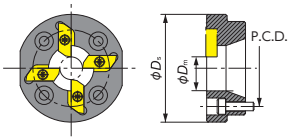
Type 4



Type 5



Type 6
Quick-change



Type 7

Machine make	Model	Location	Spindle make	Spindle model	Helix angle	NTK Thread whirling system	Stock	No. of tooth	ϕD_m (mm)	Type	ϕD_s	P.C.D.	Mount adapter screw
TORNOS	DECO 10/10a	Attachment	TORNOS	224-1900	±15°	**TWC6TO11542HP1**	●	**6**	**φ12**	**4**	φ42	φ32	CS0410(M4)
	Evo DECO 10/10			242-1900									
	DECO 13a/13e			226-1900	±15°	**TWC9TO10540P2**	●	**9**	**φ12**	**3**	φ40	φ31	CS0410(M4)
	Evo DECO 16/10			243-1900									
	Swiss ST26			246-1900									
	DECO 20a			223-1900									
	DECO 26a			225-1900									
	Sigma 20			234-2750	±25°	**TWC9TO12050P2-D18**	●	**9**	**φ18**	**3**	φ50	φ40	CS0410(M4)
	Sigma 32			236-2750									
HASEGAWA	JS-1W	—	HASEGAWA	—	0° - 20°	**TWC9HA22594P2**		**9**	**φ16**	**6**	φ94	φ76	CS0620(M6)

■Spare Insert Holder (Cartridge)

Item number	No. of tooth	ϕD_m (mm)	Compatible cutters
TWC6HP2	6	12	For Type 2 and Type 3*
TWC9HP2	9	12	For Type 2 and Type 3*
TWC9HP2-D16	9	16	For TWC9TS20550P2 and Type 6

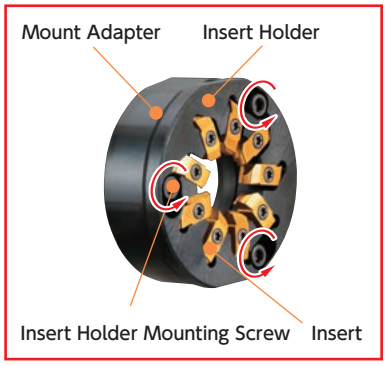
Note: Insert holder comes with insert screws and wrench
Insert holder mounting screw is not included
*Cannot be used for TWC9TS20550P2, TWC9TO12050P2-D18 and TWC9HA22594P2

■Spare Parts

Description		Item number
Insert Screw	For 4mm thick inserts	**FSI17-2.2×6.0**
	For 6.5mm thick inserts	**FSI24-2.2×7.9**
Wrench		**T-07**
Insert Holder Mounting Screw		**CS0309-TW**

NTK's Unique Attachment System

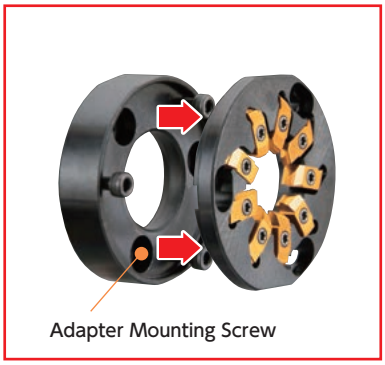
NTK' s whirling insert holder can be attached and detached without removing mounting screws



① Loosen the Mounting Screws



② Rotate the Insert Holder 10 degrees

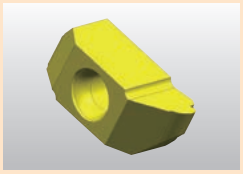


③ Detach the Insert Holder without removing the Mounting Screws

● : Stock ○ : 1-2 week delivery

Basic Insert Grade

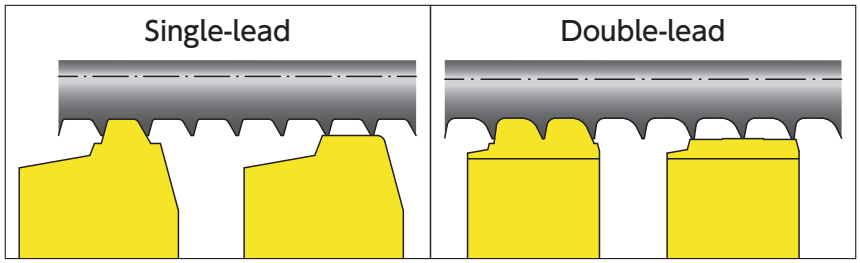
ZM3



- ZM3 is our basic grade for NTK thread whirling
- ZM3 offers excellent surface finish
- NTK can make inserts with other coatings to meet customers demands

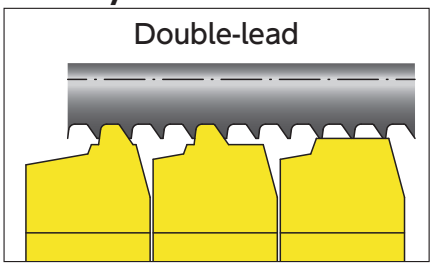
NTK Experiences and Solutions Example

For absolute flat on OD



- Two insert combination brings absolute flat on OD to meet the drawing

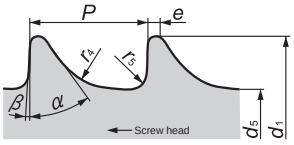
For tiny thread



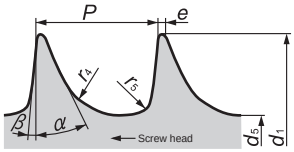
- NTK's Thread Whirling system can machine small diameter multi-lead screws to spec, with lower tool pressure, by using several types of specially designed and accurately ground inserts on the cutter.

Standard Thread Whirling Inserts (two-sided) for ISO Style Threads

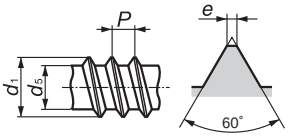
(Note: Must use Thread whirling cutters with 12㎜ ϕDm dimension. See page U18-19 to find ϕDm for each cutter.)



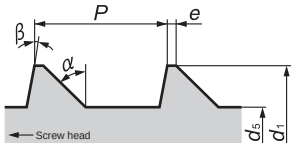
ISO5835 HA



ISO5835 HB



ISO9268 HC



ISO9268 HD

Metric dimensions

Item number	ISO Standard		d_1	d_5	P	e	r_4	r_5	α	β	Supposition material Dia.	Coated Carbide ZM3
TW5835-HA1.5-D12	ISO5835	HA1.5	$1.5^{0}_{-0.15}$	$1.1^{0}_{-0.1}$	0.5	0.1	0.3	0.1	35°	3°	ϕ8	○
TW5835-HA2.0-D12		HA2.0	$2.0^{0}_{-0.15}$	$1.3^{0}_{-0.1}$	0.6	0.1	0.4	0.1	35°	3°		○
TW5835-HA2.7-D12		HA2.7	$2.7^{0}_{-0.15}$	$1.9^{0}_{-0.15}$	1	0.1	0.6	0.2	35°	3°		○
TW5835-HA3.5-D12		HA3.5	$3.5^{0}_{-0.15}$	$2.4^{0}_{-0.15}$	1.25	0.1	0.8	0.2	35°	3°		○
TW5835-HA4.0-D12		HA4.0	$4.0^{0}_{-0.15}$	$2.9^{0}_{-0.15}$	1.5	0.1	0.8	0.2	35°	3°		○
TW5835-HA4.5-D12		HA4.5	$4.5^{0}_{-0.15}$	$3.0^{0}_{-0.15}$	1.75	0.1	1	0.3	35°	3°		○
TW5835-HA5.0-D12		HA5.0	$5.0^{0}_{-0.15}$	$3.5^{0}_{-0.15}$	1.75	0.1	1	0.3	35°	3°	ϕ10	○
TW5835-HB4.0-D12		HB4.0	$4.0^{0}_{-0.15}$	$1.9^{0}_{-0.15}$	1.75	0.1	0.8	0.3	25°	5°	ϕ8	○
TW5835-HB6.5-D12		HB6.5	$6.5^{0}_{-0.15}$	$3.0^{0}_{-0.15}$	2.75	0.2	1.2	0.8	25°	5°	ϕ10	○
TW9268-HC2.9-D12	ISO9268	HC2.9	2.79 to 2.9	2.03 to 2.18	1.06	0.1max	—	—	—	—	ϕ8	
TW9268-HC3.5-D12		HC3.5	3.43 to 3.53	2.51 to 2.64	1.27	0.1max	—	—	—	—		
TW9268-HC3.9-D12		HC3.9	3.78 to 3.91	2.77 to 2.92	1.27	0.1max	—	—	—	—		
TW9268-HC4.2-D12		HC4.2	4.09 to 4.22	2.95 to 3.25	1.27	0.1max	—	—	—	—		
TW9268-HD4.0-D12		HD4.0	4.0±0.03	2.92±0.03	1.59	0.1	—	—	45°	10°		
TW9268-HD4.5-D12		HD4.5	4.5±0.03	2.92±0.03	2.18	0.1	—	—	45°	10°		

● : Stock ○ : 1-2 week delivery

Application Examples

Double-lead Bone Screw

Work Material : Ti-6Al-4v ELI

Bar Stock Dia.	ϕ.375	Number of start	2
Major Dia.	ϕ.157	Helix Angle	28.5˚
Minor Dia.	ϕ.098	Hand of thread	Right
Cutting condition			
Main Spindle Speed (rpm)	15	Speed of whirling cutter (rpm)	3,500
Lead = Feed (IPR)	.217	Result	OK

NTK Thread Whirling: Dramatically improved productivity

Competitor's Thread Whiring: *Cannot complete with single pass. Requires feeding stock multiple times and two passes for threading each time.*

NTK thread whirling succeeded in double lead screw machining when one of the major thread whirling suppliers has failed many times.

Double-lead Bone Screw

Work Material : Ti-6Al-4v ELI

Bar Stock Dia.	ϕ.350	Number of start	2
Major Dia.	ϕ.180	Helix Angle	23.0˚
Minor Dia.	ϕ.120	Hand of thread	Right
Cutting condition			
Main Spindle Speed (rpm)	12	Speed of whirling cutter (rpm)	2,500
Lead = Feed (IPR)	.200	Result	OK

NTK Thread Whirling: Dramatically improved productivity

Competitor's Thread Whiring: *Cannot complete with single pass. Requires feeding stock multiple times and two passes for threading each time.*

The customer could not get perfect double lead thread form in single pass from other manufacturers. NTK got perfect thread form with a single pass on first trial saving cycle time.

Double-lead Bone Screw

Work Material : Ti-6Al-4v ELI

Bar Stock Dia.	ϕ.250	Number of start	2
Major Dia.	ϕ.118	Helix Angle	15.4˚
Minor Dia.	ϕ.083	Hand of thread	Right
Cutting condition			
Main Spindle Speed (rpm)	11	Speed of whirling cutter (rpm)	2,200
Lead = Feed (IPR)	.087	Result	OK

NTK Thread Whirling: Dramatically improved productivity

Competitor's Thread Whiring: *Cannot complete with single pass. Requires feeding stock multiple times and two passes for threading each time.*

Customer was concerned with stock rigidity and long cycle time. NTK applied three geometry inserts to achieve single pass machining, in dramatically short time. The up-sharp cutting edges and low cutting pressure produced "excellent" surface finish.

Single-lead Bone Screw

Work Material : 316SS

Bar Stock Dia.	ϕ.315	Number of start	1
Major Dia.	ϕ.138	Helix Angle	7.5˚
Minor Dia.	ϕ.098	Hand of thread	Right
Cutting condition			
Main Spindle Speed (rpm)	23	Speed of whirling cutter (rpm)	2,000
Pitch = Feed (IPR)	.049	Result	OK

NTK Thread Whirling: 2600 pcs

Competitor's Thread Whiring: 1000 pcs

Some thread whirling manufacturers offer 6-teeth or 12-teeth systems, too many teeth cause chip packing issues and more tool pressure. Fewer teeth means greater cycle time. NTK concluded that 9-teeth is the best configuration. Our customers can run 1.5 times faster and get longer tool life.

Single-lead Bone Screw

Work Material : Ti-6Al-4v ELI

Bar Stock Dia.	ϕ.197	Number of start	1
Major Dia.	ϕ.091	Helix Angle	5.3˚
Minor Dia.	ϕ.067	Hand of thread	Right
Cutting condition			
Main Spindle Speed (rpm)	30	Speed of whirling cutter (rpm)	3,100
Pitch = Feed (IPR)	.023	Result	OK

NTK Thread Whirling: 2200 pcs

This thread is up to 1.26" length with a small pitch. Cycle time could be increased with a single-point threading tool. NTK's inserts, designed for lower tool pressure, ran 2,200 pcs/corner at 30 rpm of bar stock (F10,800). It only took 110 seconds to finish a 1.26" length thread.

Triple-lead Worm Gear

Work Material : Brass

Bar Stock Dia.	ϕ.315	Number of start	3
Major Dia.	ϕ.276	Helix Angle	14.6˚
Minor Dia.	ϕ.185	Hand of thread	Left
Cutting condition			
Main Spindle Speed (rpm)	20	Speed of whirling cutter (rpm)	3,500
Lead = Feed (IPR)	.189	Result	OK

Multi-lead threads, common in the Worm Gear industry are made by a forming or cutting process. The large helix angle is difficult to machine with single-point threading.
NTK now makes thread whilring inserts for multi-lead threads. Cycle time is reduced with a one pass process and thread form dimensions are stable with the low tool pressure.

MEMO

V



ID Tooling

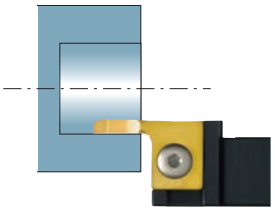
- ID Tooling Tools ····· V2
- Recommended Cutting Conditions····· V4
- Tools list ····· V6

LBM Series ····· V6
STICK DUO SPLASH ····· V8
STICK DUO HYPER ····· V10
STICK DUO ····· V14
ID Back Turning Tools ····· V17
ID Grooving Tools ····· V18
ID Threading Tools ····· V20
Mogul Bar Series ····· V23

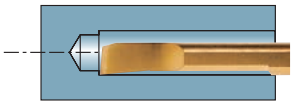
- Chipbreakers for Mogul Bar ··· V32

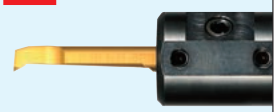
NTK ID Tooling - Product Lines

■ ID Boring

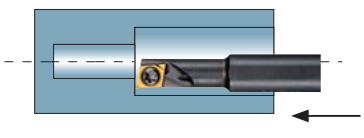


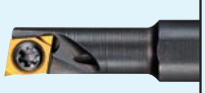
Insert	LBM ➡V7		
	LBMA	DS-LBMB	CH-LBM
Holder	 ➡V6	 ➡V6	 ➡V6
Min. Bore Dia.	ϕ.039"(1.0mm)		

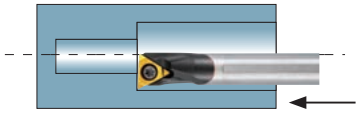


Insert	SHFS • SHFB • SBFS • SBFB ➡V12 • 16		
	HY-NBH-OH	HY-NBH	NBH
Holder	NEW  ➡V9 STICK DUO HYPER with Coolant through	 ➡V11 STICK DUO HYPER	 ➡V14
Min. Bore Dia.	ϕ.079"(2.0mm)		

Insert \ Holder	HY-NBH-OH STICK DUO HYPER with Coolant through	HY-NBH STICK DUO HYPER	NBH STICK DUO
"S" chip breaker  Sharp cutting edge	**SHFS-S** High Precision Insert	**Best fit**	**Best fit**	2nd OPT.
	SBFS-S	2nd OPT.	2nd OPT.	**Best fit**
"F" chip breaker  Evacuates chips BACKWARD	**SHFB-F** High Precision Insert	**Best fit**	**Best fit**	2nd OPT.
	SBFB-F	2nd OPT.	2nd OPT.	**Best fit**
"H" Flat type  Mirror finish edge	**SHFS-H** High Precision Insert	**Best fit**	**Best fit**	2nd OPT.
	SBFS-H	2nd OPT.	2nd OPT.	**Best fit**
Back turning	**SBB**	2nd OPT.	2nd OPT.	**Best fit**
Grooving	**SBG**	2nd OPT.	2nd OPT.	**Best fit**
Threading	**SBT**	2nd OPT.	2nd OPT.	**Best fit**

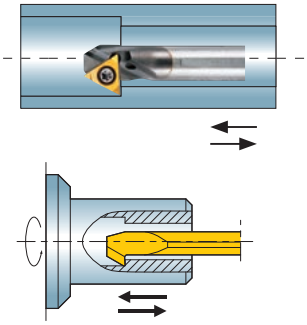


Insert	MBL ➡V23		ERGP ➡V24	
	C-MBR (Carbide shank)	S-MBR (Steel shank)	C-SEXR (Carbide shank)	S-SEXR (Steel shank)
Holder	 ➡V23 Coolant through	 ➡V23 Coolant through	 ➡V24 Coolant through	 ➡V24 Coolant through
Min. Bore Dia.	ϕ.197"(5.0mm)		ϕ.236"(6.0mm)	



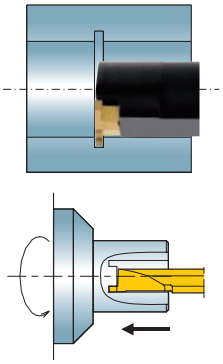
Insert	CC/CP ➡V25・26		TC/TP ➡V30	
Holder	C-SCLC/P (Carbide shank)	S-SCLC/P (Steel shank)	C-STUC/P (Carbide shank)	S-STUC/P (Steel shank)
	Coolant through ➡V25・26	Coolant through ➡V25・26	➡V30 Coolant through	➡V30 Coolant through
Min. Bore Dia.	ϕ.276"(7.0mm)		ϕ.315"(8.0mm)	

ID Back Turning



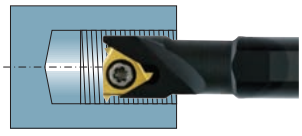
Insert	NEW SBB ➡V17		TC/TP ➡V30
Holder	HY-NBH-OH	NBH	C-STZP/C (Carbide shank)
	NEW ➡V9 Coolant through	➡V14	➡V30
Min. Bore Dia.	ϕ.118"(3.0mm)		ϕ.394"(10mm)

ID Grooving



Insert	SBG ➡V18		SFG ➡V18	GTG ➡V19
Holder	HY-NBH-OH	NBH	NBH	S-BGR/BGR
	NEW ➡V9 Coolant through	➡V14	➡V14	➡V19
Min. Bore Dia.	ϕ.118"(3.0mm)		ϕ.118"(3.0mm)	ϕ.394"(10mm)

ID Threading



Insert	SBT ➡V20		TMN ➡V22
Holder	HY-NBH-OH	NBH	TGC/HN
	NEW ➡V9 Coolant through	➡V14	➡V22
Min. Bore Dia.	ϕ.118"(3.0mm)		ϕ.315"(8.0mm)

Recommended Cutting Conditions

ID Boring

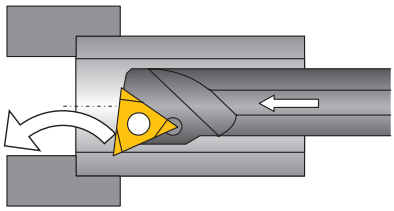
diameter ≤ .240"

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	TM4					VM1 / TM4	
	2nd choice	VM1 / ZM3					ZM3	
Cutting Speed (SFM)		60 160 230				100 200 300		
Feed Rate (IPR)		.0004 .0012 .0020						
Depth Of Cut (DOC)		.0020 .0031 .0039						

diameter > .240"

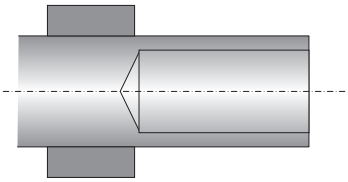
Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4			DT4	TM4	QM3	
	2nd choice	TM4			QM3 / TM4	QM3	TM4 / DT4 / C7Z(X)	
Cutting Speed (SFM)		150 230 330			130 230 330	150 300 600	Carbide 150 300 500 C7Z(X) 400 500 800	
Feed Rate (IPR)		.0008 .0024 .0047						
Depth Of Cut (DOC)		.0039 .0197 .0787						

Through hole

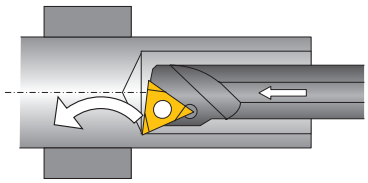


For chip control : chips can be evacuated forward

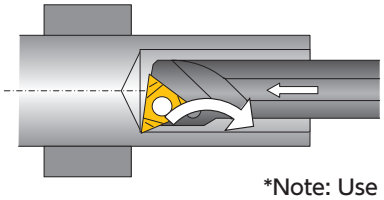
Blind hole



Blind hole due to bar stock



Typical inserts direct flow chips forward. Then packed chips damage and break cutting edge



F05, F1, and FG chipbreakers will direct chips backwards and eliminate chipping on inserts

*Note: Use right-hand inserts with F05, F1 and FG chipbreaker for right-hand boring bars

ID Grooving

GTG / SBG

Work Material		High Temperature Alloys	Titanium Alloys	Cobalt Chrome Alloys	Stainless Steels		Alloy Steels	Carbon Steels
					Hard to cut	Free cutting		
Common Name		Inconel Hastelloy MP35N	Ti-6Al-4V	ASTM F-75	304 316 17-4PH	303 430F	5120 4137	1045 1046
Grade	1st choice	DT4			DM4 / DT4	TM4	QM3	
	2nd choice	TM4 / QM3			QM3 / VM1	QM3	TM4 / DT4 / C7Z(X)	
Cutting Speed (SFM)		75 125 225	100 200 275		130 230 330	150 300 600	Carbide 150 300 500 C7Z(X) 400 500 800	
Feed Rate (IPR) A. Grooving B. Side turning*	Width .010-.020	A. .0002 - .0012 B. .0001 - .0002						
	.020-.040	A. .0008 - .0024 B. .0002 - .0004					A. .0008 - .0028 B. .0002 - .0004	
	.040-.080	A. .0012 - .0028 B. .0008 - .0020					A. .0012 - .0031 B. .0012 - .0024	
	> .080	A. .0012 - .0079 B. .0012 - .0024						

*When side turining, Max. DOC is under .0079". Under .016" width side turning impossible

ID Threading

●Threading

For 600 - 1500 RPM Recommended Depth of Cut (DOC) for Each Pass

UNF Thread		Number of Pass																		
Pitch (TPI)	Total DOC (inch)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
36	0.43	.002	.002	.002	.002	.002	.002	.001	.001	.0008	.0004	—	—	—	—	—	—	—	—	—
32	0.49	.002	.002	.002	.002	.002	.001	.001	.001	.001	.0008	.0004	—	—	—	—	—	—	—	—
28	0.56	.003	.002	.002	.002	.002	.002	.001	.001	.001	.001	.001	.0008	.0004	—	—	—	—	—	—
24	0.66	.003	.002	.002	.002	.002	.002	.002	.002	.001	.001	.001	.001	.0008	.0004	—	—	—	—	—
20	0.78	.003	.003	.003	.003	.002	.002	.002	.002	.002	.002	.001	.001	.001	.001	.0008	.0004	—	—	—
18	0.87	.003	.003	.003	.003	.003	.002	.002	.002	.002	.002	.002	.002	.001	.001	.001	.0008	.0004	—	—
16	0.98	.003	.003	.003	.003	.003	.003	.003	.002	.002	.002	.002	.002	.002	.001	.001	.001	.001	.0008	.0004

Metric Thread		Number of Pass																				
Pitch (mm)	Total DOC (mm)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
0.5	0.3	0.06	0.05	0.05	0.04	0.04	0.03	0.02	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—
0.7	0.43	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.03	0.02	0.01	—	—	—	—	—	—	—	—	—	—	—
0.75	0.46	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.02	0.01	—	—	—	—	—	—	—	—	—	—
0.8	0.49	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.02	0.01	—	—	—	—	—	—	—	—	—
1.0	0.62	0.07	0.07	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.02	0.01	—	—	—	—	—	—	—
1.25	0.76	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.04	0.03	0.03	0.02	0.01	—	—	—	—	—	—
1.5	0.92	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.01	—	—	—
1.75	1.09	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.01

LBM Series

Minimum bore diameter ϕ.039"(1.0㎜)-ϕ.118"(3.0㎜)

LBMA / LBMA-S

LBMAR□□-S

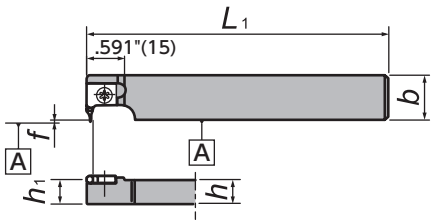


Figure-1

LBMAR□□

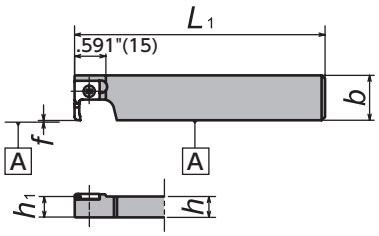


Figure-2

LBMAR□□-F

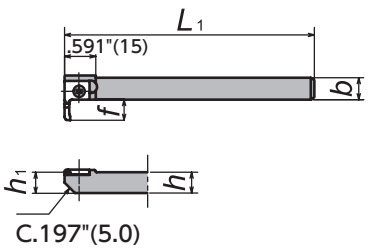


Figure-3

Right-Hand style shown

DS-LBMB

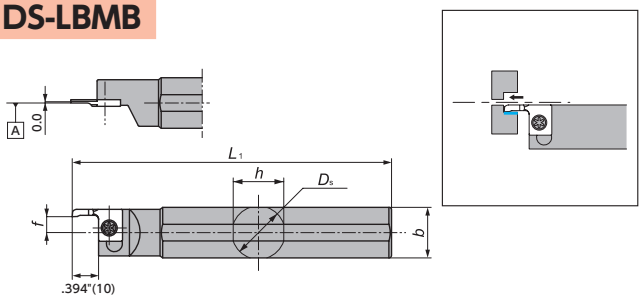


Figure-4

Left-Hand style shown

CH-LBM

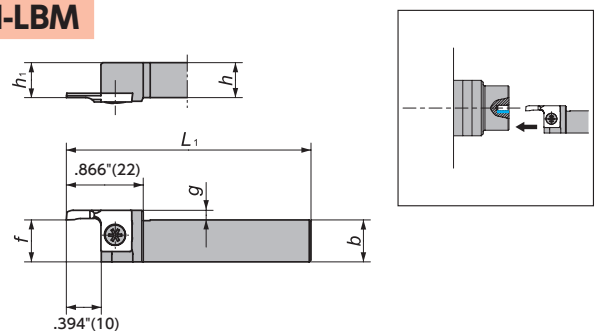


Figure-5

Left-Hand style shown

■LBMAR / CH-TTPL

Gage Insert	Item Number	Figure	Stock	D_s (Inch)	D_s (㎜)	h (Inch)	h (㎜)	b (Inch)	b (㎜)	h_1 (Inch)	h_1 (㎜)	L_1 (Inch)	L_1 (㎜)	f (Inch)	f (㎜)	Clamp Screw	Wrench
Short type	**LBMAR10SGX**	1	○	–	–	.394	10	.709	18	.394	10	3.346	85	0	0.0	LRIS-4×10PW	CLR-15S
	LBMAR10S	1	○	–	–	.394	10	.709	18	.394	10	4.724	120	0	0.0	LRIS-4×10PW	CLR-15S
	LBMAR12S	1	○	–	–	.472	12	.709	18	.472	12	4.724	120	0	0.0	LRIS-4×12PW	CLR-15S
Long type	**LBMAR06-IN**	2	●	–	–	3/8		3/8		3/8		4.724	120	0	0.0	LRIS-4×10PW	CLR-15S
	LBMAR08-IN	2	●	–	–	1/2		1/2		1/2		4.724	120	0	0.0	LRIS-4×12PW	CLR-15S
	LBMAR10-IN	2	●	–	–	5/8		5/8		5/8		4.724	120	0	0.0	LRIS-4×12PW	CLR-15S
	LBMAR08	2	○	–	–	.315	8	.846	21.5	.315	8	4.724	120	0	0.0	LRIS-4×10	LLR-25S
	LBMAR10	2	○	–	–	.394	10	.846	21.5	.394	10	4.724	120	0	0.0	LRIS-4×10PW	CLR-15S
	LBMAR12	2	○	–	–	.472	12	.846	21.5	.472	12	4.724	120	0	0.0	LRIS-4×10PW	CLR-15S
	LBMAR16	2	○	–	–	630	16	.846	21.5	630	16	4.724	120	0	0.0	LRIS-4×12PW	CLR-15S
Long type	**LBMAR10-F**	3	○	–	–	.394	10	.394	10.0	.394	10	4.724	120	.394	10.0	LRIS-4×12PW	CLR-15S
 Long type	**DS-LBMBL14F**	4	○	.551	14.000	.512	13	.512	13	–	–	3.150	80 ＊1	＊3	＊3	LRIS-4×10PW	CLR-15S
	DS-LBMBL15H	4	○	5/8	15.875	.591	15	.591	15	–	–	3.937	100 ＊1	＊3	＊3	LRIS-4×10PW	CLR-15S
	DS-LBMBL16X	4	●	.630	16.000	.591	15	.591	15	–	–	3.740	95 ＊1	＊2	＊2	LRIS-4×10PW	CLR-15S
	DS-LBMBL19	4	●	3/4	19.050	.709	18	.709	18	–	–	4.724	120 ＊1	＊2	＊2	LRIS-4×10PW	CLR-15S
	DS-LBMBL20	4	●	.787	20.000	.748	19	.748	19	–	–	4.724	120 ＊1	＊2	＊2	LRIS-4×10PW	CLR-15S
	DS-LBMBL22	4	●	.866	22.000	.827	21	.827	21	–	–	4.724	120 ＊1	＊2	＊2	LRIS-4×10PW	CLR-15S
	DS-LBMBL25-MET	4	○	.984	25.000	.945	24	.945	24	–	–	4.724	120 ＊1	＊2	＊2	LRIS-4×10PW	CLR-15S
	DS-LBMBL25	4	○	1	25.400	.945	24	.945	24	–	–	5.906	150 ＊1	＊2	＊2	LRIS-4×10PW	CLR-15S
Short type	**CH-LBML1012H**	5	○	–	–	.394	10	.472	12	.394	10	3.937	100	＊3	＊3	LRIS-4×10PW	CLR-15S
	CH-LBML1212H	5	○	–	–	.472	12	.472	12	.472	12	3.937	100	＊3	＊3	LRIS-4×10PW	CLR-15S

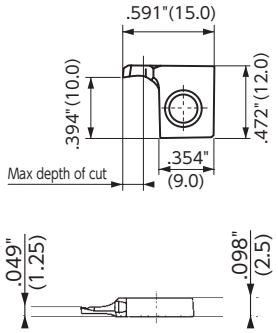
LBM Series - Toolholders

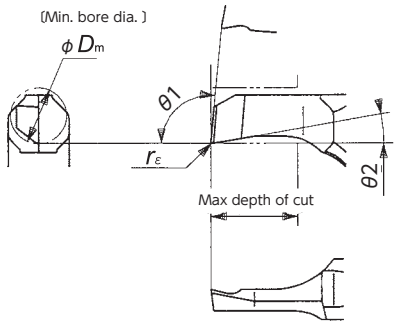
LBMD-S

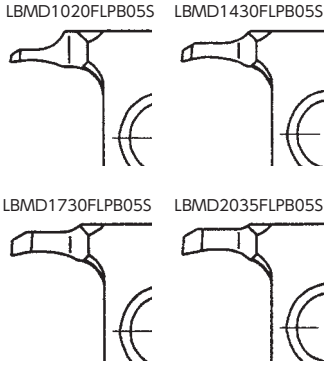
Short type

Mirror finish









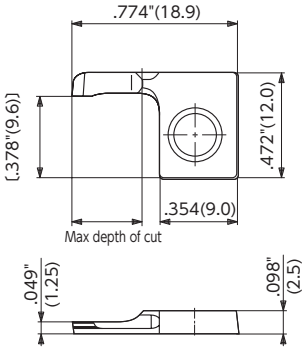
LBMD2335FLPB05S shown

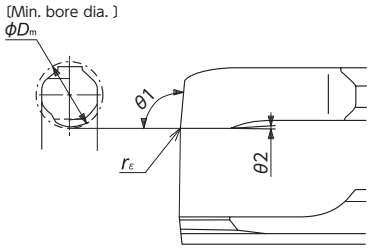
DS-LBMB

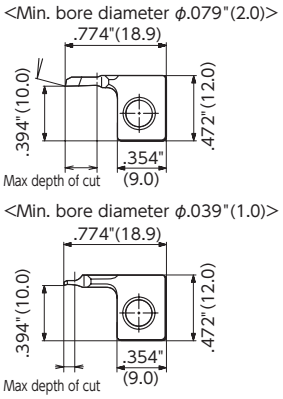
Long type

Mirror finish









Min. bore diameter ϕ.118"(3.0) shown

LBM Mirror finish

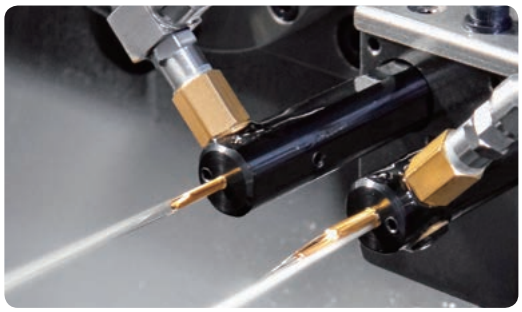
Insert type	Item Number		Chip-breaker	Min. Bore Dia. ϕDm (Inch)	(mm)	Max. Depth (Inch)	(mm)	θ1	θ2	rε (Inch)	(mm)	Coated Carbide VM1	ZM3
Short type	LBMD1020FLVBS	M	Yes	.039	1.0	.079	2.0	95°	10°	.000	0.00	○	
	LBMD1020FLPB05S	M	Yes	.039	1.0	.079	2.0	95°	10°	.002	0.05	○	
	LBMD1430FLVBS	M	Yes	.055	1.4	.118	3.0	95°	10°	.000	0.00	○	
	LBMD1430FLPB05S	M	Yes	.055	1.4	.118	3.0	95°	10°	.002	0.05	●	
	LBMD1730FLVBS	M	Yes	.067	1.7	.118	3.0	95°	10°	.000	0.00	○	
	LBMD1730FLPB05S	M	Yes	.067	1.7	.118	3.0	95°	10°	.002	0.05	○	
	LBMD2035FLVBS	M	Yes	.079	2.0	.138	3.5	95°	10°	.000	0.00	○	
	LBMD2035FLPB05S	M	Yes	.079	2.0	.138	3.5	95°	10°	.002	0.05	○	
	LBMD2335FLVBS	M	Yes	.091	2.3	.138	3.5	95°	10°	.000	0.00	○	
	LBMD2335FLPB05S	M	Yes	.091	2.3	.138	3.5	95°	10°	.002	0.05	●	
Long type	LBMD1020FLVB	M	Yes	.039	1.0	.079	2.0	95°	10°	.000	0.00	●	
	LBMD1020FLPB05	M	Yes	.039	1.0	.079	2.0	95°	10°	.002	0.05	●	
	LBMD2060FLVB	M	Yes	.079	2.0	.236	6.0	95°	10°	.000	0.00	●	
	LBMD2060FLPB05	M	Yes	.079	2.0	.236	6.0	95°	10°	.002	0.05	●	
	LBME2060FLV	M	No	.079	2.0	.236	6.0	105°	2°	.000	0.00	○	
	LBME2060FLP05	M	No	.079	2.0	.236	6.0	105°	2°	.002	0.05	○	
	LBME2060FLVB	M	Yes	.079	2.0	.236	6.0	105°	2°	.000	0.00	○	
	LBME2060FLPB05	M	Yes	.079	2.0	.236	6.0	105°	2°	.002	0.05	○	
	LBMC3080FLV	M	No	.118	3.0	.315	8.0	95°	2°	.000	0.00	○	○
	LBMC3080FLP05	M	No	.118	3.0	.315	8.0	95°	2°	.002	0.05	○	○
	LBM3080FLVB	M	Yes	.118	3.0	.315	8.0	90°	2°	.000	0.00	●	
	LBM3080FLPB05	M	Yes	.118	3.0	.315	8.0	90°	2°	.002	0.05	●	
	LBMC3080FLVB	M	Yes	.118	3.0	.315	8.0	95°	2°	.000	0.00	○	○
	LBMC3080FLPB05	M	Yes	.118	3.0	.315	8.0	95°	2°	.002	0.05	○	○

● : Stock ○ : 1-2 week delivery Ⓜ : Mirror finish

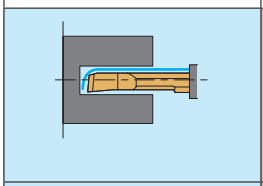
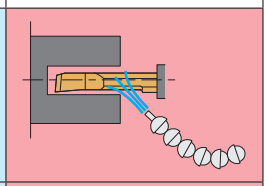
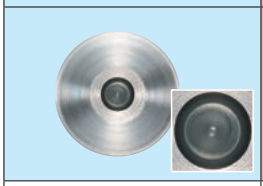
Cutting condition ➡V4

STICK DUO SPLASH

- Coolant through sleeves for ID Boring with Adjustable Overhang Mechanism -

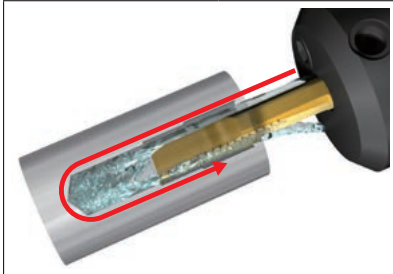
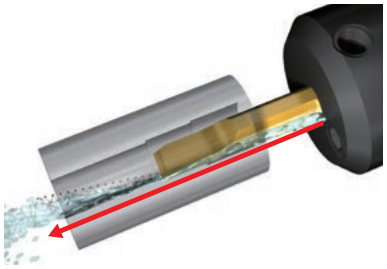
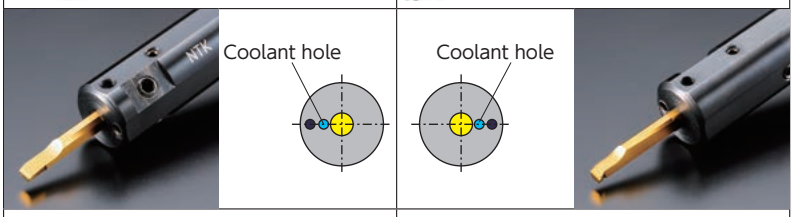
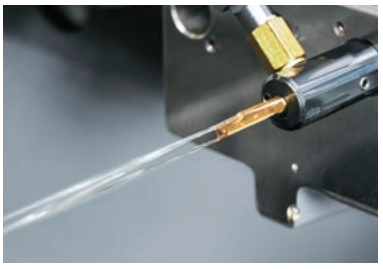
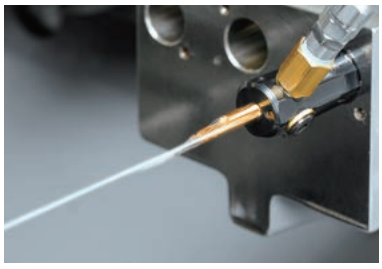


■No chip problems

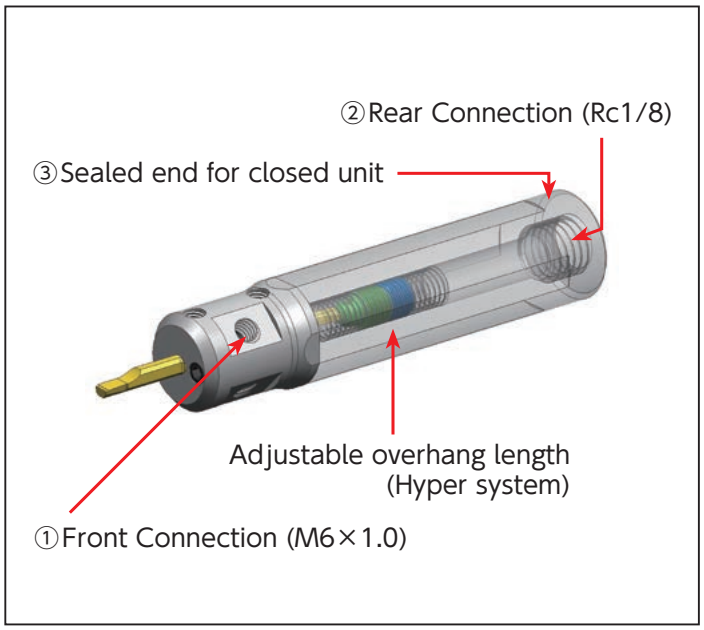
STICK DUO SPLASH	External coolant
	
	
No chip inside hole	*Chip packed*

Material : 4140
Insert bar : SHFS040R005S
Hole depth : .590"(15㎜)
Pilot hole : φ.201"×1.102"L(φ5.1×28.0㎜L)
Coolant Pressure : 725psi(5MPa)

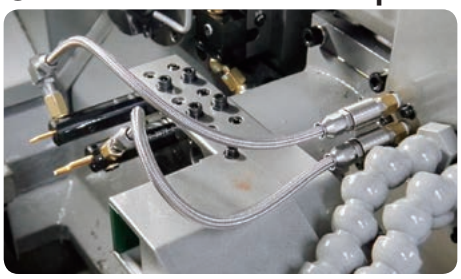
■Choose from 2 coolant directions

Ⅰ) For Blind hole	Ⅱ) For Through hole
	
	
	
Just rotated 180 degrees	

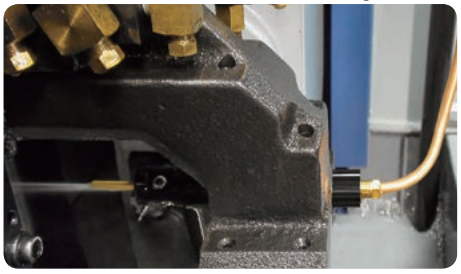
■3 coolant connection options



①Front Connection example



②Rear Connection example



SPLASH DUO - Stick Duo Hyper with Coolant through -

HY-NBH-OH (Coolant through)

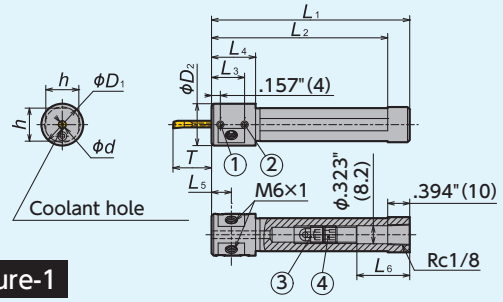


Figure-1

HY-NBH-OH (Coolant through)

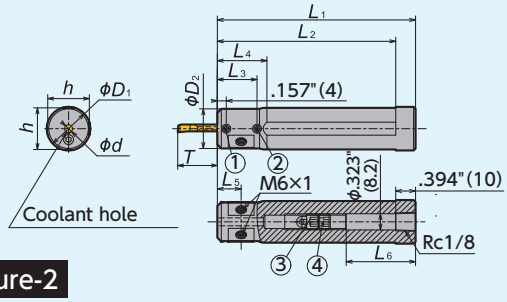
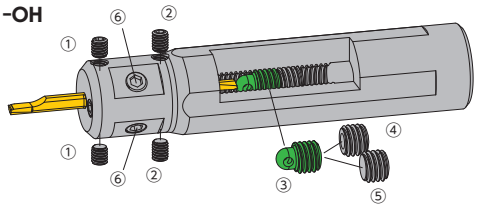


Figure-2

Item Number	Stock	Figure	φ d		φD1		φD2	h	L1	L2	L3	L4	L5	L6	Overhang Length of Bar T			
															Min.		Max.	
			(Inch)	(mm)	(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Inch)	(mm)	(Inch)	(mm)
HY-NBH02016G-OH	●	1	.079	2	.630	16	19	15	90	80	15	19	9.5	29	.197	5.0	.709	18.0
HY-NBH02516G-OH	●	1	.098	2.5	.630	16	19	15	90	80	15	19	9.5	30	.248	6.3	.768	19.5
HY-NBH03016G-OH	●	1	.118	3	.630	16	19	15	90	80	15	19	9.5	31	.295	7.5	.827	21.0
HY-NBH03516G-OH	●	1	.138	3.5	.630	16	19	15	90	80	15	19	9.5	23	.346	8.8	.965	24.5
HY-NBH04016G-OH	●	1	.157	4	.630	16	19	15	90	80	20	24	12	23	.394	10.0	1.102	28.0
HY-NBH05016G-OH	●	1	.197	5	.630	16	19	15	90	80	20	24	12	16	.492	12.5	1.378	35.0
HY-NBH02019J-OH	●	2	.079	2	3/4	19.05	19.05	18	110	100	15	—	9.5	49	.197	5.0	.709	18.0
HY-NBH02519J-OH	●	2	.098	2.5	3/4	19.05	19.05	18	110	100	15	—	9.5	50	.248	6.3	.768	19.5
HY-NBH03019J-OH	●	2	.118	3	3/4	19.05	19.05	18	110	100	15	—	9.5	51	.295	7.5	.827	21.0
HY-NBH03519J-OH	●	2	.138	3.5	3/4	19.05	19.05	18	110	100	15	—	9.5	43	.346	8.8	.965	24.5
HY-NBH04019J-OH	●	2	.157	4	3/4	19.05	19.05	18	110	100	20	—	12	43	.394	10.0	1.102	28.0
HY-NBH05019J-OH	●	2	.197	5	3/4	19.05	19.05	18	110	100	20	—	12	36	.492	12.5	1.378	35.0
HY-NBH02020J-OH	●	2	.079	2	.787	20	20	19	110	100	15	—	9.5	49	.197	5.0	.709	18.0
HY-NBH02520J-OH	●	2	.098	2.5	.787	20	20	19	110	100	15	—	9.5	50	.248	6.3	.768	19.5
HY-NBH03020J-OH	●	2	.118	3	.787	20	20	19	110	100	15	—	9.5	51	.295	7.5	.827	21.0
HY-NBH03520J-OH	●	2	.138	3.5	.787	20	20	19	110	100	15	—	9.5	43	.346	8.8	.965	24.5
HY-NBH04020J-OH	●	2	.157	4	.787	20	20	19	110	100	20	—	12	43	.394	10.0	1.102	28.0
HY-NBH05020J-OH	●	2	.197	5	.787	20	20	19	110	100	20	—	12	36	.492	12.5	1.378	35.0
HY-NBH02022X-OH	●	2	.079	2	.866	22	20	21	120	110	15	25	9.5	59	.197	5.0	.709	18.0
HY-NBH02522X-OH	●	2	.098	2.5	.866	22	20	21	120	110	15	25	9.5	60	.248	6.3	.768	19.5
HY-NBH03022X-OH	●	2	.118	3	.866	22	20	21	120	110	15	25	9.5	61	.295	7.5	.827	21.0
HY-NBH03522X-OH	●	2	.138	3.5	.866	22	20	21	120	110	15	25	9.5	53	.346	8.8	.965	24.5
HY-NBH04022X-OH	●	2	.157	4	.866	22	20	21	120	110	20	25	12	53	.394	10.0	1.102	28.0
HY-NBH05022X-OH	●	2	.197	5	.866	22	20	21	120	110	20	25	12	46	.492	12.5	1.378	35.0
HY-NBH02025.0K-OH	●	2	.079	2	.984	25.0	20	24	125	115	15	25	9.5	64	.197	5.0	.709	18.0
HY-NBH02525.0K-OH	●	2	.098	2.5	.984	25.0	20	24	125	115	15	25	9.5	65	.248	6.3	.768	19.5
HY-NBH03025.0K-OH	●	2	.118	3	.984	25.0	20	24	125	115	15	25	9.5	66	.295	7.5	.827	21.0
HY-NBH03525.0K-OH	●	2	.138	3.5	.984	25.0	20	24	125	115	15	25	9.5	58	.346	8.8	.965	24.5
HY-NBH04025.0K-OH	●	2	.157	4	.984	25.0	20	24	125	115	20	25	12	58	.394	10.0	1.102	28.0
HY-NBH05025.0K-OH	●	2	.197	5	.984	25.0	20	24	125	115	20	25	12	51	.492	12.5	1.378	35.0
HY-NBH02025.4K-OH	●	2	.079	2	1	25.4	20	24	125	115	15	25	9.5	64	.197	5.0	.709	18.0
HY-NBH02525.4K-OH	●	2	.098	2.5	1	25.4	20	24	125	115	15	25	9.5	65	.248	6.3	.768	19.5
HY-NBH03025.4K-OH	●	2	.118	3	1	25.4	20	24	125	115	15	25	9.5	66	.295	7.5	.827	21.0
HY-NBH03525.4K-OH	●	2	.138	3.5	1	25.4	20	24	125	115	15	25	9.5	58	.346	8.8	.965	24.5
HY-NBH04025.4K-OH	●	2	.157	4	1	25.4	20	24	125	115	20	25	12	58	.394	10.0	1.102	28.0
HY-NBH05025.4K-OH	●	2	.197	5	1	25.4	20	24	125	115	20	25	12	51	.492	12.5	1.378	35.0

Parts for SPLASH DUO

Item Number	Clamp Screw		Overhang Adjustment		
HY-NBH ... -OH	①	②	③	④	⑤
	SS04045FS	SS0406F	SS0811R-OH	SS0806F-OH (Through hole)	SS0806F
	M6 Screw		Wrench		
	⑥		for ①②	for ③④⑤	for ⑥
	SS0605SC		LW-2	LW-4×104	LW-3

● : Stock　　💧 : Coolant through

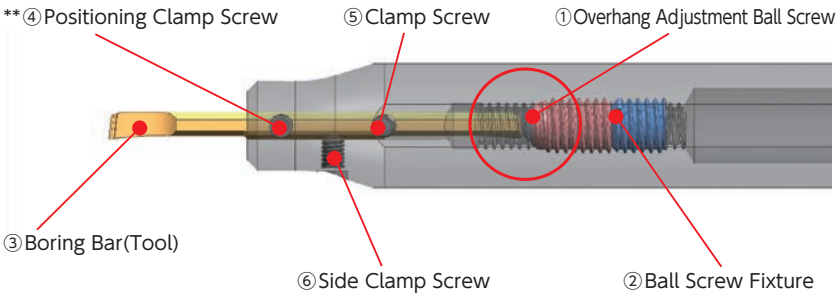
Insert bars ➡V12

STICK DUO HYPER

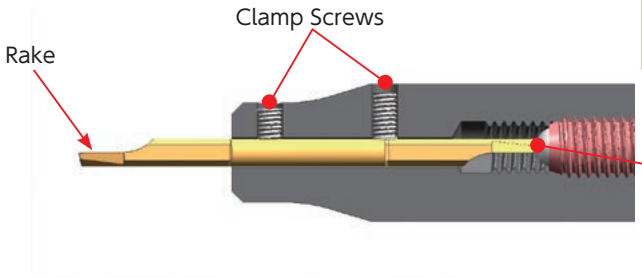
- Sleeves for ID Boring with Adjustable Overhang Mechanism -



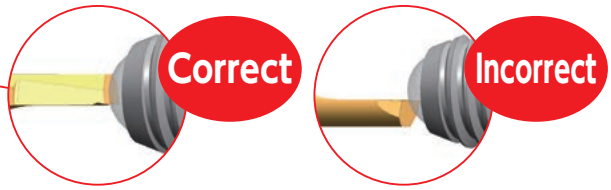
■Can Index boring bars like inserts

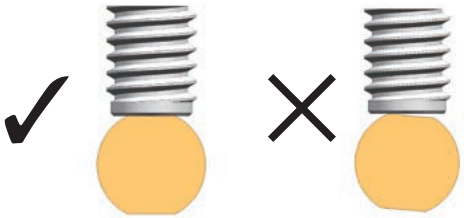


■Installation Procedure for STICK DUO Hyper



Caution: Improper installation dramatically increases the chance of chipping cutting edge

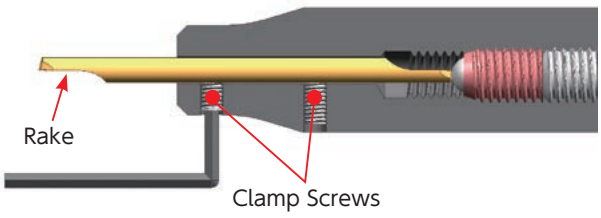




Improper clamping of boring bar causes unstable centerline height and offset

①Position the overhang adjustment ball screw to determine overhang amount
②Slide the ball screw fixture to secure the ball screw location
③Insert a boring bar (tool)
Note: Make sure to insert the boring bar correctly so that the rake face is toward the side where the clamp screws are located
④Secure the boring bar by tightening the positioning clamp screw ▶Recommended Clamping Torque:17.7 lb in
** Make sure to clamp the boring bar so that the flat surface of the bar makes proper contact with clamp screws
⑤Secure the boring bar by tightening the remaining clamp screws ▶Recommended Clamping Torque:17.7 lb in
⑥Even if 4 and 5 cannot be performed due to tool clearance and layout, the tool can be used by only securing the side clamp screw
Once the initial setup is complete, repeat the above procedures 3 thru 5 for each index

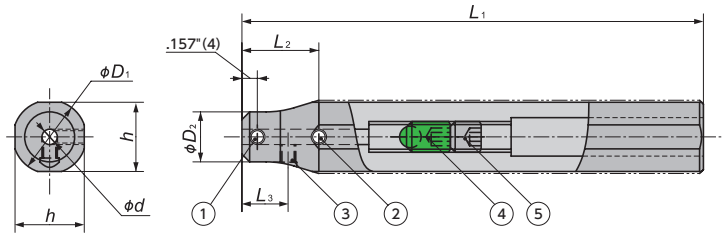
■When the tool is installed upside down



Toolholder must be installed so that clamp screws and rake of the tool face toward the same side

STICK DUO HYPER

HY-NBH



Please refer to φd to find correct-size inserts (bars)

Item Number	Stock	φd (Inch)	φd (mm)	φD1 (Inch)	φD1 (mm)	φD2 (mm)	h (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Clamp Screws ①	②	③
HY-NBH02016H	○	.079	2.0	.630	16	11	15	100	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH02516H	○	.098	2.5	.630	16	11.5	15	100	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03016H	○	.118	3.0	.630	16	12	15	100	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03516H	○	.138	3.5	.630	16	12.5	15	100	20	12	SS04045FS	SS0404F	SS0404F
HY-NBH04016H	○	.157	4.0	.630	16	13	15	100	20	12	SS04045FS	SS0404F	SS0404F
HY-NBH05016H	○	.197	5.0	.630	16	14	15	100	20	12	SS04045FS	SS0404F	SS0404F
HY-NBH02019K	●	.079	2.0	3/4	19.05	11	18	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH02519K	●	.098	2.5	3/4	19.05	11.5	18	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03019K	●	.118	3.0	3/4	19.05	12	18	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03519K	●	.138	3.5	3/4	19.05	12.5	18	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH04019K	●	.157	4.0	3/4	19.05	13	18	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH05019K	●	.197	5.0	3/4	19.05	14	18	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH02020K	○	.079	2.0	.787	20	11	19	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH02520K	○	.098	2.5	.787	20	11.5	19	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03020K	○	.118	3.0	.787	20	12	19	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03520K	○	.138	3.5	.787	20	12.5	19	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH04020K	○	.157	4.0	.787	20	13	19	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH05020K	○	.197	5.0	.787	20	14	19	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH02022K	●	.079	2.0	.866	22	11	21	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH02522K	●	.098	2.5	.866	22	11.5	21	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03022K	●	.118	3.0	.866	22	12	21	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03522K	●	.138	3.5	.866	22	12.5	21	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH04022K	●	.157	4.0	.866	22	13	21	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH05022K	●	.197	5.0	.866	22	14	21	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH02025K-MET	○	.079	2.0	.984	25	11	24	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH02525K-MET	○	.098	2.5	.984	25	11.5	24	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03025K-MET	○	.118	3.0	.984	25	12	24	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03525K-MET	○	.138	3.5	.984	25	12.5	24	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH04025K-MET	○	.157	4.0	.984	25	13	24	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH05025K-MET	○	.197	5.0	.984	25	14	24	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH02025K	●	.079	2.0	1	25.4	11	24	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH02525K	●	.098	2.5	1	25.4	11.5	24	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03025K	●	.118	3.0	1	25.4	12	24	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03525K	●	.138	3.5	1	25.4	12.5	24	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH04025K	●	.157	4.0	1	25.4	13	24	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH05025K	●	.197	5.0	1	25.4	14	24	125	20	12	SS04045FS	SS0406F	SS0404F

Spare Parts

Item Number	Overhang Adjustment ④	Overhang Adjustment ⑤	Wrench for ①②③	Wrench for ④⑤
HY-NBH ... K	SS0812R	SS0808F	LW-2	LW-4×104

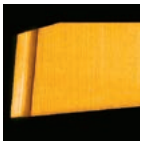
● : Stock　　○ : 1-2 week delivery

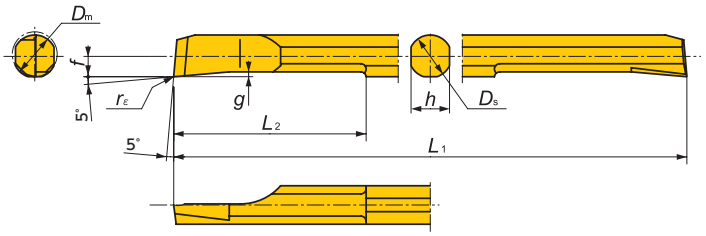
Insert bars ➡V12

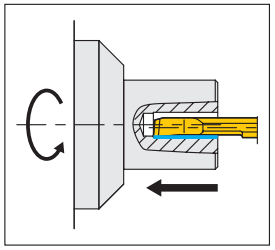
Bars for STICK DUO SPLASH / STICK DUO HYPER

SHFS-S type (for ID Boring)

Minimum Bore Diameter .087" (2.2㎜)

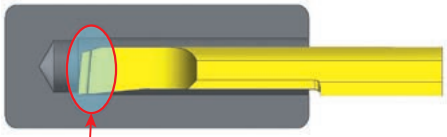






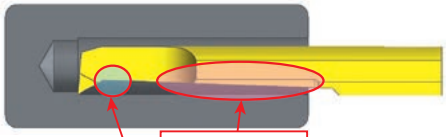
Item Number	Ds (Inch)	Ds (㎜)	Min Bore Dia. Dm (Inch)	Min Bore Dia. Dm (㎜)	L1 (㎜)	L2 (㎜)	f (㎜)	h (㎜)	g (㎜)	rε (Inch)	rε (㎜)	Chipbreaker	Coated Carbide TM4
SHFS020R005S	.079	2	.087	2.2	50	10	0.9	1.8	0.25	.002	0.05	Type S	●
SHFS025R005S	.098	2.5	.106	2.7	50	12.5	1.15	2.3	0.30	.002	0.05	Type S	●
SHFS025R015S	.098	2.5	.106	2.7	50	12.5	1.15	2.3	0.30	.006	0.15	Type S	●
SHFS030R005S	.118	3	.126	3.2	50	15	1.4	2.7	0.40	.002	0.05	Type S	●
SHFS030R015S	.118	3	.126	3.2	50	15	1.4	2.7	0.40	.006	0.15	Type S	●
SHFS035R005S	.138	3.5	.146	3.7	60	17.5	1.65	3.2	0.40	.002	0.05	Type S	●
SHFS035R015S	.138	3.5	.146	3.7	60	17.5	1.65	3.2	0.40	.006	0.15	Type S	●
SHFS040R005S	.157	4	.165	4.2	60	20	1.9	3.6	0.45	.002	0.05	Type S	●
SHFS040R015S	.157	4	.165	4.2	60	20	1.9	3.6	0.45	.006	0.15	Type S	●
SHFS050R005S	.197	5	.205	5.2	70	25	2.4	4.5	0.50	.002	0.05	Type S	●
SHFS050R015S	.197	5	.205	5.2	70	25	2.4	4.5	0.50	.006	0.15	Type S	●

S.FS-S type



Chipbreaker for sharp cutting

S.FB-F type



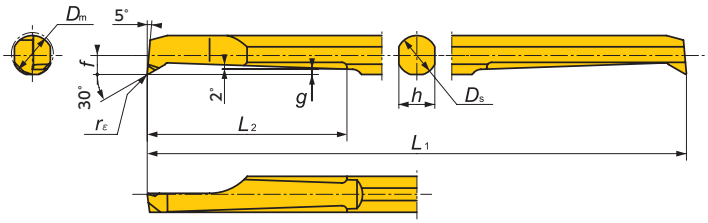
Back taper

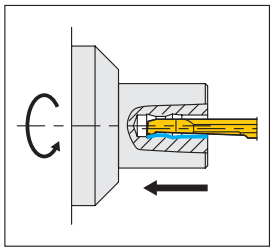
Wide area of chippocket

SHFB-F type (for ID Boring)

Minimum Bore Diameter .087" (2.2㎜)





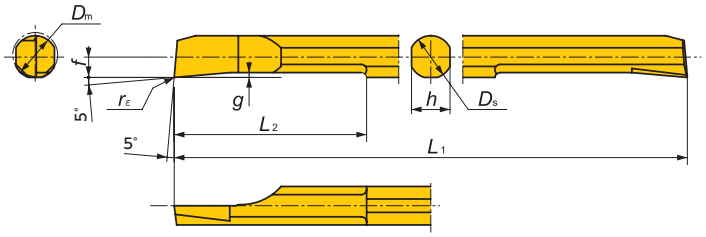


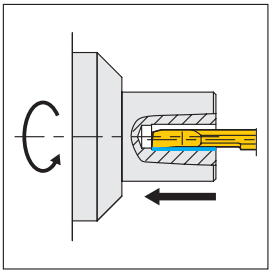
Evacuate chips backward

Item Number	Ds (Inch)	Ds (㎜)	Min Bore Dia. Dm (Inch)	Min Bore Dia. Dm (㎜)	L1 (㎜)	L2 (㎜)	f (㎜)	h (㎜)	g (㎜)	rε (Inch)	rε (㎜)	Chipbreaker	Coated Carbide TM4
SHFB020R005F	.087	2	.087	2.2	50	8	0.95	1.8	0.25	.002	0.05	Type F	●
SHFB025R005F	.098	2.5	.106	2.7	50	12.5	1.2	2.3	0.30	.002	0.05	Type F	●
SHFB025R015F	.098	2.5	.106	2.7	50	12.5	1.2	2.3	0.30	.006	0.15	Type F	●
SHFB030R005F	.118	3	.126	3.2	50	15	1.4	2.7	0.45	.002	0.05	Type F	●
SHFB030R015F	.118	3	.126	3.2	50	15	1.4	2.7	0.45	.006	0.15	Type F	●
SHFB035R005F	.138	3.5	.146	3.7	60	17.5	1.65	3.2	0.50	.002	0.05	Type F	●
SHFB035R015F	.138	3.5	.146	3.7	60	17.5	1.65	3.2	0.50	.006	0.15	Type F	●
SHFB040R005F	.157	4	.165	4.2	60	20	1.9	3.6	0.50	.002	0.05	Type F	●
SHFB040R015F	.157	4	.165	4.2	60	20	1.9	3.6	0.50	.006	0.15	Type F	●
SHFB050R005F	.197	5	.205	5.2	70	25	2.4	4.5	0.70	.002	0.05	Type F	●
SHFB050R015F	.197	5	.205	5.2	70	25	2.4	4.5	0.70	.006	0.15	Type F	●

SHFS-H type (for ID Boring) Minimum Bore Diameter .087" (2.2㎜)



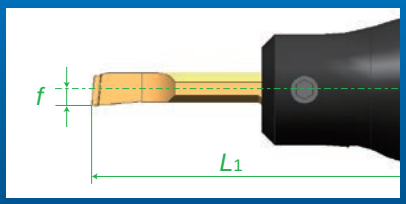




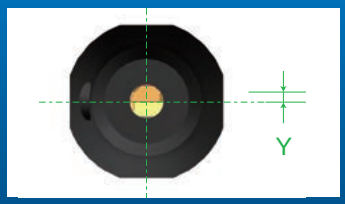
Mirror finish

Item Number	Ds (Inch)	Ds (㎜)	Min Bore Dia. Dm (Inch)	Min Bore Dia. Dm (㎜)	L1 (㎜)	L2 (㎜)	f (㎜)	h (㎜)	g (㎜)	rε (Inch)	rε (㎜)	Chipbreaker	Coated Carbide TM4
SHFS020R005H Ⓜ	.079	2	**.087**	**2.2**	50	10	0.9	1.8	0.25	.002	0.05	None	●
SHFS025R005H Ⓜ	.098	2.5	**.106**	**2.7**	50	12.5	1.15	2.3	0.30	.002	0.05	None	●
SHFS025R015H Ⓜ	.098	2.5	**.106**	**2.7**	50	12.5	1.15	2.3	0.30	.006	0.15	None	●
SHFS030R005H Ⓜ	.118	3	**.126**	**3.2**	50	15	1.4	2.7	0.40	.002	0.05	None	●
SHFS030R015H Ⓜ	.118	3	**.126**	**3.2**	50	15	1.4	2.7	0.40	.006	0.15	None	●
SHFS035R005H Ⓜ	.138	3.5	**.146**	**3.7**	60	17.5	1.65	3.2	0.40	.002	0.05	None	●
SHFS035R015H Ⓜ	.138	3.5	**.146**	**3.7**	60	17.5	1.65	3.2	0.40	.006	0.15	None	●
SHFS040R005H Ⓜ	.157	4	**.165**	**4.2**	60	20	1.9	3.6	0.45	.002	0.05	None	●
SHFS040R015H Ⓜ	.157	4	**.165**	**4.2**	60	20	1.9	3.6	0.45	.006	0.15	None	●
SHFS050R005H Ⓜ	.197	5	**.205**	**5.2**	70	25	2.4	4.5	0.50	.002	0.05	None	●
SHFS050R015H Ⓜ	.197	5	**.205**	**5.2**	70	25	2.4	4.5	0.50	.006	0.15	None	●

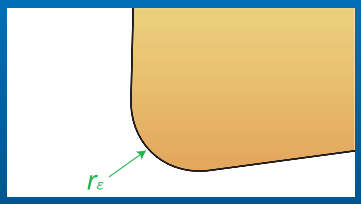
Tolerance of SHFS-S/SHFB-F/SHFS-H bars



Offset f : ±.0006"
Tool Length L_1 : ±.0008"

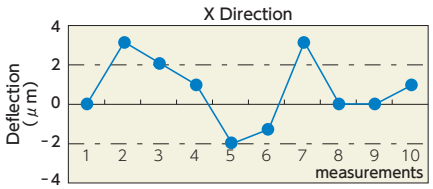


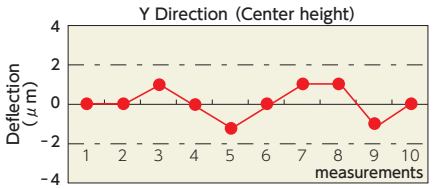
Centerline Y : +.002"/−.000"

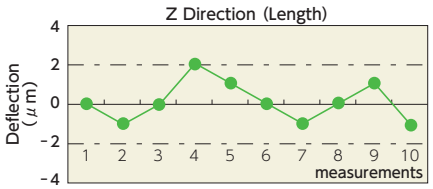


Corner r ε : ±.0006"

Repeatability of (STICK DUO SPLASH / STICK DUO Hyper) with (SHFS / SHFB) bars







● : Stock ○ : 1-2 week delivery Ⓜ : Mirror finish

Sleeves ➡V9 • 11 Cutting condition ➡V4

STICK DUO - Sleeves for ID machining -

NBH

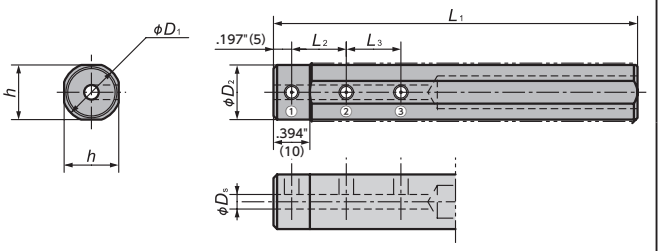


Figure-1

NBH

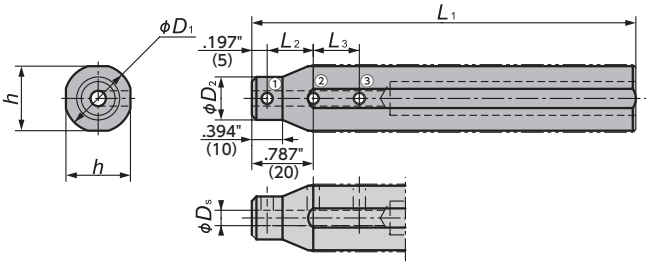


Figure-2

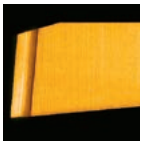
Item number	Figure	Stock	ϕDs (Inch)	ϕDs (mm)	ϕD1 (Inch)	ϕD1 (mm)	ϕD2 (mm)	h (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Clamp screw ①	Clamp screw ②	Clamp screw ③	Wrench
NBH02015H	1	○	.079	2.0	5/8		15	15	100	10	—	SS0406F	SS0406F	—	LW-2
NBH02515H	1	○	.098	2.5	5/8		15	15	100	10	—	SS0406F	SS0406F	—	LW-2
NBH03015H	1	○	.118	3.0	5/8		15	15	100	10	10	SS0404F	SS0404F	SS0404F	LW-2
NBH03515H	1	○	.138	3.5	5/8		15	15	100	10	10	SS0404F	SS0404F	SS0404F	LW-2
NBH04015H	1	○	.157	4.0	5/8		15	15	100	15	15	SS0404F	SS0404F	SS0404F	LW-2
NBH04515H	1	○	.177	4.5	5/8		15	15	100	15	15	SS0404F	SS0404F	SS0404F	LW-2
NBH05015H	1	○	.197	5.0	5/8		15	15	100	15	15	SS0404F	SS0404F	SS0404F	LW-2
NBH06015H	1	○	.236	6.0	5/8		15	15	100	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH08015H	1	○	.315	8.0	5/8		15	15	100	20	20	SS0403F	SS0403F	SS0403F	LW-2
NBH02016H	1	○	.079	2.0	.630	16	15	15	100	10	—	SS0406F	SS0406F	—	LW-2
NBH02516H	1	○	.098	2.5	.630	16	15	15	100	10	—	SS0406F	SS0406F	—	LW-2
NBH03016H	1	○	.118	3.0	.630	16	15	15	100	10	10	SS0404F	SS0404F	SS0404F	LW-2
NBH03516H	1	○	.138	3.5	.630	16	15	15	100	10	10	SS0404F	SS0404F	SS0404F	LW-2
NBH04016H	1	○	.157	4.0	.630	16	15	15	100	15	15	SS0404F	SS0404F	SS0404F	LW-2
NBH04516H	1	○	.177	4.5	.630	16	15	15	100	15	15	SS0404F	SS0404F	SS0404F	LW-2
NBH05016H	1	○	.197	5.0	.630	16	15	15	100	15	15	SS0404F	SS0404F	SS0404F	LW-2
NBH06016H	1	●	.236	6.0	.630	16	15	15	100	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH07016H	1	○	.276	7.0	.630	16	15	15	100	20	20	SS0403F	SS0404F	SS0404F	LW-2
NBH08016H	1	●	.315	8.0	.630	16	15	15	100	20	20	SS0403F	SS0403F	SS0403F	LW-2
NBH02019K	1	○	.079	2.0	3/4		18	18	125	10	—	SS0408F	SS0408F	—	LW-2
NBH02519K	1	○	.098	2.5	3/4		18	18	125	10	—	SS0408F	SS0408F	—	LW-2
NBH03019K	1	○	.118	3.0	3/4		18	18	125	10	10	SS0406F	SS0406F	SS0406F	LW-2
NBH03519K	1	○	.138	3.5	3/4		18	18	125	10	10	SS0406F	SS0406F	SS0406F	LW-2
NBH04019K	1	○	.157	4.0	3/4		18	18	125	15	15	SS0406F	SS0406F	SS0406F	LW-2
NBH04519K	1	○	.177	4.5	3/4		18	18	125	15	15	SS0406F	SS0406F	SS0406F	LW-2
NBH05019K	1	○	.197	5.0	3/4		18	18	125	15	15	SS0406F	SS0406F	SS0406F	LW-2
NBH06019K	1	●	.236	6.0	3/4		18	18	125	20	20	SS0406F	SS0406F	SS0406F	LW-2
NBH07019K	1	○	.276	7.0	3/4		18	18	125	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH08019K	1	●	.315	8.0	3/4		18	18	125	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH10019K	1	○	.394	10.0	3/4		18	18	125	20	20	SS0403F	SS0404F	SS0404F	LW-2
NBH02020K	2	○	.079	2.0	.787	20	11	19	125	10	—	SS0404F	SS0404F	—	LW-2
NBH02520K	2	○	.098	2.5	.787	20	11	19	125	10	—	SS0404F	SS0404F	—	LW-2
NBH03020K	2	○	.118	3.0	.787	20	12	19	125	10	10	SS0404F	SS0404F	SS0406F	LW-2
NBH03520K	2	○	.138	3.5	.787	20	12	19	125	10	10	SS0404F	SS0404F	SS0406F	LW-2
NBH04020K	2	○	.157	4.0	.787	20	13	19	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH04520K	2	○	.177	4.5	.787	20	13	19	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH05020K	2	○	.197	5.0	.787	20	14	19	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH06020K	2	●	.236	6.0	.787	20	15	19	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH07020K	2	○	.276	7.0	.787	20	16	19	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH08020K	2	●	.315	8.0	.787	20	17	19	125	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH10020K	2	○	.394	10.0	.787	20	19	19	125	20	20	SS0404F	SS0404F	SS0404F	LW-2

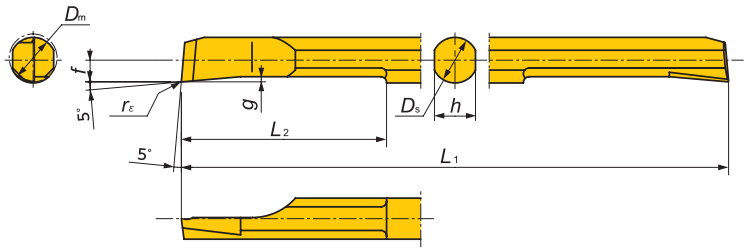
Item number	Figure	Stock	ϕD_s (Inch)	ϕD_s (mm)	ϕD_1 (Inch)	ϕD_1 (mm)	ϕD_2 (mm)	h_1 (mm)	L_1 (mm)	L_2 (mm)	L_3 (mm)	Clamp screw ①	Clamp screw ②	Clamp screw ③	Wrench
NBH02022K	2	○	.079	2.0	.866	22	11	21	125	10	—	SS0404F	SS0406F	—	LW-2
NBH02522K	2	○	.098	2.5	.866	22	11	21	125	10	—	SS0404F	SS0406F	—	LW-2
NBH03022K	2	○	.118	3.0	.866	22	12	21	125	10	10	SS0404F	SS0406F	SS0408F	LW-2
NBH03522K	2	○	.138	3.5	.866	22	12	21	125	10	10	SS0404F	SS0406F	SS0406F	LW-2
NBH04022K	2	○	.157	4.0	.866	22	13	21	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH04522K	2	○	.177	4.5	.866	22	13	21	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH05022K	2	○	.197	5.0	.866	22	14	21	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH06022K	2	●	.236	6.0	.866	22	15	21	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH07022K	2	○	.276	7.0	.866	22	16	21	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH08022K	2	●	.315	8.0	.866	22	17	21	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH10022K	2	○	.394	10.0	.866	22	19	21	125	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH12022K	2	○	.472	12.0	.866	22	21	21	125	25	25	SS0404F	SS0404F	SS0404F	LW-2
NBH02023K	2	○	.079	2.0	.906	23	11	21	125	10	—	SS0404F	SS0406F	—	LW-2
NBH02523K	2	○	.098	2.5	.906	23	11	21	125	10	—	SS0404F	SS0406F	—	LW-2
NBH03023K	2	○	.118	3.0	.906	23	12	21	125	10	10	SS0404F	SS0406F	SS0408F	LW-2
NBH03523K	2	○	.138	3.5	.906	23	12	21	125	10	10	SS0404F	SS0406F	SS0406F	LW-2
NBH04023K	2	○	.157	4.0	.906	23	13	21	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH04523K	2	○	.177	4.5	.906	23	13	21	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH05023K	2	○	.197	5.0	.906	23	14	21	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH06023K	2	○	.236	6.0	.906	23	15	21	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH08023K	2	○	.315	8.0	.906	23	17	21	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH10023K	2	○	.394	10.0	.906	23	19	21	125	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH12023K	2	○	.472	12.0	.906	23	21	21	125	25	25	SS0404F	SS0404F	SS0404F	LW-2
NBH02025K-MET	2	○	.079	2.0	.984	25	11	24	125	10	—	SS0404F	SS0406F	—	LW-2
NBH02525K-MET	2	○	.098	2.5	.984	25	11	24	125	10	—	SS0404F	SS0406F	—	LW-2
NBH03025K-MET	2	○	.118	3.0	.984	25	12	24	125	10	10	SS0404F	SS0406F	SS0408F	LW-2
NBH03525K-MET	2	○	.138	3.5	.984	25	12	24	125	10	10	SS0404F	SS0406F	SS0408F	LW-2
NBH04025K-MET	2	○	.157	4.0	.984	25	13	24	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH04525K-MET	2	○	.177	4.5	.984	25	13	24	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH05025K-MET	2	○	.197	5.0	.984	25	14	24	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH06025K-MET	2	●	.236	6.0	.984	25	15	24	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH07025K-MET	2	○	.276	7.0	.984	25	16	24	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH08025K-MET	2	●	.315	8.0	.984	25	17	24	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH10025K-MET	2	○	.394	10.0	.984	25	19	24	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH12025K-MET	2	○	.472	12.0	.984	25	21	24	125	25	25	SS0404F	SS0404F	SS0404F	LW-2
NBH02025K	2	○	.079	2.0	1	25.4	11	24	125	10	—	SS0404F	SS0406F	—	LW-2
NBH02525K	2	○	.098	2.5	1	25.4	11	24	125	10	—	SS0404F	SS0406F	—	LW-2
NBH03025K	2	○	.118	3.0	1	25.4	12	24	125	10	10	SS0404F	SS0406F	SS0408F	LW-2
NBH03525K	2	○	.138	3.5	1	25.4	12	24	125	10	10	SS0404F	SS0406F	SS0408F	LW-2
NBH04025K	2	○	.157	4.0	1	25.4	13	24	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH04525K	2	○	.177	4.5	1	25.4	13	24	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH05025K	2	○	.197	5.0	1	25.4	14	24	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH06025K	2	●	.236	6.0	1	25.4	15	24	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH07025K	2	○	.276	7.0	1	25.4	16	24	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH08025K	2	●	.315	8.0	1	25.4	17	24	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH10025K	2	○	.394	10.0	1	25.4	19	24	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH12025K	2	○	.472	12.0	1	25.4	21	24	125	25	25	SS0404F	SS0404F	SS0404F	LW-2
NBH04532K	2	○	.177	4.5	1.260	32	13	30	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH05032K	2	○	.197	5.0	1.260	32	14	30	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH06032K	2	○	.236	6.0	1.260	32	15	30	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH07032K	2	○	.276	7.0	1.260	32	16	30	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH08032K	2	○	.315	8.0	1.260	32	17	30	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH10032K	2	○	.394	10.0	1.260	32	19	30	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH12032K	2	○	.472	12.0	1.260	32	21	30	125	25	25	SS0404F	SS0406F	SS0406F	LW-2
NBH14032K	2	○	.551	14.0	1.260	32	23	30	125	25	25	SS0504	SS0506	SS0506	LW-2.5
NBH16032K	2	○	.630	16.0	1.260	32	25	30	125	25	25	SS0504	SS0506	SS0506	LW-2.5

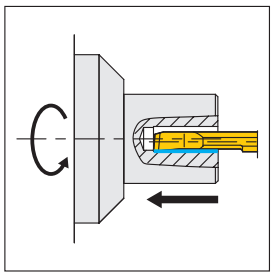
○ : 1-2 week delivery

Insert bars ➔V16

SBFS-S type (for ID Boring) Minimum Bore Diameter .087" (2.2㎜)



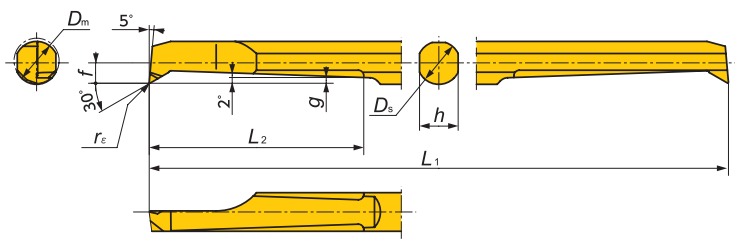


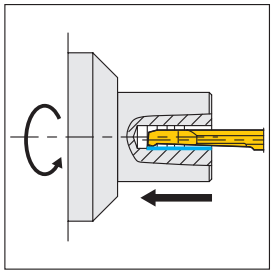


Item Number	Ds (Inch)	Ds (㎜)	Min Bore Dia. Dm (Inch)	Min Bore Dia. Dm (㎜)	L1 (㎜)	L2 (㎜)	f (㎜)	h (㎜)	g (㎜)	rε (Inch)	rε (㎜)	Chipbreaker	Coated Carbide DT4	Coated Carbide ZM3
SBFS020R005S	.079	2	.087	2.2	50	10	0.9	1.8	0.25	.002	0.05	Type S	○	○
SBFS025R005S	.098	2.5	.106	2.7	50	12.5	1.15	2.3	0.30	.002	0.05	Type S	○	○
SBFS025R015S	.098	2.5	.106	2.7	50	12.5	1.15	2.3	0.30	.006	0.15	Type S	○	○
SBFS030R005S	.118	3	.126	3.2	50	15	1.4	2.7	0.40	.002	0.05	Type S	○	○
SBFS030R015S	.118	3	.126	3.2	50	15	1.4	2.7	0.40	.006	0.15	Type S	○	○
SBFS035R005S	.138	3.5	.146	3.7	60	17.5	1.65	3.2	0.40	.002	0.05	Type S	○	○
SBFS035R015S	.138	3.5	.146	3.7	60	17.5	1.65	3.2	0.40	.006	0.15	Type S	○	○
SBFS040R005S	.157	4	.165	4.2	60	20	1.9	3.6	0.45	.002	0.05	Type S	○	○
SBFS040R015S	.157	4	.165	4.2	60	20	1.9	3.6	0.45	.006	0.15	Type S	○	○
SBFS050R005S	.197	5	.205	5.2	70	25	2.4	4.5	0.50	.002	0.05	Type S	○	○
SBFS050R015S	.197	5	.205	5.2	70	25	2.4	4.5	0.50	.006	0.15	Type S	○	○
SBFS060R005S	.236	6	.244	6.2	80	30	2.9	5.4	0.60	.002	0.05	Type S	○	○
SBFS060R015S	.236	6	.244	6.2	80	30	2.9	5.4	0.60	.006	0.15	Type S	○	○

SBFB-F type (for ID Boring) Minimum Bore Diameter .087" (2.2㎜)





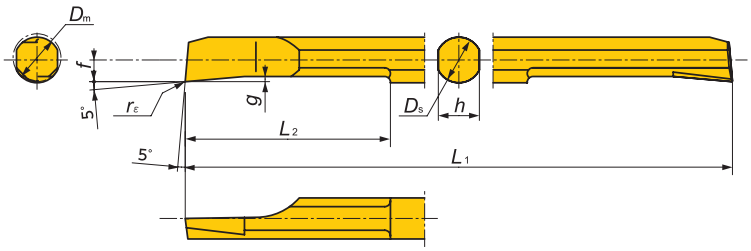


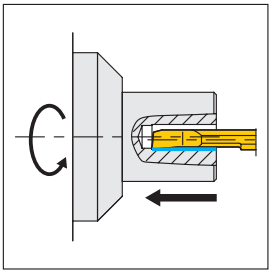
Evacuate chips backward

Item Number	Ds (Inch)	Ds (㎜)	Min Bore Dia. Dm (Inch)	Min Bore Dia. Dm (㎜)	L1 (㎜)	L2 (㎜)	f (㎜)	h (㎜)	g (㎜)	rε (Inch)	rε (㎜)	Chipbreaker	Coated Carbide DT4	Coated Carbide ZM3
SBFB020R005F	.087	2	.087	2.2	50	8	0.95	1.8	0.25	.002	0.05	Type F	○	○
SBFB025R005F	.098	2.5	.106	2.7	50	12.5	1.2	2.3	0.30	.002	0.05	Type F	○	○
SBFB025R015F	.098	2.5	.106	2.7	50	12.5	1.2	2.3	0.30	.006	0.15	Type F	○	○
SBFB030R005F	.118	3	.126	3.2	50	15	1.4	2.7	0.45	.002	0.05	Type F	○	○
SBFB030R015F	.118	3	.126	3.2	50	15	1.4	2.7	0.45	.006	0.15	Type F	○	○
SBFB035R005F	.138	3.5	.146	3.7	60	17.5	1.65	3.2	0.50	.002	0.05	Type F	○	○
SBFB035R015F	.138	3.5	.146	3.7	60	17.5	1.65	3.2	0.50	.006	0.15	Type F	○	○
SBFB040R005F	.157	4	.165	4.2	60	20	1.9	3.6	0.50	.002	0.05	Type F	○	○
SBFB040R015F	.157	4	.165	4.2	60	20	1.9	3.6	0.50	.006	0.15	Type F	○	○
SBFB050R005F	.197	5	.205	5.2	70	25	2.4	4.5	0.70	.002	0.05	Type F	○	○
SBFB050R015F	.197	5	.205	5.2	70	25	2.4	4.5	0.70	.006	0.15	Type F	○	○
SBFB060R005F	.236	6	.244	6.2	80	30	2.9	5.4	0.90	.002	0.05	Type F	○	○
SBFB060R015F	.236	6	.244	6.2	80	30	2.9	5.4	0.90	.006	0.15	Type F	○	○

SBFS-H type (for ID Boring) Minimum Bore Diameter .087" (2.2㎜)







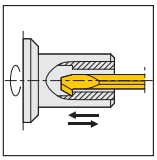
Mirror finish

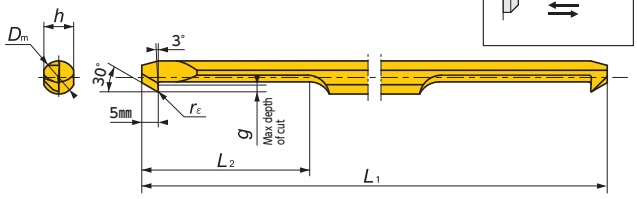
Item Number	Ds (Inch)	Ds (㎜)	Min Bore Dia. Dm (Inch)	Min Bore Dia. Dm (㎜)	L1 (㎜)	L2 (㎜)	f (㎜)	h (㎜)	g (㎜)	rε (Inch)	rε (㎜)	Chipbreaker	Coated Carbide DT4	Coated Carbide ZM3
SBFS020R005H Ⓜ	.079	2	.087	2.2	50	10	0.9	1.8	0.25	.002	0.05	None		○
SBFS025R005H Ⓜ	.098	2.5	.106	2.7	50	12.5	1.15	2.3	0.30	.002	0.05	None		○
SBFS025R015H Ⓜ	.098	2.5	.106	2.7	50	12.5	1.15	2.3	0.30	.006	0.15	None		○
SBFS030R005H Ⓜ	.118	3	.126	3.2	50	15	1.4	2.7	0.40	.002	0.05	None		○
SBFS030R015H Ⓜ	.118	3	.126	3.2	50	15	1.4	2.7	0.40	.006	0.15	None		○
SBFS035R005H Ⓜ	.138	3.5	.146	3.7	60	17.5	1.65	3.2	0.40	.002	0.05	None		○
SBFS035R015H Ⓜ	.138	3.5	.146	3.7	60	17.5	1.65	3.2	0.40	.006	0.15	None		○
SBFS040R005H Ⓜ	.157	4	.165	4.2	60	20	1.9	3.6	0.45	.002	0.05	None		○
SBFS040R015H Ⓜ	.157	4	.165	4.2	60	20	1.9	3.6	0.45	.006	0.15	None		○
SBFS050R005H Ⓜ	.197	5	.205	5.2	70	25	2.4	4.5	0.50	.002	0.05	None		○
SBFS050R015H Ⓜ	.197	5	.205	5.2	70	25	2.4	4.5	0.50	.006	0.15	None		○
SBFS060R005H Ⓜ	.236	6	.244	6.2	80	30	2.9	5.4	0.60	.002	0.05	None		○
SBFS060R015H Ⓜ	.236	6	.244	6.2	80	30	2.9	5.4	0.60	.006	0.15	None		○
SBFS080R005H Ⓜ	.315	8	.323	8.2	80	30	3.9	7.3	0.80	.002	0.05	None		○
SBFS080R015H Ⓜ	.315	8	.323	8.2	80	30	3.9	7.3	0.80	.006	0.15	None		○

SBB Series ID Back turning

SBB-S type (for ID Back turning)

Minimum Bore Diameter .118" (3.0㎜)

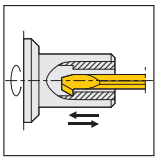


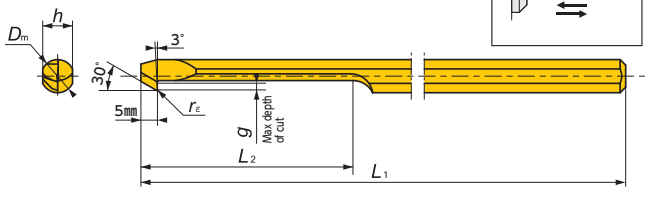


Short type
two-sided

SBB type (for ID Back turning)

Minimum Bore Diameter .118" (3.0㎜)





Long type
single-sided

	Item Number	Ds (Inch)	Ds (㎜)	Min Bore Dia. Dm (Inch)	Min Bore Dia. Dm (㎜)	L1 (㎜)	L2 (㎜)	f (㎜)	h (㎜)	g (㎜)	rε (Inch)	rε (㎜)	Chipbreaker	No. of edge	Coated Carbide ZM3
Short Type	SBB030RB005-S	.118	3	.118	3	50	15	1.3	2.7	0.5	.002	0.05	Yes	2	○
	SBB030RB010-S	.118	3	.118	3	50	15	1.3	2.7	0.5	.004	0.1	Yes	2	○
	SBB040RB005-S	.157	4	.157	4	60	18	1.8	3.6	0.8	.002	0.05	Yes	2	○
	SBB040RB015-S	.157	4	.157	4	60	18	1.8	3.6	0.8	.006	0.15	Yes	2	○
Long Type	SBB030RB005	.118	3	.118	3	50	19	1.3	2.7	0.5	.002	0.05	Yes	1	○
	SBB030RB010	.118	3	.118	3	50	19	1.3	2.7	0.5	.004	0.1	Yes	1	○
	SBB040RB005	.157	4	.157	4	60	24	1.8	3.6	0.8	.002	0.05	Yes	1	○
	SBB040RB015	.157	4	.157	4	60	24	1.8	3.6	0.8	.006	0.15	Yes	1	○

○ : 1-2 week delivery Ⓜ : Mirror finish

Sleeves ➡V9 • 11 • 14 Cutting condition ➡V4

SBG / SFG Series ID Grooving

SBG (for ID Grooving)

Minimum Bore Diameter .118" (3.0mm)

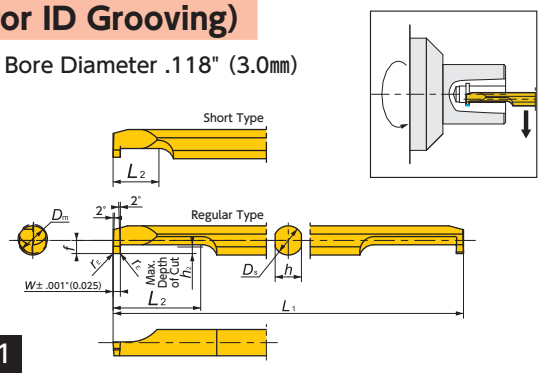


Figure-1

SFG (for ID Face Grooving)

Minimum Bore Diameter .236" (6.0mm)

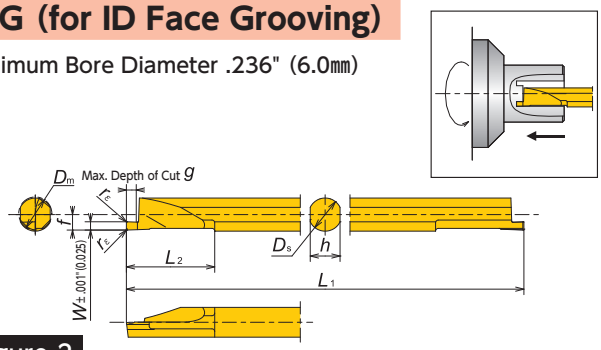


Figure-2

SBG

	Item Number	Groove width W (Inch)	Groove width W (mm)	Min Bore Dia. Dm (Inch)	Min Bore Dia. Dm (mm)	Ds (Inch)	Ds (mm)	L1 (mm)	L2 (mm)	f (mm)	h (mm)	h2 (mm)	rε (Inch)	rε (mm)	Chip-breaker	Coated Carbide ZM3
Regular type	SBG030050RB	.020	0.50	.118	3	.118	3	50	9	1.3	2.7	0.8	.002	0.05	Yes	●
	SBG030075RB	.030	0.75	.118	3	.118	3	50	9	1.3	2.7	0.8	.002	0.05	Yes	●
	SBG030100RB	.039	1.00	.118	3	.118	3	50	9	1.3	2.7	0.8	.002	0.05	Yes	●
	SBG040050RB	.020	0.50	.157	4	.157	4	60	12	1.8	3.6	1.0	.002	0.05	Yes	●
	SBG040075RB	.030	0.75	.157	4	.157	4	60	12	1.8	3.6	1.0	.002	0.05	Yes	●
	SBG040100RB	.039	1.00	.157	4	.157	4	60	12	1.8	3.6	1.0	.002	0.05	Yes	●
	SBG050050RB	.020	0.50	.197	5	.197	5	70	20	2.3	4.5	1.2	.002	0.05	Yes	●
	SBG050100RB	.039	1.00	.197	5	.197	5	70	20	2.3	4.5	1.2	.002	0.05	Yes	●
	SBG050150RB	.059	1.50	.197	5	.197	5	70	20	2.3	4.5	1.2	.002	0.05	Yes	●
	SBG060100RB	.039	1.00	.236	6	.236	6	80	20	2.8	5.4	1.8	.002	0.05	Yes	●
	SBG060150RB	.059	1.50	.236	6	.236	6	80	20	2.8	5.4	1.8	.002	0.05	Yes	●
	SBG060200RB	.079	2.00	.236	6	.236	6	80	20	2.8	5.4	1.8	.002	0.05	Yes	●
	SBG080100RB	.039	1.00	.315	8	.315	8	80	20	3.8	7.3	2.2	.002	0.05	Yes	●
	SBG080150RB	.059	1.50	.315	8	.315	8	80	20	3.8	7.3	2.2	.002	0.05	Yes	●
	SBG080200RB	.079	2.00	.315	8	.315	8	80	20	3.8	7.3	2.2	.002	0.05	Yes	●
Short type	SBG030050RB-S	.020	0.50	.118	3	.118	3	50	4.5	1.3	2.7	0.8	.002	0.05	Yes	●
	SBG030075RB-S	.030	0.75	.118	3	.118	3	50	4.5	1.3	2.7	0.8	.002	0.05	Yes	○
	SBG030100RB-S	.039	1.00	.118	3	.118	3	50	4.5	1.3	2.7	0.8	.002	0.05	Yes	○
	SBG030150RB-S	.059	1.50	.118	3	.118	3	50	4.5	1.3	2.7	0.8	.002	0.05	Yes	○
	SBG040050RB-S	.020	0.50	.157	4	.157	4	60	6	1.8	3.6	1.0	.002	0.05	Yes	○
	SBG040075RB-S	.030	0.75	.157	4	.157	4	60	6	1.8	3.6	1.0	.002	0.05	Yes	○
	SBG040100RB-S	.039	1.00	.157	4	.157	4	60	6	1.8	3.6	1.0	.002	0.05	Yes	○
	SBG040150RB-S	.059	1.50	.157	4	.157	4	60	6	1.8	3.6	1.0	.002	0.05	Yes	○
	SBG050050RB-S	.020	0.50	.197	5	.197	5	70	7.5	2.3	4.5	1.2	.002	0.05	Yes	○
	SBG050100RB-S	.039	1.00	.197	5	.197	5	70	7.5	2.3	4.5	1.2	.002	0.05	Yes	○
	SBG050150RB-S	.059	1.50	.197	5	.197	5	70	7.5	2.3	4.5	1.2	.002	0.05	Yes	○
	SBG050200RB-S	.079	2.00	.197	5	.197	5	70	7.5	2.3	4.5	1.2	.002	0.05	Yes	○
	SBG060100RB-S	.039	1.00	.236	6	.236	6	80	7.5	2.8	5.4	1.8	.002	0.05	Yes	○
	SBG060150RB-S	.059	1.50	.236	6	.236	6	80	7.5	2.8	5.4	1.8	.002	0.05	Yes	○
	SBG060200RB-S	.079	2.00	.236	6	.236	6	80	7.5	2.8	5.4	1.8	.002	0.05	Yes	○
	SBG080100RB-S	.039	1.00	.315	8	.315	8	80	8.5	3.8	7.3	2.2	.002	0.05	Yes	○
	SBG080150RB-S	.059	1.50	.315	8	.315	8	80	8.5	3.8	7.3	2.2	.002	0.05	Yes	○
	SBG080200RB-S	.079	2.00	.315	8	.315	8	80	8.5	3.8	7.3	2.2	.002	0.05	Yes	○

SFG

Item Number	Groove width W (Inch)	Groove width W (mm)	Min Bore Dia. Dm (Inch)	Min Bore Dia. Dm (mm)	Ds (Inch)	Ds (mm)	L1 (mm)	L2 (mm)	f (mm)	h (mm)	g (mm)	rε (Inch)	rε (mm)	Chip-breaker	Coated Carbide TM4
SFG060R100B	.039	1.00	.236	6	.236	6	80	16.0	2.8	5.4	1.5	.002	0.05	Yes	○
SFG060R150B	.059	1.50	.236	6	.236	6	80	16.0	2.8	5.4	2.5	.002	0.05	Yes	○
SFG060R200B	.079	2.00	.236	6	.236	6	80	16.0	2.8	5.4	3.0	.002	0.05	Yes	○
SFG080R100B	.039	1.00	.315	8	.315	8	80	16.0	3.8	7.3	1.5	.002	0.05	Yes	○
SFG080R150B	.059	1.50	.315	8	.315	8	80	16.0	3.8	7.3	2.5	.002	0.05	Yes	○
SFG080R200B	.079	2.00	.315	8	.315	8	80	16.0	3.8	7.3	3.0	.002	0.05	Yes	○
SFG080R300B	.118	3.00	.315	8	.315	8	80	16.0	3.8	7.3	3.0	.002	0.05	Yes	○

Sleeves ➡V9 • 11 • 14

BG Series - Toolholders

S-BG (Takes Left-Hand Insert)

Minimum Bore Diameter .394"(10.0㎜)

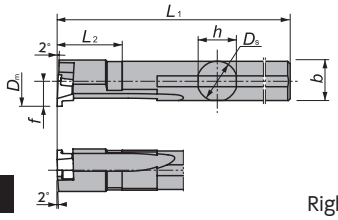


Figure-1

Right-Hand style shown

BG (Takes Left-Hand Insert)

Minimum Bore Diameter .394"(10.0㎜)

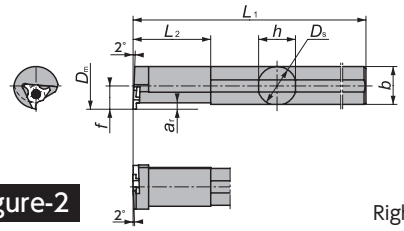


Figure-2

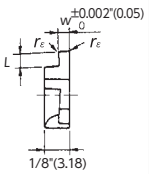
Right-Hand style shown

■S08H-BG / S10K-BG / BG

Gage Insert	Item Number	Figure	Stock R	Stock L	Min. Bore Dia. D_m (Inch)	Min. Bore Dia. D_m (㎜)	Max. Depth Of Cut. a_r (Inch)	Max. Depth Of Cut. a_r (㎜)	D_s (Inch)	D_s (㎜)	h (Inch)	h (㎜)	b (Inch)	b (㎜)	L_1 (Inch)	L_1 (㎜)	f (Inch)	f (㎜)	L_2 (Inch)	L_2 (㎜)	Groove width covered w (Inch)	Groove width covered w (㎜)	Clamp Screw	Wrench
 GTG10	S08H-BG※10D10	1	○		.394	10	.039	1.0	.315	8	.303	7.7	.309	7.85	4.724	120	.197	5.0	.787	20	.020-.079	0.50-2.00	LR-S-2.5×6.8	CLR-15S
	S10K-BG※10D12	1	○		.472	12	.039	1.0	.394	10	.378	9.6	.386	9.8	4.724	120	.236	6.0	.984	25	.020-.079	0.50-2.00	LR-S-2.5×6.8	CLR-15S
GTG10	BG※08-00S	2	○		.394	10	.039	1.0	.315	8	.276	7.0	.295	7.5	4.921	125	.197	5.0	.787	20	.020-.079	0.50-2.00	LR-S-2.5×6.8	CLR-15S
	BG※08-10S	2	○		.394	10	.039	1.0	.315	8	.276	7.0	.295	7.5	4.921	125	.197	5.0	.787	20	.039-.079	1.00-2.00	LR-S-2.5×6.8	CLR-15S
	BG※10-00S	2	○		.472	12	.079	2.0	.394	10	.354	9.0	.374	9.5	5.906	150	.236	6.0	.984	25	.020-.079	0.50-2.00	LR-S-2.5×6.8	CLR-15S
	BG※10-10S	2	○		.472	12	.079	2.0	.394	10	.354	9.0	.374	9.5	5.906	150	.236	6.0	.984	25	.039-.079	1.00-2.00	LR-S-2.5×6.8	CLR-15S
GTG14	BG※12-00S	2	○		.551	14	.079	2.0	.472	12	.433	11.0	.453	11.5	7.087	180	.276	7.0	1.181	30	.039-.079	1.00-2.00	LR-S-3×7.8	RLR-20S
	BG※12-12S	2	○		.551	14	.079	2.0	.472	12	.433	11.0	.453	11.5	7.087	180	.276	7.0	1.181	30	.057-.079	1.45-2.00	LR-S-3×7.8	RLR-20S
	BG※14-00S	2	○		.630	16	.118	3.0	.551	14	.512	13.0	.531	13.5	7.087	180	.315	8.0	1.378	35	.039-.079	1.00-2.00	LR-S-3×7.8	RLR-20S
	BG※14-12S	2	○		.630	16	.118	3.0	.551	14	.512	13.0	.531	13.5	7.087	180	.315	8.0	1.378	35	.057-.079	1.45-2.00	LR-S-3×7.8	RLR-20S
GTG20	BG※16	2	○		.787	20	.118	3.0	.630	16	.591	15.0	.610	15.5	7.874	200	.394	10.0	1.575	40	.059-.079	1.50-2.00	LR-S-3×7.8	RLR-20S
	BG※20	2	○		.984	25	.118	3.0	.787	20	.748	19.0	.768	19.5	7.874	200	.472	12.0	1.575	40	.059-.079	1.50-2.00	LR-S-3×7.8	RLR-20S

BG Series - Inserts

■GTG

Shape	Item Number	Groove width w (Inch)	Groove width w (㎜)	Max. Depth Of Cut. a_r (Inch)	Max. Depth Of Cut. a_r (㎜)	L (Inch)	L (㎜)	r_ε (Inch)	r_ε (㎜)	d (Inch)	d (㎜)	Coated Carbide QM3	Coated Carbide TM4	Coated Carbide ZM3	Coated Cermet C7X
	GTG10050FL005	0.020	0.50	.039	1.0	.047	1.2	.002	0.05	.219	5.56		○		
	GTG10075FL005	0.030	0.75	.039	1.0	.047	1.2	.002	0.05	.219	5.56		○		
	GTG10100FL005	0.039	1.00	.039	1.0	.047	1.2	.002	0.05	.219	5.56		○		
	GTG10150FL005	0.059	1.50	.039	1.0	.047	1.2	.002	0.05	.219	5.56		○		
	GTG10200FL005	0.079	2.00	.039	1.0	.047	1.2	.002	0.05	.219	5.56		○		
	GTG10050FL00	0.020	0.50	.039	1.0	.047	1.2	.002	0.05	.219	5.56			○	
	GTG10065FL00	0.026	0.65	.039	1.0	.047	1.2	.002	0.05	.219	5.56			○	
	GTG10075FL00	0.030	0.75	.039	1.0	.047	1.2	.002	0.05	.219	5.56			○	
	GTG10100FL00	0.039	1.00	.039	1.0	.047	1.2	.002	0.05	.219	5.56			○	
	GTG10125L	0.049	1.25	.039	1.0	.047	1.2	.008	0.2	.219	5.56				○
	GTG10150FL00	0.059	1.50	.039	1.0	.047	1.2	.002	0.05	.219	5.56			○	
	GTG10200FL01	0.079	2.00	.039	1.0	.047	1.2	.004	0.1	.219	5.56			○	
	GTG14100FL00	0.039	1.00	.079	2.0	.087	2.2	.002	0.05	.313	7.94			○	
	GTG14145L	0.057	1.45	.079	2.0	.087	2.2	.008	0.2	.313	7.94				○
	GTG14150FL00	0.059	1.50	.079	2.0	.087	2.2	.002	0.05	.313	7.94			○	
	GTG14175L	0.069	1.75	.079	2.0	.087	2.2	.008	0.2	.313	7.94				○
	GTG14200FL01	0.079	2.00	.079	2.0	.087	2.2	.004	0.1	.313	7.94			○	
	GTG20150FL	0.059	1.50	.118	3.0	.126	3.2	.008	0.2	.375	9.525	○			
	GTG20175L	0.069	1.75	.118	3.0	.126	3.2	.008	0.2	.375	9.525				○
	GTG20200L	0.079	2.00	.118	3.0	.126	3.2	.008	0.2	.375	9.525				○
	GTG20200FL	0.079	2.00	.118	3.0	.126	3.2	.008	0.2	.375	9.525	○			

Left-Hand style shown

● : Stock　　○ : 1-2 week delivery

Cutting condition ➡V5

SBT Series ID Threading

SBT Minimum Bore Diameter .098" (2.5㎜) ～

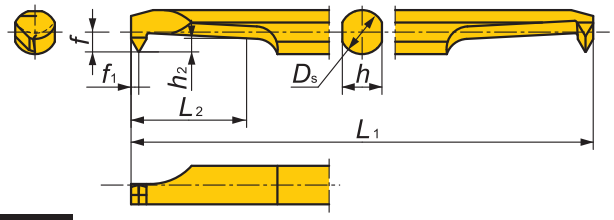
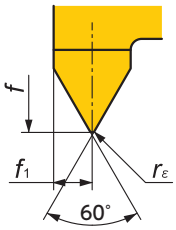
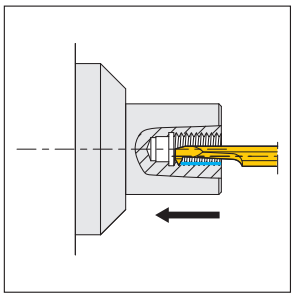


Figure-1





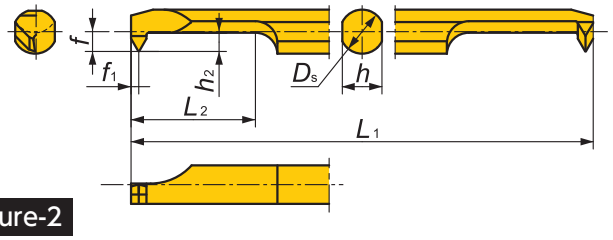


Figure-2

Right-Hand style shown

SBT Insert dimension

Item Number	Figure	Chip-breaker	Min. Bore Dia. D_m (Inch)	(㎜)	D_s (Inch)	(㎜)	L_2 (Inch)	(㎜)	h_2 (Inch)	(㎜)	L_1 (Inch)	(㎜)	f (Inch)	(㎜)	f_1 (Inch)	(㎜)	h (Inch)	(㎜)	r_ε (Inch)	(㎜)	Coated Carbide ZM3
SBT025M3R	1	No	**.098**	**2.5**	.098	2.5	.213	5.4	.024	0.6	1.969	50	.043	1.10	.016	0.40	.091	2.3	.002 MAX Flat	0.05 MAX Flat	●
SBT030M4R	1	No	**.118**	**3.0**	.118	3.0	.295	7.5	.031	0.8	1.969	50	.051	1.30	.020	0.50	.028	2.7	.002 MAX Flat	0.05 MAX Flat	●
SBT030M4RB	1	Yes	**.118**	**3.0**	.118	3.0	.295	7.5	.031	0.8	1.969	50	.051	1.30	.020	0.50	.028	2.7	.002 MAX Flat	0.05 MAX Flat	●
SBT035M5RB	1	Yes	**.138**	**3.5**	.138	3.5	.335	8.5	.039	1.0	2.362	60	.061	1.55	.022	0.55	.013	3.2	.002 MAX Flat	0.05 MAX Flat	●
SBT040M6RB	1	Yes	**.157**	**4.0**	.157	4.0	.413	10.5	.047	1.2	2.362	60	.071	1.80	.028	0.70	.142	3.6	R.002	R0.05	●
SBT050M8RB	2	Yes	**.197**	**5.0**	.197	5.0	.622	15.8	.059	1.5	2.756	70	.091	2.30	.031	0.80	.117	4.5	R.002	R0.05	●
SBT060M10RB	2	Yes	**.236**	**6.0**	.236	6.0	.724	18.4	.071	1.8	3.150	80	.110	2.80	.037	0.95	.213	5.4	R.002	R0.05	●

SBT Applicable Thread

Item Number	Figure	Chip-breaker	Min. Bore Dia. D_m (Inch)	(㎜)	Thread Type: Metric Thread		UNF Thread		Recommended Thread Type: Metric Thread	UNF Thread
SBT025M3R	1	No	**.098**	**2.5**	M3	0.5	—	—	M3 × 0.5	—
SBT030M4R	1	No	**.118**	**3.0**	M4-	0.5-0.8	No.8-32UNC-	36-32	M4 × 0.7	No.8-32UNC
SBT030M4RB	1	Yes	**.118**	**3.0**	M4-	0.5-0.8	No.8-32UNC-	36-32	M4 × 0.7	No.8-32UNC
SBT035M5RB	1	Yes	**.138**	**3.5**	M4.5-	0.5-1.0	No.10-24UNC-	32-24	M5 × 0.8	No.10-24UNC No.12-24UNC
SBT040M6RB	1	Yes	**.157**	**4.0**	M5.5-	0.75-1.25	No.12-24UNC-	28-20	M6 × 1.0	1/4-20UNC
SBT050M8RB	2	Yes	**.197**	**5.0**	M7-	0.75-1.5	1/4-28UNF-	28-18	M8 × 1.25	5/16-18UNC
SBT060M10RB	2	Yes	**.236**	**6.0**	M8-	0.75-1.75	5/16-24UNF-	28-16	M10 × 1.5	3/8-16UNC

● : Stock ○ : 1-2 week delivery

Sleeves ➡V9・11・14

Unified Standard

	Thread Type		Pilot hole(mm)	Pitch		Applicable Inserts
	#1	#2		TPI	(mm)	
Coarse	No.8-32UNC	–	ϕ3.42	32	0.7938	SBT030M4R(B)
	No.10-24UNC	–	ϕ3.83	24	1.0583	SBT035M5RB
	–	No.12-24UNC	ϕ4.47	24	1.0583	
	1/4-20UNC	–	ϕ5.12	20	1.2700	SBT040M6RB
	5/16-18UNC	–	ϕ6.57	18	1.4111	SBT050M8RB
	3/8-16UNC	–	ϕ7.98	16	1.5875	SBT060M10RB
Fine	No.8-36UNF	–	ϕ3.51	36	0.7056	SBT030M4RB
	No.10-32UNF	–	ϕ4.07	32	0.7938	SBT035M5RB
	–	No.12-28UNF	ϕ4.61	28	0.9071	SBT040M6RB
	1/4-28UNF	–	ϕ5.47	28	0.9071	
	5/16-24UNF	–	ϕ6.91	24	1.0583	SBT050M8RB
	3/8-24UNF	–	ϕ8.51	24	1.0583	SBT060M10RB
	7/16-20UNF	–	ϕ9.88	20	1.2700	
	1/2-20UNF	–	ϕ11.47	20	1.2700	
	9/16-18UNF	–	ϕ12.9	18	1.4111	
	5/8-18UNF	–	ϕ14.5	18	1.4111	
	3/4-16UNF	–	ϕ17.5	16	1.5875	

ISO Metric

Thread Type			Pitch (mm)								
#1	#2	#3	2.0	1.75	1.5	1.25	1.0	0.8	0.75	0.7	0.5
M3											Coarse
M4										Coarse	Fine
	M4.5								Coarse		
M5								Coarse			
		M5.5									
M6							Coarse		Fine		
	M7										
M8						Coarse	Fine				
		M9									
M10					Coarse	Fine					
		M11									
M12				Coarse	Fine	Fine					
	M14		Coarse								
		M15									

Cutting Conditions

●Threading

For 600 - 1500 RPM Recommended Depth of Cut (DOC) for Each Pass

Metric Thread		Number of Pass																				
Pitch (mm)	Total DOC (mm)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
0.5	0.3	0.06	0.05	0.05	0.04	0.04	0.03	0.02	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—
0.7	0.43	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.03	0.02	0.01	—	—	—	—	—	—	—	—	—	—	—
0.75	0.46	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.02	0.01	—	—	—	—	—	—	—	—	—	—
0.8	0.49	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.02	0.01	—	—	—	—	—	—	—	—	—
1.0	0.62	0.07	0.07	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.02	0.01	—	—	—	—	—	—	—
1.25	0.76	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.04	0.03	0.03	0.02	0.01	—	—	—	—	—	—
1.5	0.92	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.01	—	—	—
1.75	1.09	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.01

UNF Thread		Number of Pass																		
Pitch (TPI)	Total DOC (inch)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
36	.017	.002	.002	.002	.002	.002	.002	.001	.001	.0008	.0004	—	—	—	—	—	—	—	—	—
32	.019	.002	.002	.002	.002	.002	.001	.001	.001	.001	.0008	.0004	—	—	—	—	—	—	—	—
28	.022	.003	.002	.002	.002	.002	.002	.001	.001	.001	.001	.001	.0008	.0004	—	—	—	—	—	—
24	.026	.003	.002	.002	.002	.002	.002	.002	.002	.001	.001	.001	.001	.0008	.0004	—	—	—	—	—
20	.031	.003	.003	.003	.003	.002	.002	.002	.002	.002	.002	.001	.001	.001	.001	.0008	.0004	—	—	—
18	.034	.003	.003	.003	.003	.003	.002	.002	.002	.002	.002	.002	.002	.001	.001	.001	.0008	.0004	—	—
16	.039	.003	.003	.003	.003	.003	.003	.003	.002	.002	.002	.002	.002	.002	.001	.001	.001	.001	.0008	.0004

TMN Series

TGC Minimum Bore Diameter .315" (80㎜) ～

Carbide shank

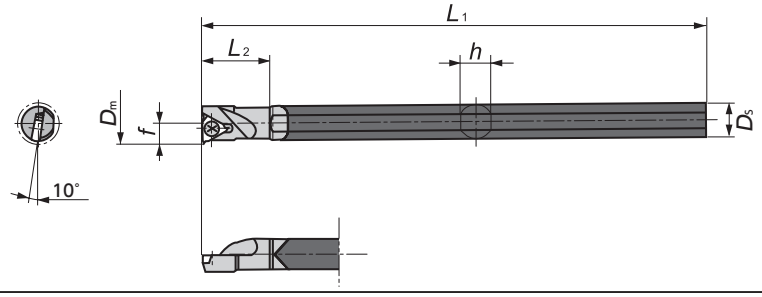
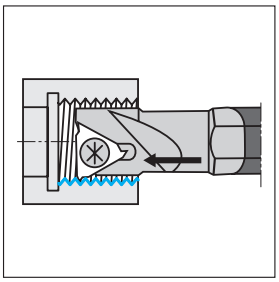


Figure-1



Right-Hand style shown

HN Minimum Bore Diameter .315" (80㎜) ～

Steel shank

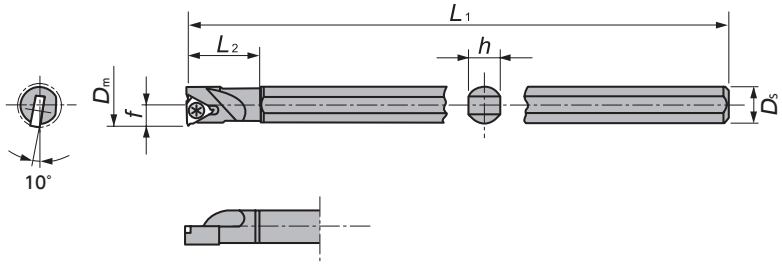
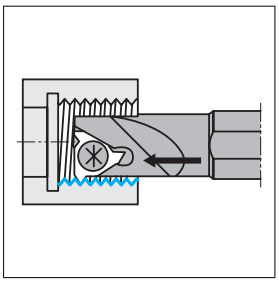


Figure-2



Right-Hand style shown

TMN Series - Toolholders

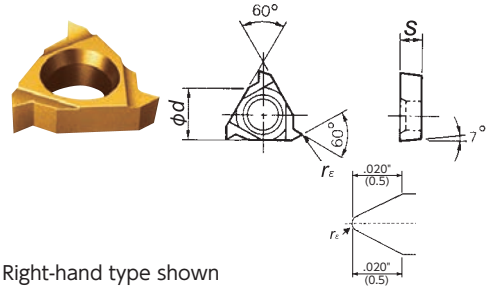


■TGC/HN

Gage Insert	Item Number	Figure	Stock	Min. Machining Dia. D_m (Inch)	(㎜)	D_s (Inch)	(㎜)	h (Inch)	(㎜)	L_1 (Inch)	(㎜)	f (Inch)	(㎜)	L_2 (Inch)	(㎜)	Clamp Screw	Wrench
TMN..06..	**TGC10T06H161R**	1	○	**.315**	**8**	.236	6	.217	5.5	3.937	100	.150	3.8	.512	13.0	LR-S-2 × 4.4	CLR-13S
TMN..08..	**TGC10T08K162R**	1	○	**.394**	**10**	.315	8	.276	7.0	4.921	125	.185	4.7	.669	17.0	LR-S-2 × 5.5	CLR-13S
TMN..09..	**TGC10T10M163R**	1	○	**.472**	**12**	.394	10	.354	9.0	5.906	150	.236	6.0	.787	20.0	LRIS-2.2 × 6	CLR-13S
TMN..06..	**HN59Z-0028**	2	○	**.315**	**8**	.236	6	.217	5.5	3.937	100	.150	3.8	.512	13.0	LR-S-2 × 4.4	CLR-13S
TMN..08..	**HN59Z-0029**	2	○	**.394**	**10**	.315	8	.276	7.0	4.921	125	.185	4.7	.669	17.0	LR-S-2 × 5.5	CLR-13S
TMN..09..	**HN59Z-0030**	2	○	**.472**	**12**	.236	10	.354	9.0	5.906	150	.236	6.0	.787	20.0	LRIS-2.2 × 6	CLR-13S

TMN Series - Inserts

■TMN

Shape	Item Number	ϕd (Inch)	(㎜)	s (Inch)	(㎜)	r_ε (Inch)	(㎜)	Recommended Pitch (TPI)	(㎜)	Pitch (TPI)	(㎜)	Coated Carbide ZM3
	**TMN06FR03**	.156	3.97	.063	1.59	.001	.003	51	0.5	63-34	0.4-0.75	○
	TMN08FR03	.187	4.76	.094	2.38	.001	.003	51	0.5	63-34	0.4-0.75	○
	TMN09FR03	.219	5.56	.094	2.38	.001	.003	51	0.5	63-34	0.4-0.75	○

Right-hand type shown

Cutting condition ➡V5

Mogul Bar for 75° Diamond (MBL style)

Minimum Bore Diameter .197"(5.0㎜)

S-MBR (Coolant through) Steel shank (tapered type)

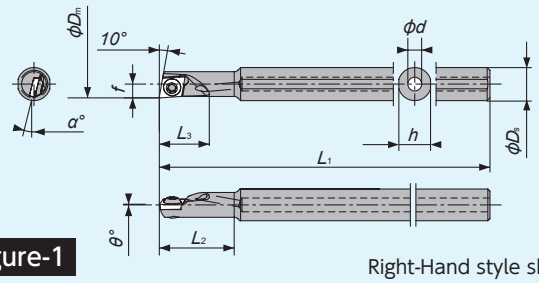
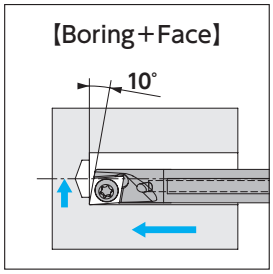


Figure-1

Right-Hand style shown





F1 chipbreakers evacuates chips BACKWARD (S-STUC style shown)

C-MBR (Coolant through) Carbide shank (straight type)

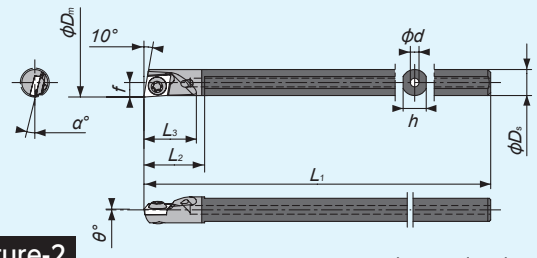


Figure-2

Right-Hand style shown

C-MBR (Coolant through) Carbide shank (tapered type)

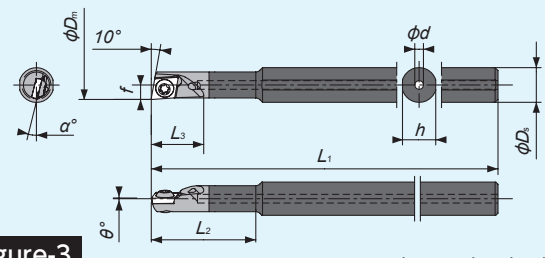


Figure-3

Right-Hand style shown

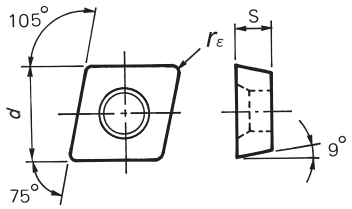
MBL style - Toolholders

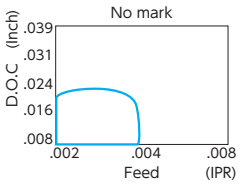
Gage Insert	Item number*	Figure	Stock	ϕ D_s (inch)	ϕ D_s (㎜)	Min. bore Dia. ϕ D_m (inch)	Min. bore Dia. ϕ D_m (㎜)	h (㎜)	L_1 (㎜)	f (㎜)	L_2 (㎜)	L_3 (㎜)	L_4 (㎜)	ϕ d (㎜)	θ	α	Std. corner radius r_ε (inch)	Std. corner radius r_ε (㎜)	Clamp screw	Wrench
 MBL	S06F-MBRD05-OH	1	●	.236	6.0	.197	5.0	5.7	80	2.5	13.5	9	—	2.5	0°	−13°	.0059	0.15	LR-S-2 × 3.5	CLR-13S
	C045F-MBRD05-OH	2	●	.177	4.5	.197	5.0	4.0	80	2.5	10.5	9	—	1.5	0°	−13°	.0059	0.15	LR-S-2 × 3.5	CLR-13S
	C06F-MBRD05-OH	3	●	.236	6.0	.197	5.0	5.7	80	2.5	18	9	—	1.5	0°	−13°	.0059	0.15	LR-S-2 × 3.5	CLR-13S

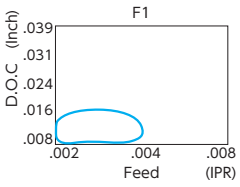
* "S" denotes steel shank, "C" denotes carbide shank

MBL style - Insert

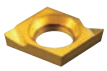
MBL







MBL

	Item Number	d (Inch)	d (㎜)	s (Inch)	s (㎜)	r_ε (Inch)	r_ε (㎜)	Coated Carbide TM4	Coated Carbide ZM3
 L-hand shown	MBL 005 FL	.142	3.6	.039	1.0	.002	0.05	●	○
	MBL 015 FL	.142	3.6	.039	1.0	.006	0.15	●	○
 R-hand shown	MBL 005 FR F1	.142	3.6	.039	1.0	.002	0.05	●	
	MBL 015 FR F1	.142	3.6	.039	1.0	.006	0.15	●	

*For F1 chipbreaker, right-hand inserts fit to right-hand toolholder

Note: F1 chipbreaker evacuates chips BACKWARD

● : Stock ○ : 1-2 week delivery 💧 : Coolant through

Cutting condition ➡V4

Mogul Bar for 75° Diamond (ERGP style)

Minimum Bore Diameter .236"(6.0㎜)

S-SEXR (Coolant through) Steel shank (tapered type)

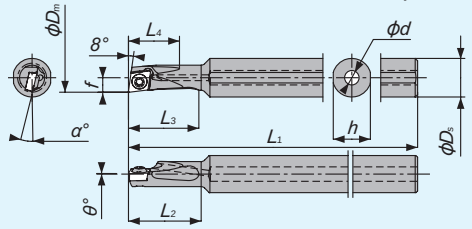
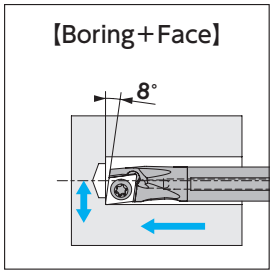


Figure-1

Right-Hand style shown





F1 chipbreakers evacuates chips BACKWARD (S-STUC style shown)

C-SEXR (Coolant through) Carbide shank (straight type)

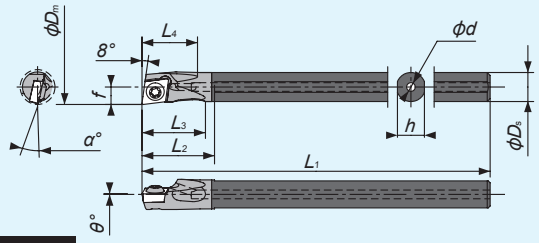


Figure-2

Right-Hand style shown

C-SEXR (Coolant through) Carbide shank (tapered type)

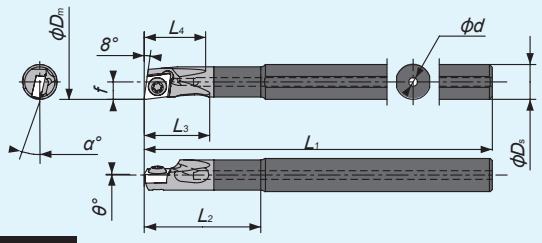


Figure-3

Right-Hand style shown

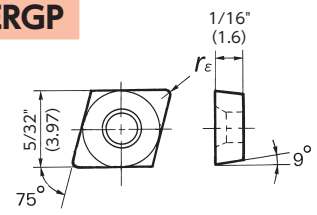
ERGP style - Toolholders

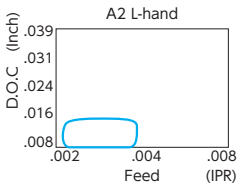
Gage Insert	Item number*	Figure	Stock R	Stock L	ϕ Ds (inch)	ϕ Ds (㎜)	Min. bore Dia. ϕ Dm (inch)	Min. bore Dia. ϕ Dm (㎜)	h (㎜)	L1 (㎜)	f (㎜)	L2 (㎜)	L3 (㎜)	L4 (㎜)	ϕ d (㎜)	θ	α	Std. corner radius rε (inch)	Std. corner radius rε (㎜)	Clamp screw	Wrench
 ERGP52..	S08G-SEXR℄3D06-OH 💧	1	●		.315	8.0	.236	6.0	7.7	90	3.0	15	15	10	3.0	0°	− 13°	.008	0.2	LR-S-2 × 3.7	CLR-13S
	C05G-SEXR℄3D06-OH 💧	2	●	○	.197	5.0	.236	6.0	4.0	90	3.0	12.5	11	10	1.5	0°	− 13°	.008	0.2	LR-S-2 × 3.7	CLR-13S
	C06G-SEXR℄3D06-OH 💧	3	●	○	.236	6.0	.236	6.0	5.7	90	3.0	20	11	10	1.5	0°	− 13°	.008	0.2	LR-S-2 × 3.7	CLR-13S

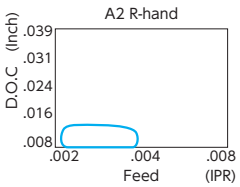
* "S" denotes steel shank, "C" denotes carbide shank

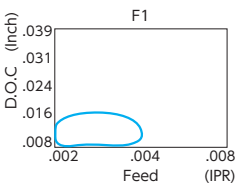
ERGP style - Insert

ERGP



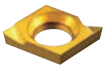






●Right-Hand style shown

ERGP

	Item Number	ISO Item Number	IC (Inch)	IC (㎜)	Thickness (Inch)	Thickness (㎜)	rε (Inch)	rε (㎜)	Coated Carbide TM4 R	Coated Carbide TM4 L	Coated Carbide VM1 R	Coated Carbide VM1 L	Coated Carbide ZM3 R	Coated Carbide ZM3 L	Cermet XT3 R	Cermet XT3 L	Cermet C7X R	Cermet C7X L
 L-hand shown	ERGP 52Y- FR℄ A2	ERGHT 30102 FR A2	5/32	3.97	1/16	1.6	.008	0.2	R	Ⓛ	Ⓡ	Ⓛ	Ⓡ	Ⓛ	Ⓡ	Ⓛ	Ⓡ	Ⓛ
	ERGP 521- FR℄ A2	ERGHT 30104 FR A2	5/32	3.97	1/16	1.6	.016	0.4	R					Ⓛ				
 R-hand shown	ERGP 5204 FR-- F1	ERGHT 30101 FR F1	5/32	3.97	1/16	1.6	.004	0.1	R									
	ERGP 52Y- FR-- F1	ERGHT 30102 FR F1	5/32	3.97	1/16	1.6	.008	0.2	R									
	ERGP 521- FR-- F1	ERGHT 30104 FR F1	5/32	3.97	1/16	1.6	.016	0.4	R									

*For F1 chipbreaker, right-hand inserts fit to right-hand toolholder

Note: F1 chipbreaker evacuates chips BACKWARD

● : Stock ○ : 1-2 week delivery
R : Stock (Right-hand only) L : Stock (Left-hand only)
Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only) 💧 : Coolant through

Cutting condition ➡V4

Mogul Bar for 80° Diamond (CP style)

Minimum Bore Diameter .276"(7.0㎜)

S-SCLP (Coolant through) Steel shank

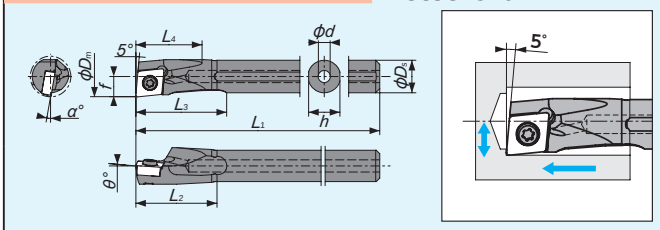


Figure-1

Right-Hand style shown

C-SCLP (Coolant through) Carbide shank

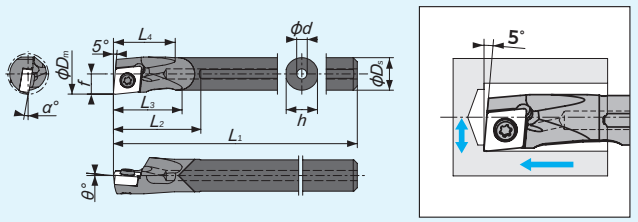


Figure-2

Right-Hand style shown

CP style - Toolholders

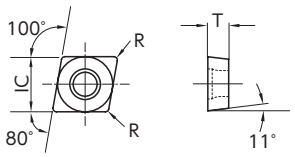
Gage Insert	Item number*	Figure	Stock R	Stock L	ϕD_s (inch)	ϕD_s (㎜)	Min. bore Dia. ϕD_m (inch)	Min. bore Dia. ϕD_m (㎜)	h (㎜)	L_1 (㎜)	f (㎜)	L_2 (㎜)	L_3 (㎜)	L_4 (㎜)	ϕd (㎜)	θ	α	Std. corner radius r_ε (inch)	Std. corner radius r_ε (㎜)	Clamp screw	Wrench
CP..62..	S06F-SCLP R/L 04D07-OH	1	●		.236	6.0	.276	7.0	5.75	80	3.5	14	17.0	12.0	2.5	+5° −9°		.008	0.2	LR-S-2 × 3.7	CLR-13S
	S07G-SCLP R/L 04D08-OH	1	●		.276	7.0	.315	8.0	6.75	90	4.0	16	19.5	13.5	3.0	+5° −7°		.008	0.2	LR-S-2 × 3.7	CLR-13S
CP..21.5..	S08H-SCLP R/L 06D10-OH	1	●		.315	8.0	.394	10.0	7.7	100	5.0	20	22.0	16.0	3.0	+5° −10°		.016	0.4	LR-S-2.5 × 6	CLR-15S
CP..62..	C06H-SCLP R/L 04D07-OH	2	●	○	.236	6.0	.276	7.0	5.75	100	3.5	15.5	11.5	12.0	2.0	+5° −9°		.008	0.2	LR-S-2 × 3.7	CLR-13S
	C07J-SCLP R/L 04D08-OH	2	●		.276	7.0	.315	8.0	6.75	110	4.0	17.5	13.0	13.5	2.0	+5° −7°		.008	0.2	LR-S-2 × 3.7	CLR-13S
CP..21.5..	C08K-SCLP R/L 06D10-OH	2	●	○	.315	8.0	.394	10.0	7.7	125	5.0	21.5	16.5	15.0	2.5	+5° −10°		.016	0.4	LR-S-2.5 × 6	CLR-15S

* "S" denotes steel shank, "C" denotes carbide shank

CP style - Insert - Carbide/Cermet

80 degree Diamond Positive type (CP..)

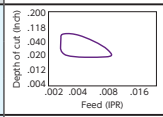
(inch)	IC	T
CP..21.5	1/4	3/32
CP..32.5	3/8	5/32

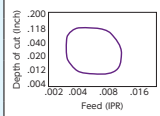


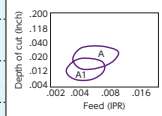
Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ●
Hardened Material	H	● ● ●

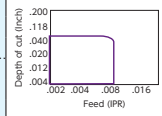
● : 1st Choice
● : Alternate choice

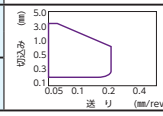
Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	Cermet PVD Coated Q15	C7Z
	CPGT 21.504 FNAM3	CPGT 060201 FNXAM3	1/4	.004									●			
	CPGT 21.508 FNAM3	CPGT 060202 FNXAM3	1/4	.008									●			
	CPGT 21.51 FNAM3	CPGT 060204 FNXAM3	1/4	.016									●			
	CPGH 21.504 AM5	CPGH 060201 ENBAM5	1/4	.004								●				
	CPGH 21.508 AM5	CPGH 060202 ENBAM5	1/4	.008								●		○		
	CPGH 21.508 FNAM5	CPGH 060202 FNAM5	1/4	.008				○		○						
	CPGH 21.51 AM5	CPGH 060204 ENBAM5	1/4	.016								●				
	CPGH 21.51 FNAM5	CPGH 060204 FNAM5	1/4	.016								●				
	CPGH 21.52 AM5	CPGH 060208 ENBAM5	1/4	.031								●				
	CPGP 6208 FR/L A1	CPGH 040102 FR/L A1	.187	.008				Ⓛ		Ⓛ						
	CPGP 621 FR/L A1	CPGH 040104 FR/L A1	.187	.016				Ⓛ		Ⓛ						
	CPGP 21.508 FR/L A	CPGH 060202 FR/L A	1/4	.008				Ⓛ		Ⓛ						
	CPGP 21.51 FR/L A	CPGH 060204 FR/L A	1/4	.016				Ⓛ		Ⓛ						
	CPGP 6208 R/L A1	CPGH 040102 TR/L A1	.187	.008								Ⓛ	Ⓛ			
	CPGP 621 R/L A1	CPGH 040104 TR/L A1	.187	.016								Ⓛ	Ⓛ			
	CPGP 21.508 R/L A	CPGH 060202 TR/L A	1/4	.008								Ⓛ	Ⓛ			
	CPGP 21.51 R/L A	CPGH 060204 TR/L A	1/4	.016								Ⓛ	Ⓛ			
	CPGP 6204 FR/L F1	CPGH 040101 FR/L F1	.187	.004				R								
	CPGP 6208 FR/L F1	CPGH 040102 FR/L F1	.187	.008				R								
	CPGP 621 FR/L F1	CPGH 040104 FR/L F1	.187	.016				R								
	CPGP 21.504 FR/L F1	CPGH 060201 FR/L F1	1/4	.004				Ⓡ								
	CPGP 21.508 FR/L F1	CPGH 060202 FR/L F1	1/4	.008				R								
	CPGP 21.51 FR/L F1	CPGH 060204 FR/L F1	1/4	.016				R								
	CPGP 6208 R/L S	CPGH 040102 R/L S	.187	.008				Ⓛ								
	CPGP 621 R/L S	CPGH 040104 R/L S	.187	.016				Ⓛ								
	CPGP 21.508 R/L S	CPGH 060202 R/L S	1/4	.008				Ⓛ								
	CPGP 21.51 R/L S	CPGH 060204 R/L S	1/4	.016				Ⓛ								











*For F1 chipbreaker, right-hand inserts fit to right-hand toolholder
Note: F1 chipbreaker evacuates chips BACKWARD

Mogul Bar for 80° Diamond ("CC" style)

Minimum Bore Diameter .394"(10㎜)

S-SCLC (Coolant through)

Steel shank

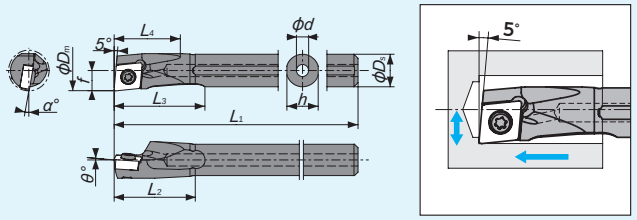


Figure-1

Right-Hand style shown

C-SCLC (Coolant through)

Carbide shank

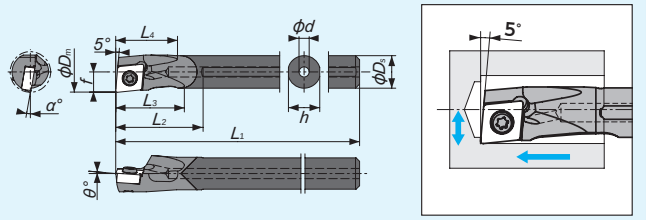


Figure-2

Right-Hand style shown

"CC" style - Toolholders

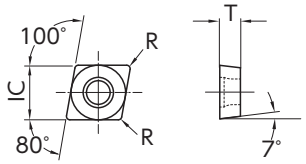


Gage Insert	Item number*	Figure	Stock R	Stock L	φ D_s (inch)	φ D_s (mm)	Min. bore Dia. φ D_m (inch)	Min. bore Dia. φ D_m (mm)	h (mm)	L_1 (mm)	f (mm)	L_2 (mm)	L_3 (mm)	L_4 (mm)	φ d (mm)	θ	α	Std. corner radius r_ε (inch)	Std. corner radius r_ε (mm)	Clamp screw	Wrench
CC..21.5..	S08H-SCLC⅜06D10-OH	1	●		.315	8.0	.394	10.0	7.7	100	5.0	20.0	22.0	16.0	3.0	0°	−13°	.016	0.4	LRIS-2.5 × 5	CLR-15S
	S10K-SCLC⅜06D12-OH	1	●		.394	10.0	.472	12.0	9.6	125	6.0	24.0	27.5	20.0	3.5	0°	−11°	.016	0.4	LRIS-2.5 × 5	CLR-15S
	S12M-SCLC⅜06D14-OH	1	●		.472	12.0	.551	14.0	11.5	150	7.0	28.0	32.5	23.0	4.0	0°	−9°	.016	0.4	LRIS-2.5 × 5	CLR-15S
CC..32.5..	S16Q-SCLC⅝09D18-OH	1	●		.630	16.0	.709	18.0	15.4	180	9.0	36.0	42.5	30.0	5.0	0°	−10°	.016	0.4	LRIS-4 × 8	LLR-25S-20 × 65
CC..21.5..	C08K-SCLC⅜06D10-OH	2	●		.315	8.0	.394	10.0	7.7	125	5.0	21.5	16.5	15.0	2.5	0°	−13°	.016	0.4	LRIS-2.5 × 5	CLR-15S
	C10M-SCLC⅜06D12-OH	2	●	○	.394	10.0	.472	12.0	9.6	150	6.0	25.0	20.0	19.5	2.5	0°	−11°	.016	0.4	LRIS-2.5 × 5	CLR-15S
	C12M-SCLC⅜06D14-OH	2	●		.472	12.0	.551	14.0	11.5	150	7.0	29.0	23.5	22.5	3.0	0°	−9°	.016	0.4	LRIS-2.5 × 5	CLR-15S

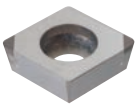
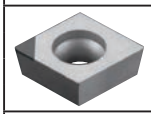
* "S" denotes steel shank, "C" denotes carbide shank

CC.. inserts - CBN / PCD

■80° Diamond Positive type (CC..)



Steel	P	
Stainless Steel	M	
Cast Iron	K	● ● ● ●
Non-Ferrous Material	N	● ●
Heat Resistant Alloy	S	
Hardened Material	H	● ● ● ●

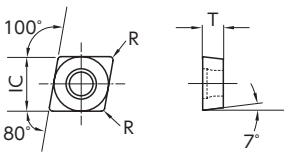
Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	CBN (Brazed) Coated B5K	B52	Coated B6K	B36	B40	B23	B30	PCD PD1	PD2
	CCGW 21.51 PD	CCGW 060204 PD	S0415	1/4	.016	2	.091		●							
	CCGW 32.508 PD	CCGW 09T302 PD	S0415	3/8	.008	2	.091		●							
	CCGW 32.508 PD	CCGW 09T302 PD	S0635	3/8	.008	2	.091					●				
	CCGW 32.51 PD	CCGW 09T304 PD	S0415	3/8	.016	2	.091		●							
	CCGW 32.51 PD	CCGW 09T304 PD	S0635	3/8	.016	2	.091					●				
	CCGW 32.52 PD	CCGW 09T308 PD	S0415	3/8	.031	2	.087		●							
	CCGW 32.52 PD	CCGW 09T308 PD	S0635	3/8	.031	2	.087					●				
	CCMW 32.504	CCMW 09T301	None	3/8	.004	1	–								○	
	CCMW 32.508	CCMW 09T302	None	3/8	.008	1	–								○	
	CCMW 32.51	CCMW 09T304	None	3/8	.016	1	–								○	
	CCMW 32.52	CCMW 09T308	None	3/8	.031	1	–								○	
NEW  with chipbreaker	CCMT 32.508 PF	CCMT 09T302PF	None	3/8	.008	1	–									●
	CCMT 32.51 PF	CCMT 09T304PF	None	3/8	.016	1	–									●

● : Stock ○ : 1-2 week delivery
R : Stock (Right-hand only) L : Stock (Left-hand only)
Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only) 💧 : Coolant through

Cutting condition ➡V4

CC.. inserts - Carbide / Cermet

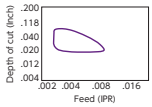
(inch)	IC	T
CC..21.5	1/4	3/32
CC..32.5	3/8	5/32

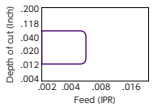


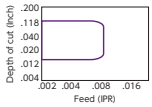
		Carbide							Cermet				
		PVD Coated										PVD Coated	
		QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●
Cast Iron	K								●	●		●	●
Non-Ferrous Material	N				●	●	●	●	●	●			●
Heat Resistant Alloy	S	●	●	●	●								
Hardened Material	H	●	●	●									

● : 1st Choice
● : Alternate choice

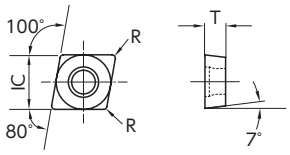
Shape	Item Number	ISO Item Number	IC	R	QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
	CCGT 21.501 FNAM3	CCGT 060200 FNAM3	1/4	.001	●	●			○							
	CCGT 21.504M FNAM3	CCGT 060201M FNAM3	1/4	.003	●											
	CCGT 21.504 FNAM3	CCGT 060201 FNXAM3	1/4	.004									●			
	CCGT 21.508M FNAM3	CCGT 060202M FNAM3	1/4	.007	●	●										
	CCGT 21.508 FNAM3	CCGT 060202 FNAM3	1/4	.008					○	○						
	CCGT 21.508 FNAM3	CCGT 060202 FNXAM3	1/4	.008									●			
	CCGT 21.51M FNAM3	CCGT 060204M FNAM3	1/4	.015	●	●										
	CCGT 21.51 FNAM3	CCGT 060204 FNAM3	1/4	.016						○			●			
	CCGT 32.501 FNAM3	CCGT 09T300 FNAM3	3/8	.001	●	●		○	○							
	CCGT 32.504M FNAM3	CCGT 09T301M FNAM3	3/8	.003	●	●		○	○	○						
	CCGT 32.504 FNAM3	CCGT 09T301 FNXAM3	3/8	.004									●			
	CCGT 32.508M FNAM3	CCGT 09T302M FNAM3	3/8	.007	●	●		○	○	○						
	CCGT 32.508 FNAM3	CCGT 09T302 FNAM3	3/8	.008	●				○							
	CCGT 32.508 FNAM3	CCGT 09T302 FNXAM3	3/8	.008									●			
	CCGT 32.51M FNAM3	CCGT 09T304M FNAM3	3/8	.015	●	●		○	○	○						
	CCGT 32.51 FNAM3	CCGT 09T304 FNAM3	3/8	.016	●				○							
	CCGT 32.51 FNAM3	CCGT 09T304 FNXAM3	3/8	.016									●			
	CCGT 32.52 FNAM3	CCGT 09T308 FNAM3	3/8	.031	●											
	CCGT 32.52 FNAM3	CCGT 09T308 FNXAM3	3/8	.031									●			
	CCMT 21.508 FNAM3	CCMT 060202 FNAM3	1/4	.008			○									
	CCMT 21.508 AM3	CCMT 060202 ENBAM3	1/4	.008									○			○
	CCMT 21.51 FNAM3	CCMT 060204 FNAM3	1/4	.016			○									
	CCMT 21.51 AM3	CCMT 060204 ENBAM3	1/4	.016									●			○
	CCMT 32.508 AM3	CCMT 09T302 ENBAM3	3/8	.008									○			○
	CCMT 32.51 FNAM3	CCMT 09T304 FNAM3	3/8	.016			○									
	CCMT 32.51 AM3	CCMT 09T304 ENBAM3	3/8	.016									●			○
	CCMT 32.52 FNAM3	CCMT 09T308 FNAM3	3/8	.031			○									
	CCMT 32.52 AM3	CCMT 09T308 ENBAM3	3/8	.031									●			○
	CCMT 32.53 AM3	CCMT 09T312 ENBAM3	3/8	.047									○			○
NEW 	CCGT 32.504M YL	CCGT 09T301M YL	3/8	.003			●	○								
	CCGT 32.508M YL	CCGT 09T302M YL	3/8	.007			●	○								
	CCGT 32.51M YL	CCGT 09T304M YL	3/8	.015			●	○								
	CCGT 21.504M CL	CCGT 060201M CL	1/4	.003		●	○	●								
	CCGT 21.508M CL	CCGT 060202M CL	1/4	.007	●*	●	○	●								
	CCGT 32.501 CL	CCGT 09T300 CL	3/8	.001		○										
	CCGT 32.504M CL	CCGT 09T301M CL	3/8	.003		●	○	●								
	CCGT 32.508M CL	CCGT 09T302M CL	3/8	.007		●	○	●								
	CCGT 32.51M CL	CCGT 09T304M CL	3/8	.015	●*	●	○	●								







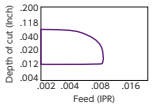
*To be released in November 2015.

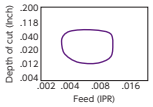


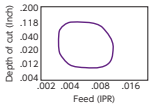
Steel	P	● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ●
Hardened Material	H	● ● ●

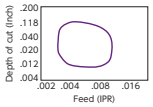
● : 1st Choice
● : Alternate choice

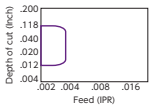
Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	Cermet PVD Coated Q15	C7Z
	CCGT 21.501 AZ7*	CCGT 060200 AZ7	1/4	.001	○											
	CCGT 21.504M AZ7*	CCGT 060201M AZ7	1/4	.003	○											
	CCGT 21.508M AZ7*	CCGT 060202M AZ7	1/4	.007	○											
	CCGT 32.501 AZ7*	CCGT 09T300 AZ7	3/8	.001	●	○		○		○						
	CCGT 32.504M AZ7*	CCGT 09T301M AZ7	3/8	.003	●	○		○		○						
	CCGT 32.508M AZ7*	CCGT 09T302M AZ7	3/8	.007	●	○		○		○						
	CCGT 32.51M AZ7*	CCGT 09T304M AZ7	3/8	.015	●	○		○		○						
	CCGT 21.504 AF1	CCGT 060201 ENBAF1	1/4	.004								●				
	CCGT 21.508 AF1	CCGT 060202 ENBAF1	1/4	.008								●				
	CCGT 21.51 AF1	CCGT 060204 ENBAF1	1/4	.016								●				
	CCGT 21.51 FNAF1	CCGT 060204 FNAF1	1/4	.016								●				
	CCGT 21.52 AF1	CCGT 060208 ENBAF1	1/4	.031								●				
	CCGT 32.508 AF1	CCGT 09T302 ENBAF1	3/8	.008								○				
	CCGT 32.508 FNAF1	CCGT 09T302 FNAF1	3/8	.008								●				
	CCGT 32.51 FNAF1	CCGT 09T304 FNAF1	3/8	.016								●				
	CCGT 32.51 AF1	CCGT 09T304 ENBAF1	3/8	.016								○				
	CCGT 32.52 FNAF1	CCGT 09T308 FNAF1	3/8	.031								●				
	CCGT 32.52 AF1	CCGT 09T308 ENBAF1	3/8	.031								○				
	CCMT 21.51 AM5	CCMT 060204 ENBAM5	1/4	.016										○		
	CCMT 32.51 AM5	CCMT 09T304 ENBAM5	3/8	.016										○		
	CCMT 32.52 AM5	CCMT 09T308 ENBAM5	3/8	.031										○		
	CCGT 21.508 ENBFM	CCGT 060202 ENBFM	1/4	.008								○				
	CCGT 21.51 ENBFM	CCGT 060204 ENBFM	1/4	.016								○				
	CCMT 21.508 ENBZR	CCMT 060202 ENBZR	1/4	.008									○			○
	CCMT 21.51 ENBZR	CCMT 060204 ENBZR	1/4	.016									○			○
	CCMT 32.508 ENBZR	CCMT 09T302 ENBZR	3/8	.008									○			○
	CCMT 32.51 ENBZR	CCMT 09T304 ENBZR	3/8	.016									○			○
	CCMT 32.52 ENBZR	CCMT 09T308 ENBZR	3/8	.031									○			○







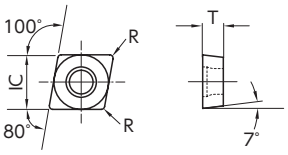




＊To be replaced by version which has 2.0mm higher edge.

● : Stock ○ : 1-2 week delivery ■ : While stock lasts
R : Stock (Right-hand only) L : Stock (Left-hand only)
Ⓡ : 1-2 week delivery (Right-hand only) Ⓛ : 1-2 week delivery (Left-hand only) Ⓜ : Mirror finish

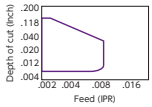
ID boring bars ➡V26
Cutting condition ➡V4

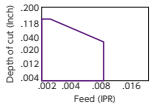


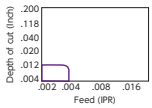
Steel	P	● ● ● ● ● ● ● ● ● ● ● ● ●
Stainless Steel	M	● ● ● ● ● ● ● ● ● ● ● ● ●
Cast Iron	K	● ● ● ● ●
Non-Ferrous Material	N	● ● ● ● ● ● ● ● ●
Heat Resistant Alloy	S	● ● ● ●
Hardened Material	H	● ● ●

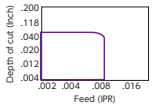
● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	Cermet PVD Coated Q15	C7Z
	CCGT 21.501 R/L S	CCGT 060200 R/L S	1/4	.001	R	Ⓡ			ⓇⓁ	ⓇL						
	CCGT 21.504M R/L S	CCGT 060201M R/L S	1/4	.003	R	Ⓡ										
	CCGT 21.504 R/L S	CCGT 060201 R/L S	1/4	.004					ⓇⓁ	RⓁ			ⓇⓁ			
	CCGT 21.508M R/L S	CCGT 060202M R/L S	1/4	.007	R											
	CCGT 21.508 R/L S	CCGT 060202 R/L S	1/4	.008					RⓁ	ⓇⓁ			ⓇⓁ			
	CCGT 21.51 R/L S	CCGT 060204 R/L S	1/4	.016	R											
	CCGT 32.501 R/L S	CCGT 09T300 R/L S	3/8	.001	R	R		R	ⓇⓁ	Ⓡ						
	CCGT 32.504M R/L S	CCGT 09T301M R/L S	3/8	.003	Ⓡ	R		R								
	CCGT 32.504 R/L S	CCGT 09T301 R/L S	3/8	.004	R				ⓇⓁ	ⓇⓁ						
	CCGT 32.508M R/L S	CCGT 09T302M R/L S	3/8	.007	Ⓡ	R		R								
	CCGT 32.508 R/L S	CCGT 09T302 R/L S	3/8	.008	R				RⓁ	Ⓡ						
	CCGT 32.51M R/L S	CCGT 09T304M R/L S	3/8	.015	Ⓡ			R								
	CCGT 32.51 R/L S	CCGT 09T304 R/L S	3/8	.016	R											
	CCMT 21.504 TR/L AS	CCMT 060201 TR/L AS	1/4	.004									ⓇⓁ			ⓇⓁ
	CCMT 21.508 TR/L AS	CCMT 060202 TR/L AS	1/4	.008									ⓇⓁ			ⓇⓁ
	CCMT 21.51 TR/L AS	CCMT 060204 TR/L AS	1/4	.016									ⓇⓁ			ⓇⓁ
	CCMT 32.504 TR/L AS	CCMT 09T301 TR/L AS	3/8	.004									ⓇⓁ			ⓇⓁ
	CCMT 32.508 TR/L AS	CCMT 09T302 TR/L AS	3/8	.008									ⓇⓁ			ⓇⓁ
	CCMT 32.51 TR/L AS	CCMT 09T304 TR/L AS	3/8	.016									ⓇⓁ			ⓇⓁ
	CCGT 21.501 R/L U	CCGT 060200 R/L U	1/4	.001		Ⓡ				Ⓡ						
	CCGT 21.504 R/L U	CCGT 060201 R/L U	1/4	.004		Ⓡ				ⓇⓁ						
	CCGT 21.508 R/L U	CCGT 060202 R/L U	1/4	.008		Ⓡ				ⓇⓁ						
	CCGT 32.501 R/L U1	CCGT 09T300 R/L U1	3/8	.001				Ⓡ		ⓇⓁ						
	CCGT 32.504 R/L U1	CCGT 09T301 R/L U1	3/8	.004		Ⓡ		Ⓡ		ⓇⓁ						
	CCGT 32.508 R/L U1	CCGT 09T302 R/L U1	3/8	.008		Ⓡ		Ⓡ		ⓇⓁ						
	CCGT 32.51 R/L U1	CCGT 09T304 R/L U1	3/8	.016				Ⓡ		ⓇⓁ						
	CCET 21.502 R/L KHG	CCET 0602005 R/L KHG	1/4	.002					ⓇⓁ							
	CCET 21.503 R/L KHG	CCET 0602008 R/L KHG	1/4	.003					ⓇⓁ							
	CCET 21.507 R/L KHG	CCET 0602018 R/L KHG	1/4	.007					ⓇⓁ							
	CCET 21.508 R/L KHG	CCET 060202 R/L KHG	1/4	.008					ⓇⓁ							
	CCET 32.502 R/L KHG	CCET 09T3005 R/L KHG	3/8	.002				Ⓡ	ⓇⓁ							
	CCET 32.503 R/L KHG	CCET 09T3008 R/L KHG	3/8	.003				Ⓡ	ⓇⓁ							
	CCET 32.507 R/L KHG	CCET 09T3018 R/L KHG	3/8	.007				Ⓡ	ⓇⓁ							
	CCET 32.508 R/L KHG	CCET 09T302 R/L KHG	3/8	.008				Ⓡ	ⓇⓁ							
	CCGT 21.508 FR/L F1	CCGT 060202 FR/L F1	1/4	.008				Ⓡ								
	CCGT 21.51 FR/L F1	CCGT 060204 FR/L F1	1/4	.016				Ⓡ								
	CCGT 32.508 FR/L F1	CCGT 09T302 FR/L F1	3/8	.008				Ⓡ								
	CCGT 32.51 FR/L F1	CCGT 09T304 FR/L F1	3/8	.016				Ⓡ								
	CCGW 21.501 FN	CCGW 060200 FN	1/4	.001						○						
	CCGW 21.501 H Ⓜ	CCGW 060200 H	1/4	.001							●					
	CCGW 21.504 FN	CCGW 060201 FN	1/4	.004						○						
	CCGW 21.504 H Ⓜ	CCGW 060201 H	1/4	.004							●					
	CCGW 21.508 H Ⓜ	CCGW 060202 H	1/4	.008							●					
	CCGW 21.51 FN	CCGW 060204 FN	1/4	.016						○						
	CCGW 21.52 FN	CCGW 060208 FN	1/4	.031						■						
	CCGW 32.500 V Ⓜ	CCGW 09T30 V	3/8	0					○							—
	CCGW 32.501 FN	CCGW 09T300 FN	3/8	.001						○						
	CCGW 32.501 H Ⓜ	CCGW 09T300 H	3/8	.001							●					
	CCGW 32.504 FN	CCGW 09T301 FN	3/8	.004						○						
	CCGW 32.504 H Ⓜ	CCGW 09T301 H	3/8	.004							●					
	CCGW 32.504 P Ⓜ	CCGW 09T301 P	3/8	.004					○							
	CCGW 32.508M P Ⓜ	CCGW 09T302M P	3/8	.007		○										
	CCGW 32.508 H Ⓜ	CCGW 09T302 H	3/8	.008							●					
	CCGW 32.508 P Ⓜ	CCGW 09T302 P	3/8	.008					○							









ID Tooling

Mogul Bar for 60° Triangle (TC/TP style)

Minimum Bore Diameter .315"(8.0㎜)

S-STUC(P) (Coolant through)

Steel shank

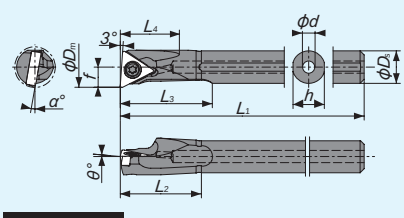
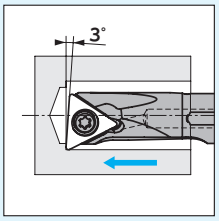


Figure-3



Right-Hand style shown

C-STUC(P) (Coolant through)

Carbide shank

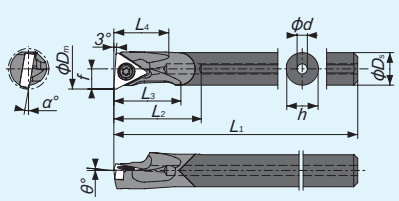
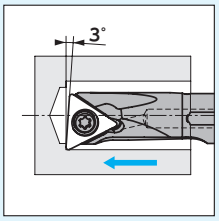


Figure-4



Right-Hand style shown

TC/TP style - Toolholders

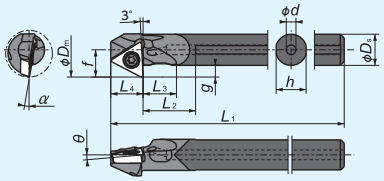
GageInsert	Item number*	Figure	Stock R	Stock L	ϕD_s (inch)	ϕD_s (㎜)	Min. bore Dia. ϕD_m (inch)	Min. bore Dia. ϕD_m (㎜)	h (㎜)	L_1 (㎜)	f (㎜)	L_2 (㎜)	L_3 (㎜)	L_4 (㎜)	ϕd (㎜)	θ	α	Std. corner radius r_ε (inch)	Std. corner radius r_ε (㎜)	Clamp screw	Wrench
TC..52..	S07G-STUC☔06D08-OH	3	●		.276	7.0	.315	8.0	6.75	90	4.0	16	19.5	12.5	2.5	0°	− 11°	.008	0.2	LR-S-2 × 4.4	CLR-13S
TP..73..	S08H-STUP☔09D10-OH	3	●		.315	8.0	.394	10.0	7.7	100	5.0	20	22.5	14.5	3.0	+ 5°	− 10°	.016	0.4	LR-S-2.5 × 4.8	CLR-15S
TP..22..	S10K-STUP☔11D12-OH	3	●		.394	10.0	.472	12.0	9.6	125	6.0	24	27.5	18.5	3.5	+ 5°	− 7.5°	.016	0.4	LR-S-3 × 5.8	RLR-20S
	S12M-STUP☔11D14-OH	3	●		.472	12.0	.551	14.0	11.5	150	7.0	28	32.5	22.0	4.0	+ 5°	− 5°	.016	0.4	LR-S-3 × 5.8	RLR-20S
	S16Q-STUP☔11D18-OH	3	●		.630	16.0	.709	18.0	15.4	180	9.0	32	42.5	28.5	5.0	+ 5°	− 3°	.016	0.4	LR-S-3 × 5.8	RLR-20S
TC..52..	C07J-STUC☔06D08-OH	4	●	○	.276	7.0	.315	8.0	6.75	110	4.0	17.5	13.0	12.5	2.0	0°	− 11°	.008	0.2	LR-S-2 × 4.4	CLR-13S
TP..73..	C08K-STUP☔09D10-OH	4	●	○	.315	8.0	.394	10.0	7.7	125	5.0	21.5	16.5	14.5	2.5	+ 5°	− 10°	.016	0.4	LR-S-2.5 × 4.8	CLR-15S
TP..22..	C10M-STUP☔11D12-OH	4	●	○	.394	10.0	.472	12.0	9.6	150	6.0	25.0	20.0	17.5	2.5	+ 5°	− 7.5°	.016	0.4	LR-S-3 × 5.8	RLR-20S
	C12M-STUP☔11D14-OH	4	●		.472	12.0	.551	14.0	11.5	150	7.0	29.0	23.0	21.5	3.0	+ 5°	− 5°	.016	0.4	LR-S-3 × 5.8	RLR-20S
	C16Q-STUP☔11D18-OH	4	●		.630	16.0	.709	18.0	15.4	180	9.0	37.0	29.0	28.0	4.0	+ 5°	− 3°	.016	0.4	LR-S-3 × 5.8	RLR-20S

* "S" denotes steel shank, "C" denotes carbide shank

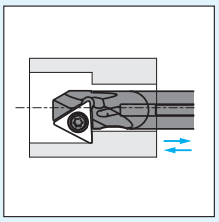
C-STZP(C) (Coolant through)

NEW

Minimum Bore Diameter .394"(10㎜) Carbide shank



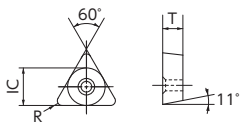
●Use right-hand inserts for machining backward
Use left-hand inserts for machining forward



Insert	Item number*	Stock R	ϕD_s (inch)	ϕD_s (㎜)	Min. bore Dia. ϕD_m (inch)	Min. bore Dia. ϕD_m (㎜)	Max. shoulder height g (inch)	Max. shoulder height g (㎜)	h (㎜)	L_1 (㎜)	f (㎜)	L_2 (㎜)	L_3 (㎜)	L_4 (㎜)	ϕd (㎜)	θ	α	Std. corner radius r_ε (inch)	Std. corner radius r_ε (㎜)	Clamp screw	Wrench
TC..52..	C06H-STZCR06D10-OH	○	.236	6	.394	10	.098	2.5	5.75	100	5.5	10.5	6	6	2.0	0°	-10°	.008	0.2	LR-S-2 × 4	CLR-13S
TP..73..	C08K-STZPR09D12-OH	○	.315	8	.472	12	.118	3	7.7	125	7	13.5	8.5	8.3	2.5	+5°	-10°	.016	0.4	LR-S-2.5 × 4.8	CLR-15S
	C10M-STZPR09D14-OH	○	.394	10	.551	14	.118	3	9.6	150	8	18.5	12	8.3	2.5	+5°	-7°	.118	0.4	LR-S-2.5 × 4.8	CLR-15S
TP..22..	C12M-STZPR11D175-OH	○	.472	12	.689	17.5	.177	4.5	11.5	150	10.5	22	14.5	9.6	3.0	+5°	-5°	.117	0.4	LR-S-3 × 5.8	RLR-20S

TPG
CBN / PCD

(inch)	IC	T
TP.. 22	1/4	1/8

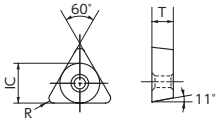


Steel	P	
Stainless Steel	M	
Cast Iron	K	● ● ● ●
Non-Ferrous Material	N	● ●
Heat Resistant Alloy	S	
Hardened Material	H	● ● ● ● ●

Shape	Item Number	ISO Item Number	Edge Prep.	IC	R	No. of edge	Length of edge	CBN (Brazed) Coated B5K	B52	Coated B6K	B36	B40	B23	B30	PCD PD1	PD2
	TPGW 2208 PT	TPGW 110302 PT	S0415	1/4	.008	3	.087		○							
	TPGW 221 PT	TPGW 110304 PT	S0415	1/4	.016	3	.079		○							
	TPGW 221 PT	TPGW 110304 PT	T0615	1/4	.016	3	.079						○			
	TPGW 221 PT	TPGW 110304 PT	S0635	1/4	.016	3	.079					○				
	TPGW 222 PT	TPGW 110308 PT	S0415	1/4	.031	3	.067		○							
	TPGW 222 PT	TPGW 110308 PT	S0635	1/4	.031	3	.067					○				
NEW 	TPMT 7308 PF	TPMT 090202 PF	None	7/32	.008	1	–									○
	TPMT 731 PF	TPMT 090204 PF	None	7/32	.016	1	–									○
	TPMT 2208 PF	TPMT 110302 PF	None	1/4	.008	1	–									○
	TPMT 221 PF	TPMT 110304 PF	None	1/4	.016	1	–									○

■60° Triangle Positive type Carbide / Cermet (TC..52)

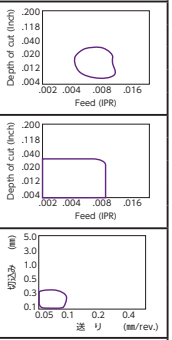
(inch)	IC	T
TC..52	5/32	1/16



		QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●
Cast Iron	K								●	●		●	●
Non-Ferrous Material	N				●	●	●	●	●	●			●
Heat Resistant Alloy	S	●	●	●	●								
Hardened Material	H	●	●	●									

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	Q15	C7Z
	TCGH 5204 TR/LB1	TCGH 060101 TR/LB1	5/32	.004								L				
	TCGH 5208 FR/LB1	TCGH 060102 FR/LB1	5/32	.008				Ⓛ		Ⓛ						
	TCGH 5208 TR/LB1	TCGH 060102 TR/LB1	5/32	.008								ⓇⓁ				
	TCGH 521 FR/LB1	TCGH 060104 FR/LB1	5/32	.016				Ⓛ		Ⓛ						
	TCGH 521 TR/LB1	TCGH 060104 TR/LB1	5/32	.016								L				
	TCGP 5204 FR/LF05	TCGP 060101 FR/LF05	5/32	.004				R								
	TCGP 5208 FR/LF05	TCGP 060102 FR/LF05	5/32	.008				RⓁ	Ⓡ	RⓁ						
	TCGP 5208 R/LF05	TCGP 060102 TR/LF05	5/32	.008									ⓇⓁ			Ⓡ
	TCGP 521 FR/LF05	TCGP 060104 FR/LF05	5/32	.016				R	Ⓡ	Ⓡ						
	TCGP 521 R/LF05	TCGP 060104 TR/LF05	5/32	.016									ⓇⓁ			Ⓡ
	TCGH 5208 FR/LK	TCGB 060102 FR/LK	5/32	.008				Ⓛ								
	TCGH 521 FR/LK	TCGB 060104 FR/LK	5/32	.016				Ⓛ								
	TCGD 52Y	TCGB 060102 TN	5/32	.008								○				
	TCGD 521	TCGB 060104 TN	5/32	.016								●				



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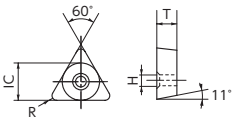
■60° Triangle Positive type Carbide / Cermet (TP..)

(inch)	IC	T
TP..22	1/4	1/8

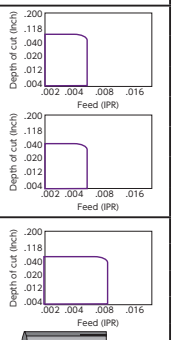
(inch)	IC	T
TP..73	7/32	3/32

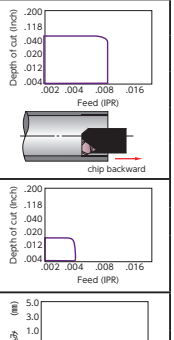


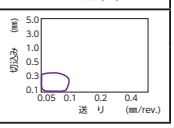
		QM3	DT4	DM4	TM4	VM1	ZM3	KM1	XT3	C7X	XN4	Q15	C7Z
Steel	P	●	●	●	●	●	●	●	●	●	●	●	●
Stainless Steel	M	●	●	●	●	●	●	●	●	●	●	●	●
Cast Iron	K								●	●		●	●
Non-Ferrous Material	N				●	●	●	●	●	●			●
Heat Resistant Alloy	S	●	●	●	●								
Hardened Material	H	●	●	●									

● : 1st Choice
● : Alternate choice

Shape	Item Number	ISO Item Number	IC	R	Carbide PVD Coated QM3	DT4	DM4	TM4	VM1	ZM3	KM1	Cermet XT3	C7X	XN4	Q15	C7Z
	TPGH 7308 FR/LB2	TPGH 090202 FR/LB2	7/32	.008				Ⓛ		Ⓛ						
	TPGH 731 FR/LB2	TPGH 090204 FR/LB2	7/32	.016				Ⓛ		Ⓛ						
	TPGH 731 R/LB2	TPGH 090204 TR/LB2	7/32	.016								R L				
	TPGH 732 R/LB2	TPGH 090208 FR/LB2	7/32	.031				Ⓛ		Ⓛ						
	TPGH 2204 R/LB3	TPGH 110301 TR/LB3	1/4	.004								L				
	TPGH 221 R/LB3	TPGH 110304 TR/LB3	1/4	.016								L				
	TPGH 222 R/LB3	TPGH 110308 TR/LB3	1/4	.031								L				
	TPGH 7304 FR/LF1	TPGH 090201 FR/LF1	7/32	.004				Ⓡ								
	TPGH 7308 FR/LF1	TPGH 090202 FR/LF1	7/32	.008				Ⓡ	Ⓡ	Ⓡ						
	TPGH 731 FR/LF1	TPGH 090204 FR/LF1	7/32	.016				Ⓡ	Ⓡ	Ⓡ						
	TPGH 732 FR/LF1	TPGH 090208 FR/LF1	7/32	.031				Ⓡ		Ⓡ						
	TPGH 2208 FR/LF1	TPGH 110302 FR/LF1	1/4	.008				Ⓡ	Ⓡ	Ⓡ						
	TPGH 221 FR/LF1	TPGH 110304 FR/LF1	1/4	.016				Ⓡ	Ⓡ	Ⓡ						
	TPGH 222 FR/LF1	TPGH 110308 FR/LF1	1/4	.031				Ⓡ		Ⓡ						
	TPGP 7308 R/LF1	TPGH 090202 TR/LF1	7/32	.008									Ⓡ			Ⓡ
	TPGP 731 R/LF1	TPGHP 090204 TR/LF1	7/32	.016									Ⓡ			Ⓡ
	TPGP 2208 R/LF1	TPGH 110302 TR/LF1	1/4	.008									Ⓡ			Ⓡ
	TPGP 221 R/LF1	TPGH 110304 TR/LF1	1/4	.016									Ⓡ			Ⓡ
	TPGP 222 R/LF1	TPGH 110308 TR/LF1	1/4	.031									Ⓡ			Ⓡ
	TPGP 7308 R/LFG	TPGH 090202 R/LFG	7/32	.008				R								Ⓡ
	TPGP 731 R/LFG	TPGH 090204 R/LFG	7/32	.016				R								Ⓡ
	TPGH 2208 R/LFG	TPGH 110302 R/LFG	1/4	.008				R								Ⓡ
	TPGH 221 R/LFG	TPGH 110304 R/LFG	1/4	.016				R								Ⓡ
	TPGP 7308 FR/LK	TPGH 090202 FR/LK	1/4	.008				Ⓛ								
	TPGP 7318 FR/LK	TPGH 090204 FR/LK	1/4	.016				Ⓛ								
	TPGP 7328 FR/LK	TPGH 090208 FR/LK	1/4	.031				Ⓛ								







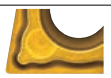
● : Stock ○ : 1-2 week delivery
R : Stock (Right-hand only)
Ⓡ : 1-2 week delivery (Right-hand only)
L : Stock (Left-hand only)
Ⓛ : 1-2 week delivery (Left-hand only)
💧 : Coolant through

*For F05, F1 and FG chipbreaker, right-hand inserts fit to right-hand toolholder
Note: F05, F1 and FG chipbreaker evacuates chips BACKWARD

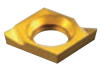
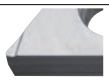
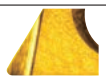
Cutting condition ➡V4

Chipbreakers for Mogul Bar

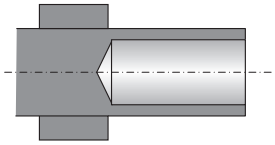
Molded Chipbreakers

Name	Chipbreaker Geometry	Features	ER Style	CC Style	CP Style	TC Style	TP Style
FG		●Evacuate chips BACKWARD at light depth of cut	—	—	—	—	
AM3		●Great combination of sharp edge and chip control	—			—	—
YL		●Great combination of sharpness and toughness ●Covers extremely wide range ●Excellent chip control	—		—	—	—
CL		●Double-positive geometry ●Sharp edge and low tool pressure ●Very wide chip control range	—		—	—	—
AZ7		●Excellent chip control at light feed and light depth of cut	—		—	—	—
ZR		●Covers a wide range of depth of cut under high-speed and low-feed conditions	—		—	—	—
AM5		●Provides both good cutting performance and chip control	—			—	—

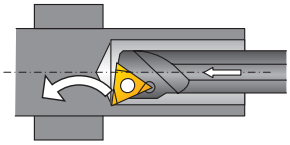
Ground Chipbreakers

Name	Chipbreaker Geometry	Features	ER Style	CC Style	CP Style	TC Style	TP Style
F05 • F1		●Exclusively designed for ID boring ●Evacuate chips BACKWARD					
S		●Sharp cutting edge with excellent chip control	—			—	—
U • U1		●Sharp cutting edge prevents work materials from work hardening	—		—	—	—
KHG		●Excellent chip control on finishing cuts ●For super high-precision machining	—		—	—	—
K		●Superb chip control on finishing applications	—	—	—		—
A • A1		●Tough cutting edge and good chip control ●General-purpose ID chipbreaker	—	—		—	—
A2		●Sharp cutting edge due to large rake angle		—	—	—	—
B1•B2•B3		●Stable cutting in boring thanks to sharp and tough cutting edge	—	—	—		

Boring on CNC Swiss-Type Lathes



Blind hole due to bar stock



Typical inserts direct chips forward
Then packed chips damage and break cutting edges

FG, F1 and F05 chipbreakers direct chips backward and prevent cuttting edges from breaking

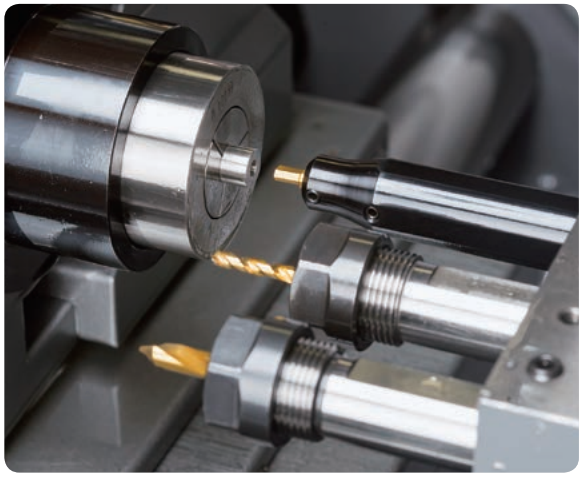
Note: Use right-hand inserts with FG, F1 and F05 chipbreakers for right-hand boring bars

W



Shaper

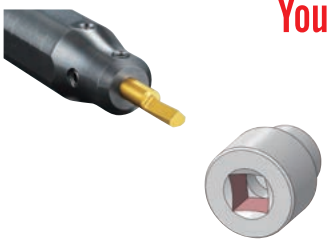
SHAPER DUO



■Hexagon Socket



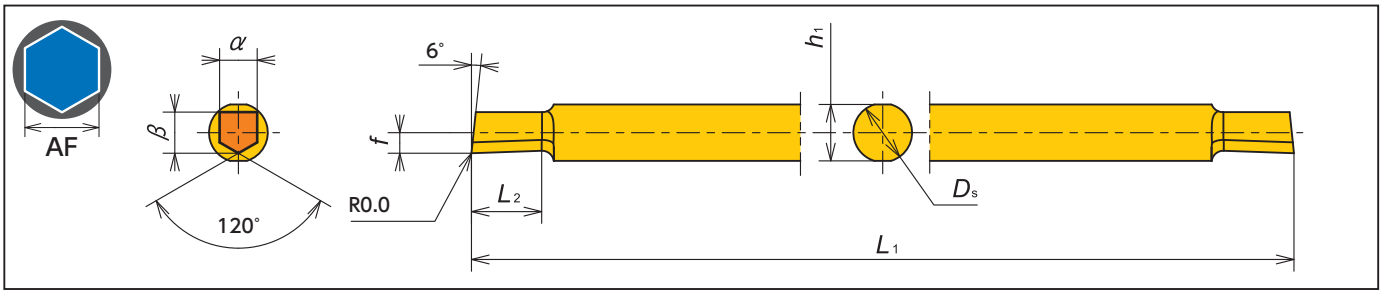
■Square Socket



WATCH ON YouTube

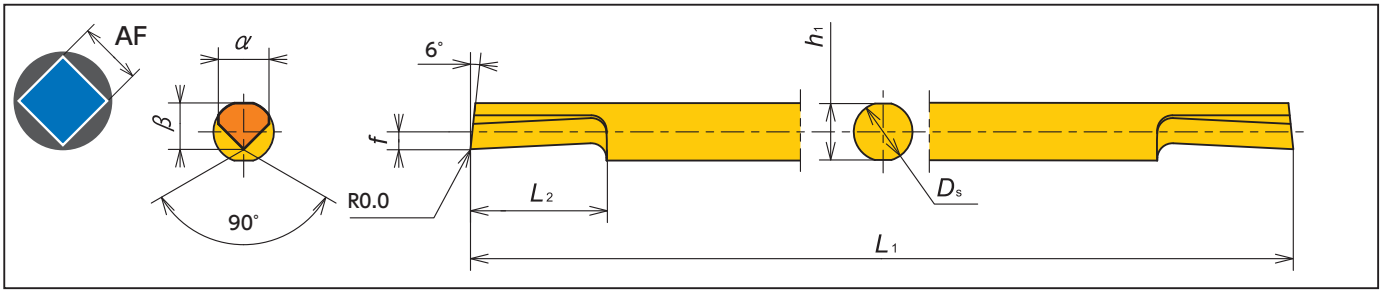
- Perfect fit for back spinde of Swiss machine
- Achieves good corner edge sharpness
- Less tool pressure than Rotary-Broaching
- Easy to adjust for correct dimension
- Economical double-ended insert bar

Insert Bar -Hexagon-



Item Number	Base AF (mm)	HEX Standard size range (mm)	AF range (Inch)	AF range (mm)	D_s (mm)	L_1 (mm)	L_2 (mm)	h_1 (mm)	α (mm)	β (mm)	f (mm)	Coated Carbide TM4
SSP020N1130H	HEX 1.5	HEX 1.5 – 2.0	.055 – .078	1.4 – 2.0	ϕ 2	50	3.0	1.8	1.1	0.8	0.40	●
SSP020N1430H	HEX 2.0	HEX 2.0 – 2.5	.075 – .102	1.9 – 2.6	ϕ 2	50	3.0	1.8	1.4	1.1	0.55	●
SSP030N1940H	HEX 3.0	HEX 2.5 – 3.5	.095 – .141	2.4 – 3.6	ϕ 3	50	4.0	2.8	1.9	1.6	0.8	●
SSP040N2450H	HEX 4.0	HEX 3.5 – 4.5	.134 – .181	3.4 – 4.6	ϕ 4	60	5.0	3.8	2.4	2.6	1.3	●
SSP050N3260H	HEX 5.0	HEX 4.5 – 6.0	.174 – .244	4.4 – 6.2	ϕ 5	70	6.0	4.8	3.2	3.4	1.70	●
SSP060N42120H	HEX 6.0	HEX 6.0 – 8.0	.233 – .322	5.9 – 8.2	ϕ 6	80	12.0	5.6	4.2	4.0	2.00	●
SSP080N62160H	HEX 8.0	HEX 8.0 – 12.0	.311 – .480	7.9 – 12.2	ϕ 8	80	16.0	7.6	6.2	4.7	2.35	●

Insert Bar -Square-



Item Number	Base AF (mm)	AF range (Inch)	AF range (mm)	D_s (mm)	L_1 (mm)	L_2 (mm)	h_1 (mm)	α (mm)	β (mm)	f (mm)	Coated Carbide TM4
SSP020N1740S	2.0	.075 – .090	1.9 – 2.3	ϕ 2.0	50	4.0	1.8	1.70	1.60	0.70	●
SSP025N1940S	2.5	.087 – .102	2.2 – 2.6	ϕ 2.5	50	4.0	2.3	1.95	1.80	0.65	●
SSP030N2260S	3.0	.099 – .118	2.5 – 3.0	ϕ 3.0	50	6.0	2.8	2.20	2.05	0.65	●
SSP035N2760S	3.5	.115 – .145	2.9 – 3.7	ϕ 3.5	60	6.0	3.3	2.70	2.25	0.60	●
SSP040N3380S	4.0	.142 – .181	3.6 – 4.6	ϕ 4.0	60	8.0	3.8	3.35	3.05	1.15	●
SSP050N39100S	5.0	.178 – .212	4.5 – 5.4	ϕ 5.0	70	10.0	4.8	3.90	3.95	1.55	●
SSP060N47120S	6.0	.209 – .259	5.3 – 6.6	ϕ 6.0	80	12.0	5.6	4.75	4.50	1.70	●
SSP080N58160S	8.0	.256 – .318	6.5 – 8.1	ϕ 8.0	80	16.0	7.6	5.80	5.50	1.70	●

● : Stock ○ : 1-2 week delivery

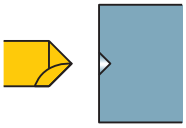
Sleeves ➡W7-10

Comparison Chart of HEX Socket Machining

	Tool Pressure	Cycle Time	Pliability	Tool Cost	
Shaper Duo 	◎	△ ＊Can be off-set by over-wrapping operation	○	◎	●Less tool pressure-especially on small diameter parts ●One size can cover several socket sizes
Broach Tool	△	○	×	△	●Need to have tools for each socket size

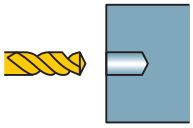
Process Chart

① Center drilling



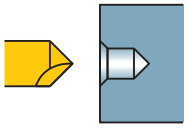
Select a pilot hole drill which is bigger dia. than AF.

② Drilling (Pilot hole)



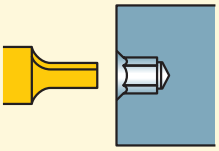
Select a drill with same dia. as AF and machine a bit deeper because burrs may cause chipping on shaper insert

③ Chamfering



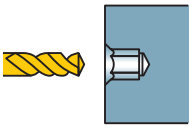
Chamfer with the same pilot hole drill as ① (Chamfer can be done at same time as ①).

④ Shaper tool



Machine HEX portion rotating 60 degrees 6 times

⑤ Deburring



Finish and deburr with the same drill as in process②
☆Reduce cutting conditions due to heavy interruption

SHAPER DUO Process Chart

HEX Standard	Tool	Pilot bore Dia. (mm)	Total DOC /side (mm)	Number of passes: Total pass /side	Roughing pass 0.025mm	Finishing pass 0.010mm	Estimated cycle time *: ISO 2936 standard depth of Hex hole (mm)	Whole process ①-⑤	Process④ Shaper
HEX 1.5	**SSP020N1130H**	1.5	0.116	6	5	1	2	39 sec	14 sec
HEX 2.0	**SSP020N1430H**	2.0	0.155	7	6	1	2.5	44 sec	16 sec
HEX 2.5	**SSP030N1940H**	2.5	0.193	9	8	1	3	50 sec	20 sec
HEX 3.0	**SSP030N1940H**	3.0	0.232	10	9	1	3.5	55 sec	23 sec
HEX 4.0	**SSP040N2450H**	4.0	0.309	13	12	1	5	73 sec	33 sec
HEX 5.0	**SSP050N3260H**	5.0	0.387	17	16	1	6	90 sec	46 sec
HEX 6.0	**SSP060N42120H**	6.0	0.464	20	19	1	8	117 sec	63 sec
HEX 8.0	**SSP080N62160H**	8.0	0.619	26	25	1	10	155 sec	92 sec

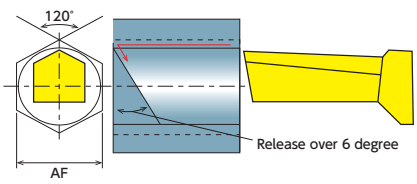
＊Pilot bore diameter is same as AF
＊Using Carbide drill

＊Shaper cutting conditions
Feed : 3000 mm/min
DOC : 0.025 mm (Roughing), 0.010 mm (Finishing)

Recommended Cutting Conditions

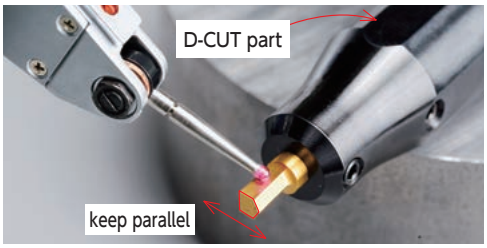
Feed : 3000 mm/min (120 IPM)
DOC : Roughing ··· 0.025 mm (.0010") + Finishing ··· 0.010 mm (.0004")

Program Example ➡W5



SHAPER DUO Set-up Instruction -Hexagonal

■Outside machine

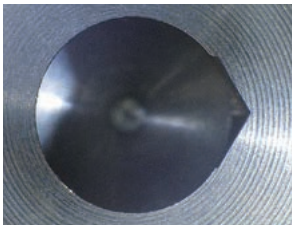
① 

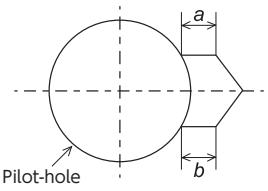
- Set the insert bar in the sleeve and check the parallelism of the flat portion of the sleeve and the insert bar.
- Minimize the overhang of the insert.

■Inside machine

② 

- Set the sleeve into the tool post and make sure the sleeve is set parallel.
- Minimize sleeve overhang.

③ 



- Machine one angle a bit wider than the drilled hole.
  *Increase the number of machining passes because the insert may get chipped with increased depth of cut. (0.025mm×5pass is recommended)
  No chamfering process is required for measuring purpose.
- Measure the length of both [a] and [b] with comparator or magnifier.
- Adjust centerline height by rotating the sleeve until you get the same length for [a] and [b].(The difference should be less than .0008")
  *If the straight is not seen with increased passes, please reset the insert and the sleeve.
  Please make sure both the insert and the sleeve are set up correctly.

④ Machine Hexagonal shape

- Run full HEX machining program.



SHAPER DUO Programming Code Examples from Machine Builders in Metric

Note : The codes and numbers may vary by machine type. Please contact the machine builder for details.
Programming code example for HEX 3.0mm. **AF : 3.0mm, Depth : 2.7mm, Pilot drill diameter : 3.0mm**

CITIZEN

Main Program Sequence

```
M25
M78 S0 ·····I
Shaper T****
G50 U1.6 ·····II
G0 X2.9 Z-2.0 T** ·····III
M98 P2100 L14 ·····IV
M98 P2200 ·····V

M78 S60 ·····I
G0 X2.9 Z-2.0
M98 P2100 L14
M98 P2200
```
<a>

Repeat <a> program sequence 4 more times to complete the cuts at S120, S180, S240, S300 (represents 120˚, 180˚, 240˚, 300˚).

```
M20
G0 Z-10.0
G50 U-2.0
G0 U0 W0 T0
M1
```

Sub-Program Sequence #1 for Roughing

```
N2100
G4 U0.02 ·····A
G98 G1 Z2.7 F3000 ·····B
G4 U0.02
U-0.2 W-0.018 ·····C
G4 U0.02
G0 Z-2.0
G4 U0.02
U0.25 ·····D
M99
```

Sub-Program Sequence #2 for Finishing

```
N2200
G98 G1 X3.61 Z-2.0 F1000 ·····E
G4 U0.02
Z2.7 F3000
G4 U0.02
U-0.2 W-0.018
G4 U0.02
G0 Z-2.0
M99
```

STAR

Main Program Sequence

```
M25
Shaper T****
G50 U1.6 ·····II
M8
G0 X2.9 Z-2.0 C0 T** ·····I, III
M98 P2100 L14 ·····IV
M98 P2200 ·····V

G0 C60.0 ·····I
G0 X2.9 Z-2.0
M98 P2100 L14
M98 P2200
```
<a>

Repeat <a> program sequence 4 more times to complete the cuts at C120.0, C180.0, C240.0, C300.0 (represents 120˚, 180˚, 240˚, 300˚).

```
G0 Z-2.0
G50 U-2.0
G0 T0
G28 W0
M1
```

Sub-Program Sequence #1 for Roughing

```
O2100
G4 U0.02 ·····A
G98 G1 Z2.7 F3000 ·····B
G4 U0.02
U-0.2 W-0.018 ·····C
G4 U0.02
G0 Z-2.0
G4 U0.02
U0.25 ·····D
M99
```

Sub-Program Sequence #2 for Finishing

```
O2200
G98 G1 X3.61 Z-2.0 F1000 ·····E
G4 U0.02
Z2.7 F3000
G4 U0.02
U-0.2 W-0.018
G4 U0.02
G0 Z-2.0
M99
```

TSUGAMI

Main Program Sequence

```
M105
M150
G28 H0 ·····I
M182
Shaper T****
G50 U1.6 ·····II
G0 X2.9 Z2.0 T** ·····III
M98 P2100 L14 ·····IV
M98 P2200 ·····V
M183

G0 C60 ·····I
M182
G0 X2.9 Z2.0
M98 P2100 L14
M98 P2200
M183
```
<a>

Repeat <a> program sequence 4 more times to complete the cuts at C120, C180, C240, C300 (represents 120˚, 180˚, 240˚, 300˚).

```
M151
G0 Z10.0
G50 U2.0
G0 U0 W0 T0
M1
```

Sub-Program Sequence #1 for Roughing

```
O2100
G4 U0.02 ·····A
G98 G1 Z-2.7 F3000 ·····B
G4 U0.02
U-0.2 W0.018 ·····C
G4 U0.02
G0 Z2.0
G4 U0.02
U0.25 ·····D
M99
```

Sub-Program Sequence #2 for Finishing

```
O2200
G98 G1 X3.61 Z2.0 F1000 ·····E
G4 U0.02
Z-2.7 F3000
G4 U0.02
U-0.2 W0.018
G4 U0.02
G0 Z2.0
M99
```

I. Index the sub-spindle 6 times in 60 degree increments.

II. Specify the coordinate system shift command (in X axis direction) for the tool. [2 x f, where f is tool dimension located in catalog].
- A positive direction shift is recommended for easier programming.

III. Execute the positioning of the tool.
- X position should be 0.1 mm less than pilot drill diameter.
- Z position should be off-set 2.0 mm from material to achieve program feed rate.

IV. Go to the Sub-Program #1.
- Sequence runs 14 times. First cutting point X2.9 and final cutting point X3.6, with 0.05 DOC (for diameter) each time. (3.6 - 2.9 / 0.05 = 14 times)

A. Specify dwell time. This allows the program and machine to stay synchronized.

B. Cut into part 2.7mm. F3000 is recommended feed to be used for most materials; including Titanium Alloy and Stainless Steel.

C. This code backs off the tool with an angle greater than 6 degrees (10 degrees used in example).

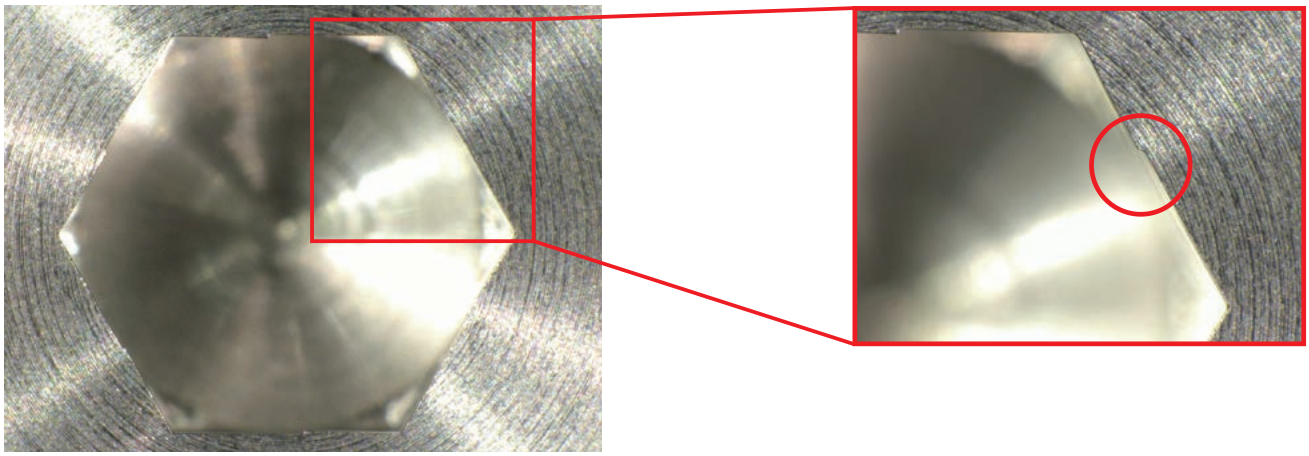
D. Return the X position + 0.05mm (the DOC for diameter).

V. Go to the Sub-Program #2, for finishing sequence.

E. Finishing operation with 0.01mm DOC (X 3.61) is recommended for better surface finish.

SHAPER DUO Trouble Shooting

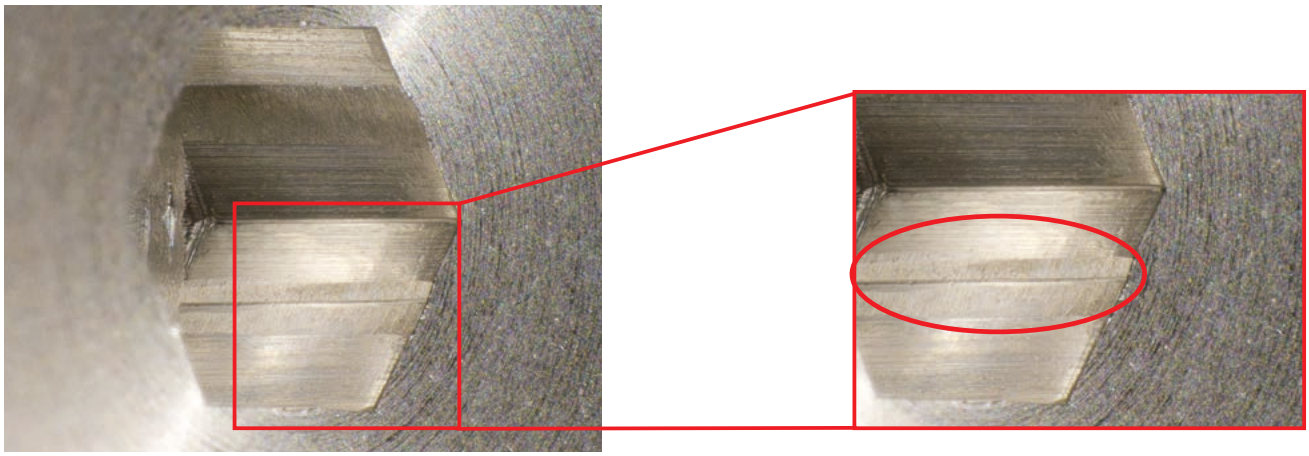
Problem: Step on sides



Cause: Incorrect tool set-up
(Center-line shift)

Solution: Machine one angle and make sure both [a] and [b] lengths are identical, rotating the sleeve if necessary

Problem: Wall dented



Cause: Pilot hole remaining

Solution: Need pilot hole tool's offset

Problem: Wall tapered

Solution:
- Smaller depth of cut
- Less tool overhang

Problem: Chuck is slipping / Insert Chipped

Solution:
- Run at 3000 mm/min (120 IPM) feed rate
- Smaller depth of cut

- 3000 mm/min (120 IPM) feed rate can cover most materials including Titanium alloy and Stainless steel.
- Too slow or too fast of a feed rate may cause excessive tool pressure for the Work piece and Tool.

SPLASH DUO - Stick Duo Hyper with Coolant through -

HY-NBH-OH (Coolant through)

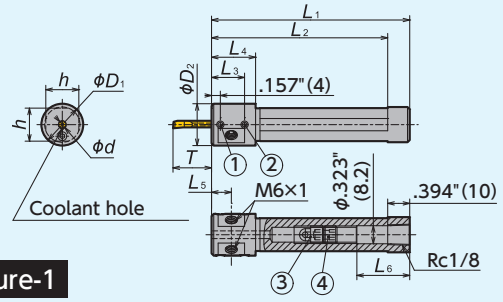


Figure-1

HY-NBH-OH (Coolant through)

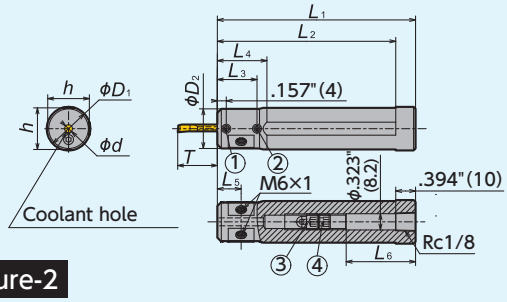
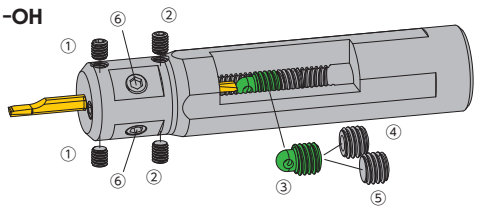


Figure-2

Item Number	Stock	Figure	φ d		φD1		φD2	h	L1	L2	L3	L4	L5	L6	Overhang Length of Bar T			
															Min.		Max.	
			(Inch)	(mm)	(Inch)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Inch)	(mm)	(Inch)	(mm)
HY-NBH02016G-OH	●	1	.079	2	.630	16	19	15	90	80	15	19	9.5	29	.197	5.0	.709	18.0
HY-NBH02516G-OH	●	1	.098	2.5	.630	16	19	15	90	80	15	19	9.5	30	.248	6.3	.768	19.5
HY-NBH03016G-OH	●	1	.118	3	.630	16	19	15	90	80	15	19	9.5	31	.295	7.5	.827	21.0
HY-NBH03516G-OH	●	1	.138	3.5	.630	16	19	15	90	80	15	19	9.5	23	.346	8.8	.965	24.5
HY-NBH04016G-OH	●	1	.157	4	.630	16	19	15	90	80	20	24	12	23	.394	10.0	1.102	28.0
HY-NBH05016G-OH	●	1	.197	5	.630	16	19	15	90	80	20	24	12	16	.492	12.5	1.378	35.0
HY-NBH02019J-OH	●	2	.079	2	3/4	19.05	19.05	18	110	100	15	—	9.5	49	.197	5.0	.709	18.0
HY-NBH02519J-OH	●	2	.098	2.5	3/4	19.05	19.05	18	110	100	15	—	9.5	50	.248	6.3	.768	19.5
HY-NBH03019J-OH	●	2	.118	3	3/4	19.05	19.05	18	110	100	15	—	9.5	51	.295	7.5	.827	21.0
HY-NBH03519J-OH	●	2	.138	3.5	3/4	19.05	19.05	18	110	100	15	—	9.5	43	.346	8.8	.965	24.5
HY-NBH04019J-OH	●	2	.157	4	3/4	19.05	19.05	18	110	100	20	—	12	43	.394	10.0	1.102	28.0
HY-NBH05019J-OH	●	2	.197	5	3/4	19.05	19.05	18	110	100	20	—	12	36	.492	12.5	1.378	35.0
HY-NBH02020J-OH	●	2	.079	2	.787	20	20	19	110	100	15	—	9.5	49	.197	5.0	.709	18.0
HY-NBH02520J-OH	●	2	.098	2.5	.787	20	20	19	110	100	15	—	9.5	50	.248	6.3	.768	19.5
HY-NBH03020J-OH	●	2	.118	3	.787	20	20	19	110	100	15	—	9.5	51	.295	7.5	.827	21.0
HY-NBH03520J-OH	●	2	.138	3.5	.787	20	20	19	110	100	15	—	9.5	43	.346	8.8	.965	24.5
HY-NBH04020J-OH	●	2	.157	4	.787	20	20	19	110	100	20	—	12	43	.394	10.0	1.102	28.0
HY-NBH05020J-OH	●	2	.197	5	.787	20	20	19	110	100	20	—	12	36	.492	12.5	1.378	35.0
HY-NBH02022X-OH	●	2	.079	2	.866	22	20	21	120	110	15	25	9.5	59	.197	5.0	.709	18.0
HY-NBH02522X-OH	●	2	.098	2.5	.866	22	20	21	120	110	15	25	9.5	60	.248	6.3	.768	19.5
HY-NBH03022X-OH	●	2	.118	3	.866	22	20	21	120	110	15	25	9.5	61	.295	7.5	.827	21.0
HY-NBH03522X-OH	●	2	.138	3.5	.866	22	20	21	120	110	15	25	9.5	53	.346	8.8	.965	24.5
HY-NBH04022X-OH	●	2	.157	4	.866	22	20	21	120	110	20	25	12	53	.394	10.0	1.102	28.0
HY-NBH05022X-OH	●	2	.197	5	.866	22	20	21	120	110	20	25	12	46	.492	12.5	1.378	35.0
HY-NBH02025.0K-OH	●	2	.079	2	.984	25.0	20	24	125	115	15	25	9.5	64	.197	5.0	.709	18.0
HY-NBH02525.0K-OH	●	2	.098	2.5	.984	25.0	20	24	125	115	15	25	9.5	65	.248	6.3	.768	19.5
HY-NBH03025.0K-OH	●	2	.118	3	.984	25.0	20	24	125	115	15	25	9.5	66	.295	7.5	.827	21.0
HY-NBH03525.0K-OH	●	2	.138	3.5	.984	25.0	20	24	125	115	15	25	9.5	58	.346	8.8	.965	24.5
HY-NBH04025.0K-OH	●	2	.157	4	.984	25.0	20	24	125	115	20	25	12	58	.394	10.0	1.102	28.0
HY-NBH05025.0K-OH	●	2	.197	5	.984	25.0	20	24	125	115	20	25	12	51	.492	12.5	1.378	35.0
HY-NBH02025.4K-OH	●	2	.079	2	1	25.4	20	24	125	115	15	25	9.5	64	.197	5.0	.709	18.0
HY-NBH02525.4K-OH	●	2	.098	2.5	1	25.4	20	24	125	115	15	25	9.5	65	.248	6.3	.768	19.5
HY-NBH03025.4K-OH	●	2	.118	3	1	25.4	20	24	125	115	15	25	9.5	66	.295	7.5	.827	21.0
HY-NBH03525.4K-OH	●	2	.138	3.5	1	25.4	20	24	125	115	15	25	9.5	58	.346	8.8	.965	24.5
HY-NBH04025.4K-OH	●	2	.157	4	1	25.4	20	24	125	115	20	25	12	58	.394	10.0	1.102	28.0
HY-NBH05025.4K-OH	●	2	.197	5	1	25.4	20	24	125	115	20	25	12	51	.492	12.5	1.378	35.0

Parts for SPLASH DUO

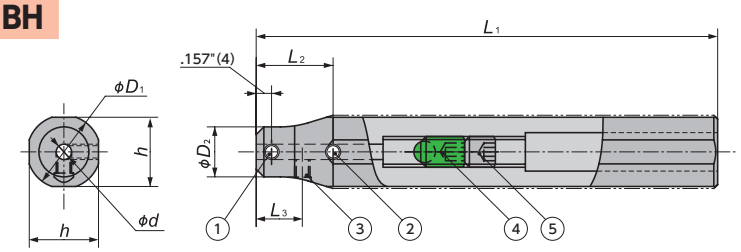
Item Number	Clamp Screw		Overhang Adjustment		
	①	②	③	④	⑤
HY-NBH ... -OH	SS04045FS	SS0406F	SS0811R-OH	SS0806F-OH (Through hole)	SS0806F
	M6 Screw		Wrench		
	⑥		for ①②	for ③④⑤	for ⑥
	SS0605SC		LW-2	LW-4×104	LW-3

● : Stock　　💧 : Coolant through

Shaper

STICK DUO HYPER

HY-NBH



Spare Parts

Item Number	Overhang Adjustment		Wrench	
	④	⑤	for①②③	for④⑤
HY-NBH ... K	SS0812R	SS0808F	LW-2	LW-4×104

Please refer to ϕd to find correct-size inserts (bars)

Item Number	Stock	φd (Inch)	φd (mm)	φD1 (Inch)	φD1 (mm)	φD2 (mm)	h (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Clamp Screws ①	②	③
HY-NBH02016H	○	.079	2.0	.630	16	11	15	100	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH02516H	○	.098	2.5	.630	16	11.5	15	100	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03016H	○	.118	3.0	.630	16	12	15	100	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03516H	○	.138	3.5	.630	16	12.5	15	100	20	12	SS04045FS	SS0404F	SS0404F
HY-NBH04016H	○	.157	4.0	.630	16	13	15	100	20	12	SS04045FS	SS0404F	SS0404F
HY-NBH05016H	○	.197	5.0	.630	16	14	15	100	20	12	SS04045FS	SS0404F	SS0404F
HY-NBH02019K	●	.079	2.0	3/4	19.05	11	18	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH02519K	●	.098	2.5	3/4	19.05	11.5	18	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03019K	●	.118	3.0	3/4	19.05	12	18	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03519K	●	.138	3.5	3/4	19.05	12.5	18	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH04019K	●	.157	4.0	3/4	19.05	13	18	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH05019K	●	.197	5.0	3/4	19.05	14	18	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH02020K	○	.079	2.0	.787	20	11	19	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH02520K	○	.098	2.5	.787	20	11.5	19	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03020K	○	.118	3.0	.787	20	12	19	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03520K	○	.138	3.5	.787	20	12.5	19	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH04020K	○	.157	4.0	.787	20	13	19	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH05020K	○	.197	5.0	.787	20	14	19	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH02022K	●	.079	2.0	.866	22	11	21	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH02522K	●	.098	2.5	.866	22	11.5	21	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03022K	●	.118	3.0	.866	22	12	21	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03522K	●	.138	3.5	.866	22	12.5	21	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH04022K	●	.157	4.0	.866	22	13	21	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH05022K	●	.197	5.0	.866	22	14	21	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH02025K-MET	○	.079	2.0	.984	25	11	24	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH02525K-MET	○	.098	2.5	.984	25	11.5	24	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03025K-MET	○	.118	3.0	.984	25	12	24	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03525K-MET	○	.138	3.5	.984	25	12.5	24	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH04025K-MET	○	.157	4.0	.984	25	13	24	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH05025K-MET	○	.197	5.0	.984	25	14	24	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH02025K	●	.079	2.0	1	25.4	11	24	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH02525K	●	.098	2.5	1	25.4	11.5	24	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03025K	●	.118	3.0	1	25.4	12	24	125	15	9.5	SS04045FS	SS0406F	SS0404F
HY-NBH03525K	●	.138	3.5	1	25.4	12.5	24	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH04025K	●	.157	4.0	1	25.4	13	24	125	20	12	SS04045FS	SS0406F	SS0404F
HY-NBH05025K	●	.197	5.0	1	25.4	14	24	125	20	12	SS04045FS	SS0406F	SS0404F

Precaution for Shaper duo with STICK DUO HYPER sleeve

● Set insert in this position

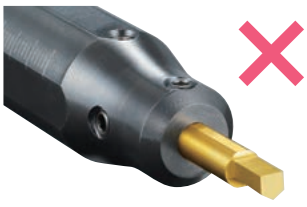


Hexagon

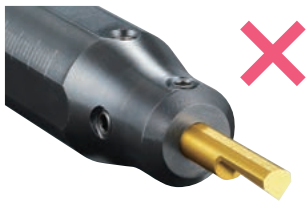


Square

● To avoid insert chipping don't set insert in this position



Hexagon



Square

● : Stock ○ : 1-2 week delivery 💧: Coolant through

Insert bars ➡W2 Cutting condition ➡W3

STICK DUO - Sleeves for ID machining -

NBH

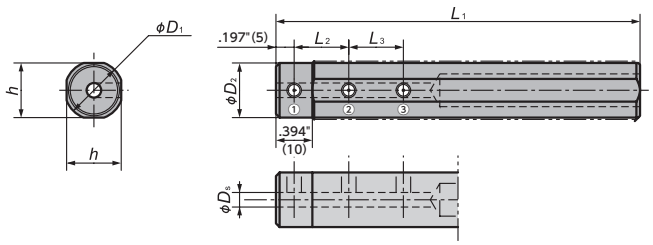


Figure-1

NBH

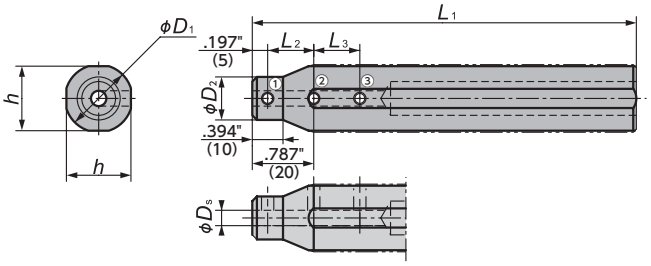


Figure-2

Item number	Figure	Stock	ϕDs (Inch)	ϕDs (mm)	ϕD1 (Inch)	ϕD1 (mm)	ϕD2 (mm)	h (mm)	L1 (mm)	L2 (mm)	L3 (mm)	Clamp screw ①	Clamp screw ②	Clamp screw ③	Wrench
NBH02015H	1	○	.079	2.0	5/8		15	15	100	10	—	SS0406F	SS0406F	—	LW-2
NBH02515H	1	○	.098	2.5	5/8		15	15	100	10	—	SS0406F	SS0406F	—	LW-2
NBH03015H	1	○	.118	3.0	5/8		15	15	100	10	10	SS0404F	SS0404F	SS0404F	LW-2
NBH03515H	1	○	.138	3.5	5/8		15	15	100	10	10	SS0404F	SS0404F	SS0404F	LW-2
NBH04015H	1	○	.157	4.0	5/8		15	15	100	15	15	SS0404F	SS0404F	SS0404F	LW-2
NBH04515H	1	○	.177	4.5	5/8		15	15	100	15	15	SS0404F	SS0404F	SS0404F	LW-2
NBH05015H	1	○	.197	5.0	5/8		15	15	100	15	15	SS0404F	SS0404F	SS0404F	LW-2
NBH06015H	1	○	.236	6.0	5/8		15	15	100	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH08015H	1	○	.315	8.0	5/8		15	15	100	20	20	SS0403F	SS0403F	SS0403F	LW-2
NBH02016H	1	○	.079	2.0	.630	16	15	15	100	10	—	SS0406F	SS0406F	—	LW-2
NBH02516H	1	○	.098	2.5	.630	16	15	15	100	10	—	SS0406F	SS0406F	—	LW-2
NBH03016H	1	○	.118	3.0	.630	16	15	15	100	10	10	SS0404F	SS0404F	SS0404F	LW-2
NBH03516H	1	○	.138	3.5	.630	16	15	15	100	10	10	SS0404F	SS0404F	SS0404F	LW-2
NBH04016H	1	○	.157	4.0	.630	16	15	15	100	15	15	SS0404F	SS0404F	SS0404F	LW-2
NBH04516H	1	○	.177	4.5	.630	16	15	15	100	15	15	SS0404F	SS0404F	SS0404F	LW-2
NBH05016H	1	○	.197	5.0	.630	16	15	15	100	15	15	SS0404F	SS0404F	SS0404F	LW-2
NBH06016H	1	●	.236	6.0	.630	16	15	15	100	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH07016H	1	○	.276	7.0	.630	16	15	15	100	20	20	SS0403F	SS0404F	SS0404F	LW-2
NBH08016H	1	●	.315	8.0	.630	16	15	15	100	20	20	SS0403F	SS0403F	SS0403F	LW-2
NBH02019K	1	○	.079	2.0	3/4		18	18	125	10	—	SS0408F	SS0408F	—	LW-2
NBH02519K	1	○	.098	2.5	3/4		18	18	125	10	—	SS0408F	SS0408F	—	LW-2
NBH03019K	1	○	.118	3.0	3/4		18	18	125	10	10	SS0406F	SS0406F	SS0406F	LW-2
NBH03519K	1	○	.138	3.5	3/4		18	18	125	10	10	SS0406F	SS0406F	SS0406F	LW-2
NBH04019K	1	○	.157	4.0	3/4		18	18	125	15	15	SS0406F	SS0406F	SS0406F	LW-2
NBH04519K	1	○	.177	4.5	3/4		18	18	125	15	15	SS0406F	SS0406F	SS0406F	LW-2
NBH05019K	1	○	.197	5.0	3/4		18	18	125	15	15	SS0406F	SS0406F	SS0406F	LW-2
NBH06019K	1	●	.236	6.0	3/4		18	18	125	20	20	SS0406F	SS0406F	SS0406F	LW-2
NBH07019K	1	○	.276	7.0	3/4		18	18	125	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH08019K	1	●	.315	8.0	3/4		18	18	125	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH10019K	1	○	.394	10.0	3/4		18	18	125	20	20	SS0403F	SS0404F	SS0404F	LW-2
NBH02020K	2	○	.079	2.0	.787	20	11	19	125	10	—	SS0404F	SS0404F	—	LW-2
NBH02520K	2	○	.098	2.5	.787	20	11	19	125	10	—	SS0404F	SS0404F	—	LW-2
NBH03020K	2	○	.118	3.0	.787	20	12	19	125	10	10	SS0404F	SS0404F	SS0406F	LW-2
NBH03520K	2	○	.138	3.5	.787	20	12	19	125	10	10	SS0404F	SS0404F	SS0406F	LW-2
NBH04020K	2	○	.157	4.0	.787	20	13	19	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH04520K	2	○	.177	4.5	.787	20	13	19	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH05020K	2	○	.197	5.0	.787	20	14	19	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH06020K	2	●	.236	6.0	.787	20	15	19	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH07020K	2	○	.276	7.0	.787	20	16	19	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH08020K	2	●	.315	8.0	.787	20	17	19	125	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH10020K	2	○	.394	10.0	.787	20	19	19	125	20	20	SS0404F	SS0404F	SS0404F	LW-2

Item number	Figure	Stock	ϕD_s (Inch)	ϕD_s (mm)	ϕD_1 (Inch)	ϕD_1 (mm)	ϕD_2 (mm)	h_1 (mm)	L_1 (mm)	L_2 (mm)	L_3 (mm)	Clamp screw ①	Clamp screw ②	Clamp screw ③	Wrench
NBH02022K	2	○	.079	2.0	.866	22	11	21	125	10	—	SS0404F	SS0406F	—	LW-2
NBH02522K	2	○	.098	2.5	.866	22	11	21	125	10	—	SS0404F	SS0406F	—	LW-2
NBH03022K	2	○	.118	3.0	.866	22	12	21	125	10	10	SS0404F	SS0406F	SS0408F	LW-2
NBH03522K	2	○	.138	3.5	.866	22	12	21	125	10	10	SS0404F	SS0406F	SS0406F	LW-2
NBH04022K	2	○	.157	4.0	.866	22	13	21	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH04522K	2	○	.177	4.5	.866	22	13	21	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH05022K	2	○	.197	5.0	.866	22	14	21	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH06022K	2	●	.236	6.0	.866	22	15	21	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH07022K	2	○	.276	7.0	.866	22	16	21	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH08022K	2	●	.315	8.0	.866	22	17	21	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH10022K	2	○	.394	10.0	.866	22	19	21	125	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH12022K	2	○	.472	12.0	.866	22	21	21	125	25	25	SS0404F	SS0404F	SS0404F	LW-2
NBH02023K	2	○	.079	2.0	.906	23	11	21	125	10	—	SS0404F	SS0406F	—	LW-2
NBH02523K	2	○	.098	2.5	.906	23	11	21	125	10	—	SS0404F	SS0406F	—	LW-2
NBH03023K	2	○	.118	3.0	.906	23	12	21	125	10	10	SS0404F	SS0406F	SS0408F	LW-2
NBH03523K	2	○	.138	3.5	.906	23	12	21	125	10	10	SS0404F	SS0406F	SS0406F	LW-2
NBH04023K	2	○	.157	4.0	.906	23	13	21	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH04523K	2	○	.177	4.5	.906	23	13	21	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH05023K	2	○	.197	5.0	.906	23	14	21	125	15	15	SS0404F	SS0406F	SS0406F	LW-2
NBH06023K	2	○	.236	6.0	.906	23	15	21	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH08023K	2	○	.315	8.0	.906	23	17	21	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH10023K	2	○	.394	10.0	.906	23	19	21	125	20	20	SS0404F	SS0404F	SS0404F	LW-2
NBH12023K	2	○	.472	12.0	.906	23	21	21	125	25	25	SS0404F	SS0404F	SS0404F	LW-2
NBH02025K-MET	2	○	.079	2.0	.984	25	11	24	125	10	—	SS0404F	SS0406F	—	LW-2
NBH02525K-MET	2	○	.098	2.5	.984	25	11	24	125	10	—	SS0404F	SS0406F	—	LW-2
NBH03025K-MET	2	○	.118	3.0	.984	25	12	24	125	10	10	SS0404F	SS0406F	SS0408F	LW-2
NBH03525K-MET	2	○	.138	3.5	.984	25	12	24	125	10	10	SS0404F	SS0406F	SS0408F	LW-2
NBH04025K-MET	2	○	.157	4.0	.984	25	13	24	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH04525K-MET	2	○	.177	4.5	.984	25	13	24	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH05025K-MET	2	○	.197	5.0	.984	25	14	24	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH06025K-MET	2	●	.236	6.0	.984	25	15	24	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH07025K-MET	2	○	.276	7.0	.984	25	16	24	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH08025K-MET	2	●	.315	8.0	.984	25	17	24	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH10025K-MET	2	○	.394	10.0	.984	25	19	24	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH12025K-MET	2	○	.472	12.0	.984	25	21	24	125	25	25	SS0404F	SS0404F	SS0404F	LW-2
NBH02025K	2	○	.079	2.0	1	25.4	11	24	125	10	—	SS0404F	SS0406F	—	LW-2
NBH02525K	2	○	.098	2.5	1	25.4	11	24	125	10	—	SS0404F	SS0406F	—	LW-2
NBH03025K	2	○	.118	3.0	1	25.4	12	24	125	10	10	SS0404F	SS0406F	SS0408F	LW-2
NBH03525K	2	○	.138	3.5	1	25.4	12	24	125	10	10	SS0404F	SS0406F	SS0408F	LW-2
NBH04025K	2	○	.157	4.0	1	25.4	13	24	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH04525K	2	○	.177	4.5	1	25.4	13	24	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH05025K	2	○	.197	5.0	1	25.4	14	24	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH06025K	2	●	.236	6.0	1	25.4	15	24	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH07025K	2	○	.276	7.0	1	25.4	16	24	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH08025K	2	●	.315	8.0	1	25.4	17	24	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH10025K	2	○	.394	10.0	1	25.4	19	24	125	20	20	SS0404F	SS0406F	SS0406F	LW-2
NBH12025K	2	○	.472	12.0	1	25.4	21	24	125	25	25	SS0404F	SS0404F	SS0404F	LW-2
NBH04532K	2	○	.177	4.5	1.260	32	13	30	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH05032K	2	○	.197	5.0	1.260	32	14	30	125	15	15	SS0404F	SS0408F	SS0408F	LW-2
NBH06032K	2	○	.236	6.0	1.260	32	15	30	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH07032K	2	○	.276	7.0	1.260	32	16	30	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH08032K	2	○	.315	8.0	1.260	32	17	30	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH10032K	2	○	.394	10.0	1.260	32	19	30	125	20	20	SS0404F	SS0408F	SS0408F	LW-2
NBH12032K	2	○	.472	12.0	1.260	32	21	30	125	25	25	SS0404F	SS0406F	SS0406F	LW-2
NBH14032K	2	○	.551	14.0	1.260	32	23	30	125	25	25	SS0504	SS0506	SS0506	LW-2.5
NBH16032K	2	○	.630	16.0	1.260	32	25	30	125	25	25	SS0504	SS0506	SS0506	LW-2.5

● : Stock ○ : 1-2 week delivery

Insert bars ➡W2 Cutting condition ➡W3

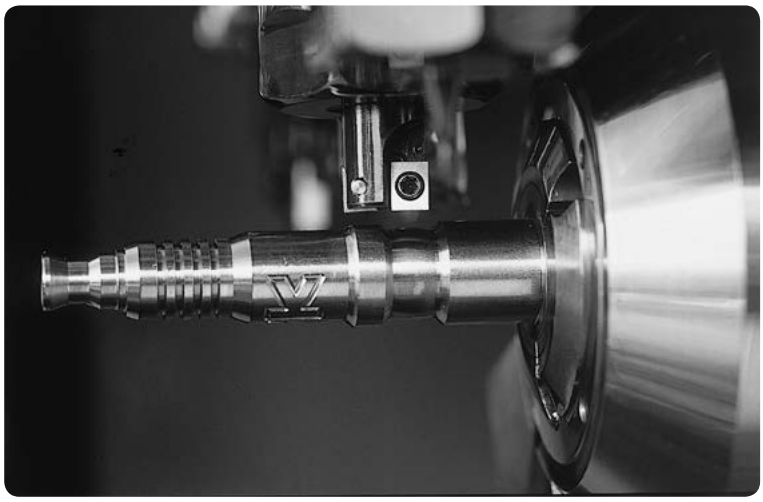
X

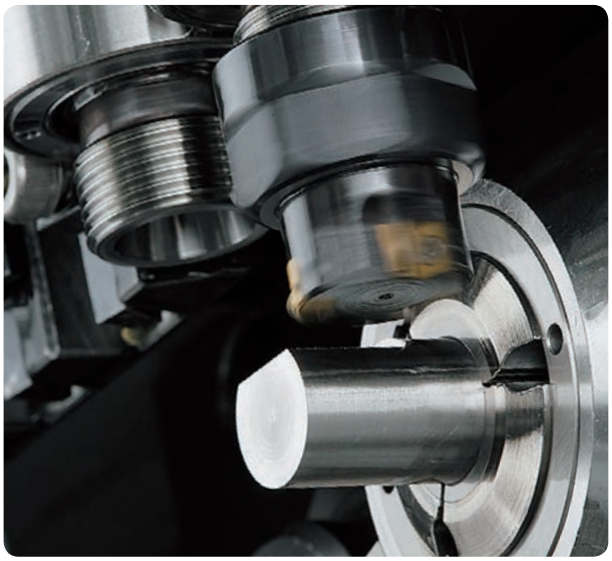


Indexable End Mills

Small Diameter Indexable End Mills







Features

- **Attach .787"(20㎜) end mills in ER16 collet**
- Just change inserts to index. No need to make any adjustments
- High quality surface finish, as low as 1um (Rz) when wiper inserts are used
- Corner radius as small as .002"
- In addition to D cut, ramp machining can be performed*

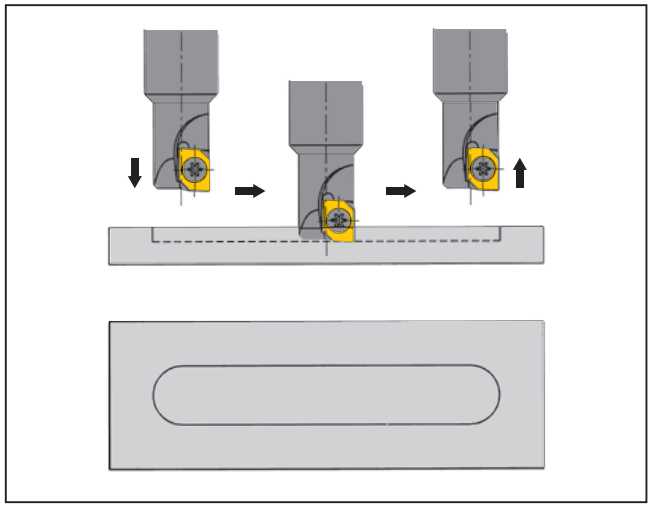
*A combination of single-blade type endmills and inserts with center blade is required

【Recommended Cutting Conditions】

Work Material	Speed SFM	Axial feed IPR	Traverse feed IPR	Depth of cut Inch	Width of cut
Steel	260 - 400	~.001	~.002	~.118	~50% of cutter diameter
Stainless Steel	130 - 200	~.0008	~.0015	~.079	~50% of cutter diameter

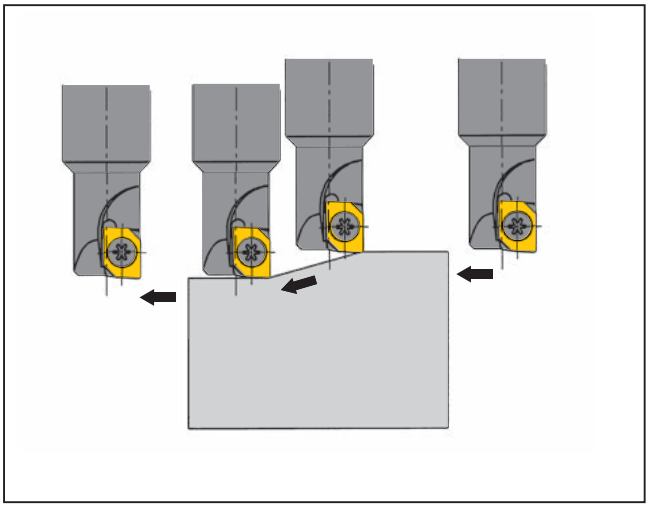
Application Example

■Application Example-1



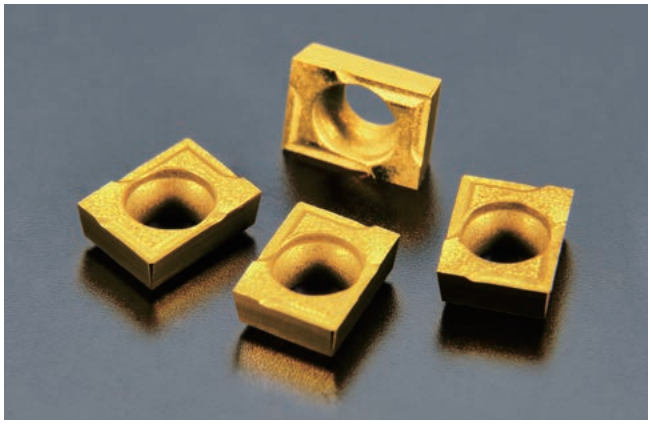
- A single tooth endmill equipped with a center cutting edge insert can be used for both plunge and side cut operations.

■Application Example-2



- A single tooth endmill equipped with a center cutting edge insert can be used for slope milling operations.

Insert



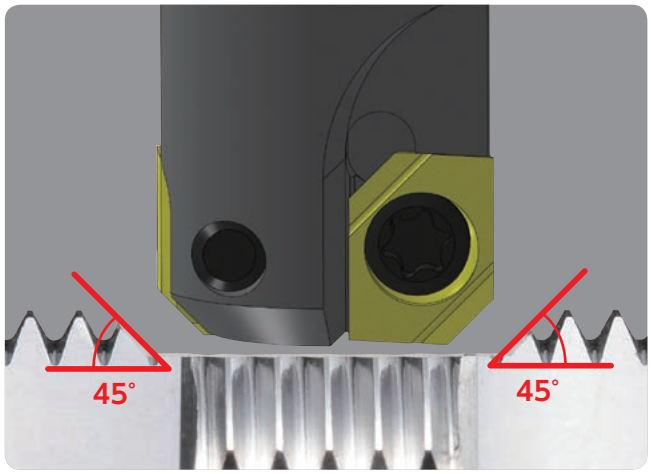
Wiper

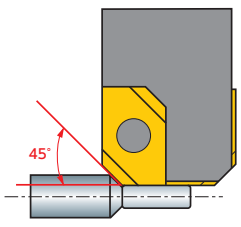
- Excellent surface finish obtained with new wiper insert

Chipbreaker

- Less tool pressure with chipbreaker

45°



Chamfered surface finish insert	
S45C	
310 SFM	
.0056 IPR	
.039 DOC	
WET	
NTK : **QM3 C45 type**	700 pcs
Competitor's solid endmill	500 pcs

REZ Series

REZ

〈D cutting = lead angle 90 type end milling tool〉

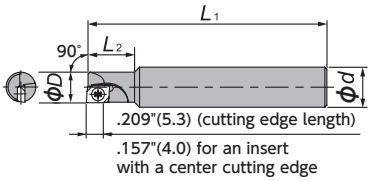


Figure-1

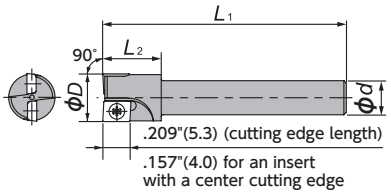


Figure-2

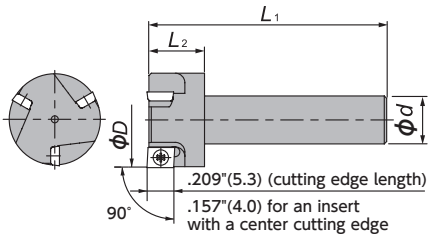


Figure-3

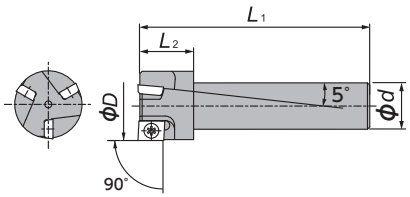


Figure-4 Right-Hand style shown

〈D cutting = lead angle 45 type end milling tool〉

NEW

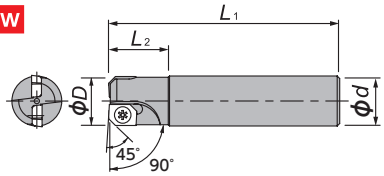


Figure-5

REZ Series - Toolholders



■REZ

Gage Insert	Item Number	Figure	Stock R	Stock L	No. of teeth	ϕD (Inch)	ϕD (mm)	ϕd (Inch)	ϕd (mm)	L_1 (Inch)	L_1 (mm)	L_2 (Inch)	L_2 (mm)	Clamp Screw	Wrench
CZH04..CFR...	**REZ080C1R212**	1	○		1	.315	8	.394	10	2.362	60	.472	12	FS102-2.2 × 4.0	T-07
CZH05..CFR...	**REZ100C1R218**	1	○		1	.394	10	.394	10	2.953	75	.472	12	FS102-2.2 × 4.3	T-07
CZH04..CFR...	**REZ100B2R329**	2	○		2	.394	10	.197	5	1.575	40	.394	10	FS102-2.2 × 4.3	T-07
	REZ100C2R133	2	○		2	.394	10	.236	6	1.969	50	.472	12	FS102-2.2 × 4.3	T-07
	REZ100C2R132	2	○		2	.394	10	.276	7	1.969	50	.472	12	FS102-2.2 × 4.3	T-07
	REZ100C2R141	2	●		2	.394	10	.394	10	1.969	50	.472	12	FS102-2.2 × 4.3	T-07
	REZ120C2R141	2	○		2	.472	12	.394	10	1.969	50	.472	12	FS102-2.2 × 4.3	T-07
	REZ140C2R141	2	○		2	.551	14	.394	10	1.969	50	.472	12	FS102-2.2 × 4.3	T-07
	REZ150B3R330	3	○		3	.591	15	.197	5	1.575	40	.394	10	FS102-2.2 × 4.3	T-07
	REZ200M3R319	3	○		3	.787	20	.276	7	1.969	50	.472	12	FS102-2.2 × 4.3	T-07
	REZ200M3R320	3	●		3	.787	20	.394	10	1.969	50	.472	12	FS102-2.2 × 4.3	T-07
	REZ200C3R403	4	●		3	.787	20	.394	10	1.969	50	.472	12	FS102-2.2 × 4.3	T-07
CZH0400CFR-C45 CZH04..CFR...	**REZ100C2R466**	5	○		2	.394	10	.276	7	1.969	50	.472	12	FS102-2.2 × 4.3	T-07
	REZ100C2R461	5	●		2	.394	10	.394	10	1.969	50	.472	12	FS102-2.2 × 4.3	T-07

CZH Series - Inserts

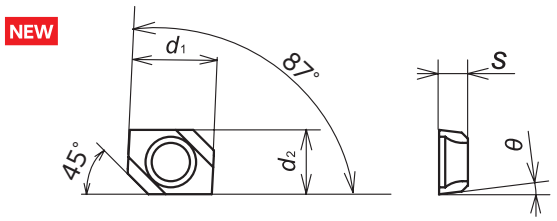


Figure-1 Chipbreaker with wiper

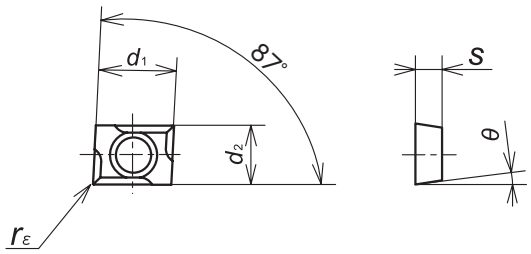


Figure-2 Chipbreaker

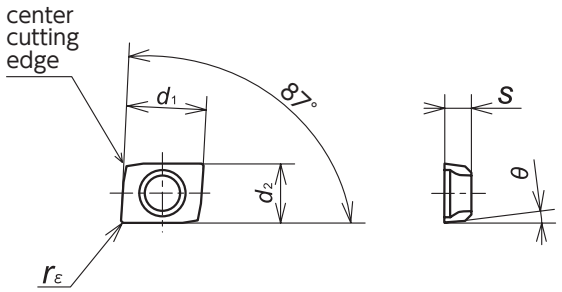


Figure-3 Center cutting edge without wiper

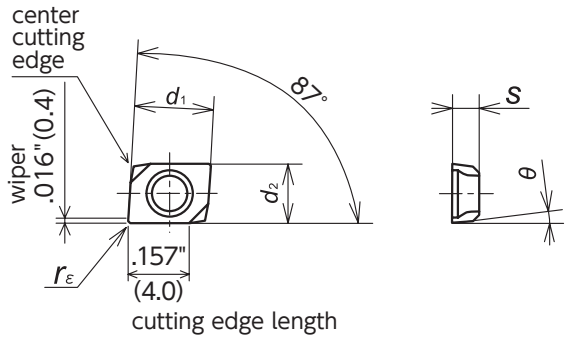


Figure-4 Center cutting edge with wiper

■CZH

Item Number	Figure	Chip-breaker	Center Blade	Wiper	d_1 (Inch)	d_1 (mm)	d_2 (Inch)	d_2 (mm)	s (Inch)	s (mm)	θ	C or r_ε (Inch)	C or r_ε (mm)	Coated Carbide QM3	DT4	DM4	TM4	ZM3
CZH0400CFR-C45 *	1	Yes	No	Yes	.219	5.56	.165	4.20	.074	1.88	7°	C.053	C1.35	○	●			
CZH04005CFR-BL	2	Yes	No	No	.219	5.56	.165	4.20	.074	1.88	7°	.002	0.05			●	○	
CZH0402CFR-BL	2	Yes	No	No	.219	5.56	.165	4.20	.074	1.88	7°	.008	0.2			●	○	
CZH04005CFR-070	3	No	Yes	No	.219	5.56	.165	4.20	.074	1.88	7°	.002	0.05		●			●
CZH0402CFR-070	3	No	Yes	No	.219	5.56	.165	4.20	.074	1.88	7°	.008	0.2		●			○
CZH04005CFR-140	4	No	Yes	Yes	.219	5.56	.165	4.20	.074	1.88	7°	.002	0.05		●			●
CZH0402CFR-140	4	No	Yes	Yes	.219	5.56	.165	4.20	.074	1.88	7°	.008	0.2		●			●
CZH05005CFR-141	4	No	Yes	Yes	.208	5.28	.219	5.56	.086	2.18	10°	.002	0.05					○
CZH0502CFR-141	4	No	Yes	Yes	.208	5.28	.219	5.56	.086	2.18	10°	.008	0.2					○

*Must be used with REZ100C2R461/466Cuters

● : Stock ○ : 1-2 week delivery

Cutting condition ➡X2

MEMO

Y

Information

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- Turning Tool Terminology ····· Y4
- Milling Cutter Terminology ····· Y5
- Calculation Formula for Turning ····· Y6
- Troubleshooting for Turning ····· Y8
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- Hardness Comparison Chart ····· Y30

Grade Comparison Chart

* Italic type = Coated insert

BIDEMICS/Ceramics

	NTK	GREENLEAF	HERTEL	INDEXABLE	ISCAR	KENNAMETAL	KYOCERA	NEWCOMER	ROMAY	SANDVIK	SPK	SSANGYONG	SUMIOTOMO	TAEGUTECH	TUNGALOY	VALENITE
Cast iron K	**HC1 HW2**	GEM19	AC5	I50	IN11		KA30	NP5200	CC10			SZ200 SZ300		AW20 AB120		
	HC2 HC5 HC6	GEM7	MC2	I100	IN22 IN23	K090 KY1615	A65 *A66N* *PT600M*	NP5000	CC20 CC30	CC620 CC650	SH2	ST100 ST300 ST500 SD200 *TC300* *TA300*	NB90S	AB30	*LX11* LX21 CX710	Q32
	SX6 *SP9*	CSN100 *CSN200*		MW30 MW43	IS8 *IS80*	*KYK25* KYK35 KY3000 KY3400 KY3500	*CS7050* KS6000 KS6050		CC510 CC513 CC514 *CC514SC* CC516 *CC516SC*	CC6190 *CC1690*	SL506 SL508 *SL554C* SL808 *SL550C* SL654 *SL854C*	SN26 SN300 SN400 SN600 SN500 SN600 SN700 SN800	SN2000K SN2100K NS260 NS260C	AS10 SC10 AS500	FX105	VPQ130 VPQ135
Heat resistant alloy S	**JX1**															
	WA1	WG300 *WG600*			IW7	KY4300			CC600	CC670		SW400 SW500 SW700	WX2000	TC430		
	SX5 SX7 SX9	XSYTIN-1		MW37		*KYS25* KYS30 KY2100 KY1525 KY1540	CF1		CC5477	CC6060 CC6065		SN900		AS20		
Hardened material H	**HC4 *ZC4* HC5 HC7 *ZC7***	GEN7		I100	IN22	*KY4400*	A65 KT66 *A66N* *PT600M*		CC30SC	CC6050			NB90S	*AB20*	LX11	Q35 *VPZ215* *VPZ205*
	WA1	WG300 WG600			IW7	KYS25 KY4300				CC670		SW400 SW500 SW700				

Cermet

	NTK	DIJET	HITACHI	ISCAR	KENNAMETAL	KYOCERA	MITSUBISHI	SANDVIK	SECO	SSANGYONG	SUMIOTOMO	TAEGUTECH	TUNGALOY
Steel P	**XT3 *Q15* C7X *C7Z* XN4**	LN10 CX50 CX75 CX90 CX99 NIT NAT SUZ	CH350 CZ25 CH550 CH7030 *CZ1025*	IC20N IC520N IC530N IC75T IC30N	*KT315* *KTP10*	TN30 *PV30* TN6010 *PV7010* TN60 TN6020 *PV7020* *PV7025* TN90	*AP25N* NX2525 NX3035 *VP45N*	CT5015 *GC1525*	CM C15M	TX510 TX515 TX520 TX530	T110A T1200A *T2000Z* *T3000Z*	PV3010 PV3030 CT3000 CT5000	NS520 *GT530* *GT730* NS730 NS740
Stainless steel M	**XT3 *Q15* C7X *C7Z* XN4**	LN10 CX50 CX75 CX90 CX99 NIT NAT SUZ	CH350 CH550 CH7030 *CZ1025*	IC20N IC520N IC530N IC30N	*KT315* *KTP10*	TN60 TN6020 *PV7020* *PV7025* TN90	NX2525 *AP25N* NX3035	*GC1525*	CM C15M	TX510 TX515 TX520 TX530	*T2000Z*	PV3010 PV3030 CT3000 CT5000	NS520 NS530 *GT730* NS740
Cast iron K	**T15 *Q15***	LN10 NIT	CH350		*KT315* *KTP10*	TN30 *PV30* *PV7005* TN60 TN6010 *PV7005* *PV7010*	*AP25N* NX2525	CT5015		TX510 TX515 TX520 TX530	T110A T1200A	PV3010 PV3030 CT3000 CT5000	NS520 NS530 NS730 *GT730*

Non coated carbide

	NTK	DIJET	GREENLEAF	HITACHI	INDEXABLE	ISCAR	KENNAMETAL	KYOCERA	MITSUBISHI	ROMAY	SANDVIK	SECO	SUMIOTOMO	TAEGUTECH	TUNGALOY	WALTER
Steel P	**KM1**	SRT DX30 DX35 SR30	G60 G20M	WS10 EX35 EX40 EX45	CI9 CI7 CI6 CI5	IC70 IC50M IC54	KU10	PW30	UTi20T			S10M S25M S60M	ST10P ST20E ST30E A30	CT3000	UX30 TX40	
Cast iron K	**KM1**	KG03 KG1 KG10 KT9 CR1 KG20 KG30 LF12	G02	WH02 WH05 WH10 WH20D	CI65 CI2 CI3 CI1 CI4	IC04 IC20 IC10 IC28	K68 K313	KW10 GW15 GW25	HTi05T HTi10T UTi20T	R600	H10 H13A	890 883 HX	G10E	UF1	TH03 KS05F G1F TH10 G2 G2F KS15F KS20 G3	WSN10 WK1

● PVD coated carbide

	NTK	DIJET	GREENLEAF	HITACHI	INDEXABLE	ISCAR	KENNAMETAL	KYOCERA	MITSUBISHI	SANDVIK	SECO	SUMIOTOMO	TAEGUTECH	TUNGALOY	WALTER
Steel P	**VM1 ZM3 QM3 TM4 DT4 DM4**	JC5003 JC5030 JC5015 JC5040	G915 G920 G925	CY15 CY150 IP2000 CY250 CY9020 HC844 IP3000	CI29 CI25A	IC507 IC807 IC907 IC908 IC328 IC928 IC3028	KC5510 KC5010 KCU10 KCU25 KC5025 KC5525	PR915 PR1005 PR930 PR1025 PR1115 PR1215 PR1225	VP10MF VP10RT VP15TF VP20MF VP20RT	GC1125 GC1525	CP200 CP250 CP500	ACZ150 ACZ310 AC520U ACZ330 ACZ350 AC530U	TT1040 TT7220 TT8010 TT8020 TT9030 TT9080	AH710 AH725 AH730 SH730 GH330 AH120 AH740 AH130 GH130 AH140	WSM30 WXP43 WXM33 WXP20
Stainless steel M	**VM1 ZM3 QM3 TM4 DT4 DM4**	JC5003 JC5015 JC5030 JC5040	G915 G920 G925	IP050S IP100S CY250 CY9020	CI29 CI24 CI23	IC507 IC520 IC907 IC308 IC908 IC3028 IC1008 IC1028 IC3028 IC928	KCU10 KCU25 KC5010 KC5025 KC5510 KC5525	PR915 PR1025 PR1215 PR1225 PR930 PR1125	VP10MF VP10RT VP15TF VP20MF VP20RT	GC15 GC1005 GC1105 GC1115 GC1525 GC2035	TS2000 CP200 TS2500 CP500	EH510Z ACZ150 AC510U EH520Z ACZ310 AC520U ACZ330 ACZ350 AC530U	TT1040 TT5080 TT7010 TT7080 TT7220 TT8010 TT8020	AH710 AH725 AH730 GH330 SH730 GH730 AH120 AH130 GH130 AH140	WXN10 WXP43 WXM33 WXP20 WXM20
Cast iron K	**QM3 DM4**	JC5003 JC5015		CY100H CY10H CY9020		IC910 IC507 IC908 IC508	KCU10 KCU25 KC5010 KC5025 KC5510 KC5525	PR905 PR1215	VP10RT VP15TF VP20RT		TS2000 CP200 DTS2500 CP250 CP500	EH10Z EH510Z AC510U EH20Z ACZ310 AC520U AC530U	TT1040 TT6080 TT7010 TT7080	AH110 GH110 AH120 GH130	

● CVD coated carbide

	NTK	DIJET	GREENLEAF	HITACHI	INDEXABLE	ISCAR	KENNAMETAL	KYOCERA	MITSUBISHI	ROMAY	SANDVIK	SECO	SUMIOTOMO	TAEGUTECH	TUNGALOY	WALTER
Cast iron K	**CP1**	JC105V JC605X JC605W JC050W JC110V JC610 JC215V	GA5022 GA5023	HG3305 HG3315 HX3505 HX3515 GM8015 HG8010 GM8020 GM8025 GM25	CIN2 CIT3 CIT6 CINX CIX	IC428 IC9007 IC9150 IC418 IC428 IC9015 IC9007	KCP05 KCK05 KCP10 KCK15 KCP25 KCK20 KCP30	CA4010 CA4505 CA5505 CA4115 CA4515 CA4120	UC5105 UC5115 UC6110 UE6110	R100 R200 R500	GC3005 GC3205 GC3210 GC3215 GC4215	TK1000 TH1000 TK2000 MK1500 TX150 TP200 TP2500	AC300G AC410K AC700G ACK200 DAC820P AC420K ACK200	TT6300 TT6800 TT7005 TT7015	T5105 T5115 T1115 T5125	WPP01 WPP10 WPP20

● BIDEMICS/CBN

	NTK	DIJET	HITACHI	INDEXABLE	ISCAR	KENNAMETAL	KYOCERA	MITSUBISHI	SANDVIK	SECO	SPK	SSANGYONG	SUMIOTOMO	TAEGUTECH	TUNGALOY	WALTER
Cast iron K	**B23 B30 B99**	JBN795 JBN330	BH200 BH250	CBN90 CBN95 CBN100	IB50 IB85 IB55	KB5630 KB1630 KB1345 *KB9610* *KB9640*	*KBN60M* *KBN900*	MB710 MB5015 MB730 MBS140 BC5030	CB7525 CB7925	*CBN050C* *CBN300P* CBN20 CBN200 CBN300 CBN350	WBN115 WBN105 WBN100 WBN120 WBN750	SBN1600	BN700 BNS800 BN600 BN500	TB730 TB650 KB90 KB90A TB670	BX930 BX90S BX870 BX470 BX480 BX950 BXC90	
Heat resistant alloy S	***JP2***			CBN80		KB5630 KB1630 KB1340		MB730		CBN170			BN700	TB730 KB90	BX950	
Hardened material H	**B52 B36 B40 *B5K* *B6K***	JBN300 JBN245	BH200 BH250	CBN45 CBN50 CBN60 CBN70	IB50 IB55	KB1610 KB1625 KB5610 KB1340 KB5625 *KB9610* *KB9640*	KBN510 KBN525 *KBN10C* *KBN25C* *KBN05M* *KBN10M* *KBN25M* *KBN30M* *KBN35N* *KBN900*	*MBC010* MB810 *BC8020* MB8025 MB825 MB835	CB7015 CB20 CB50 CB7025 CB7525	*CBN050C* CBN10 CBN100 CBN150 CBN170 CBN200 *CBN160P* CBN350 *CBN300P*		SBN2000	BNX10 BNX20 BN250 BNX25 BN300 *BNC150* *BNC80* *DBNC200* *BNC300*	KB50 TB650 TB610 TB670	BX310 *BXM10* BX330 BX360 *BXC50* BX530 BX380 *BXM20*	WLB30 WLB50

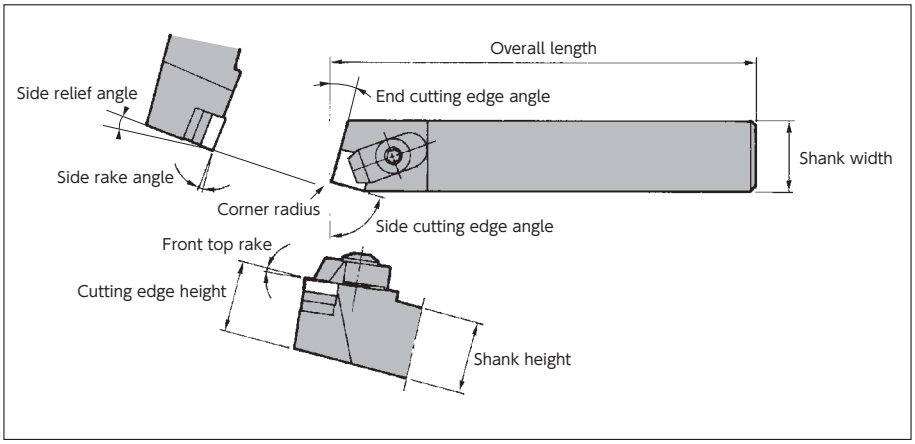
● PCD

	NTK	DIJET	INDEXABLE	ISCAR	KENNAMETAL	KYOCERA	MITSUBISHI	SANDVIK	SECO	SSANGYONG	SUMIOTOMO	TAEGUTECH	TUNGALOY	WALTER
Non-ferrous material N	**PD1 PD2**	JDA30 JDA735 JDA40 JDA745 JDA10 JDA715	PCD3 PCD-F PCD-UF	ID5	KD1400 KD1405 KD1425	KPD001 KPD010 KPD230	MD205 MD220 MD230	CD10	PD10 PD20 PD30	SPD100 SPD200 SPD300	DA1000 DA2200 DA150 DA200 DA90	KP100 KP300 KP500	DX180 DX160 DX140 DX110 DX120	WCD10

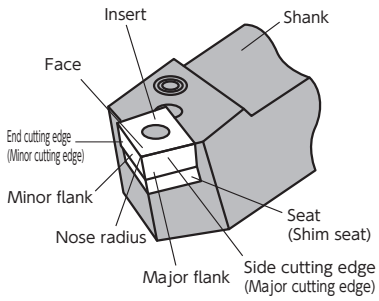
(Note) This chart is based on published data and not authorized by each manufacturer

Turning Tool Terminology

Toolholder part names



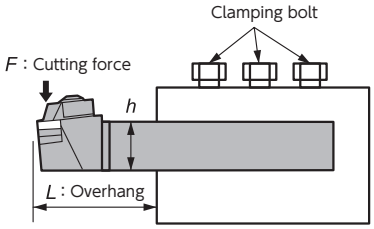
Part names of a cutting tool



Holder rigidity

Toolholder deflection

$$\delta = \frac{4 \times F \times L^3}{E \times b \times h^3} = \frac{4 \times k_c \times f \times L^3}{E \times b \times h^3}$$

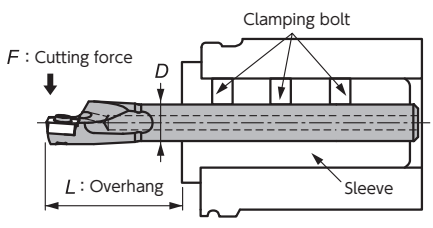


Symbol	Term	Unit
δ	Deflection amount	mm
b	Shank width	mm
h	Shank height	mm
E	Young's modulus	N/mm²
a_p	Depth of cut	mm
f	Feed amount	mm/rev
k_c	Specific cutting force	N/mm²
L	Overhang	mm
F	Cutting force	N

($F = k_c \times a_p \times f$)

Boring bar deflection

$$\delta = \frac{64 \times F \times L^3}{3 \times E \times \pi \times D^4} = \frac{64 \times k_c \times a_p \times f \times L^3}{3 \times E \times \pi \times D^4}$$



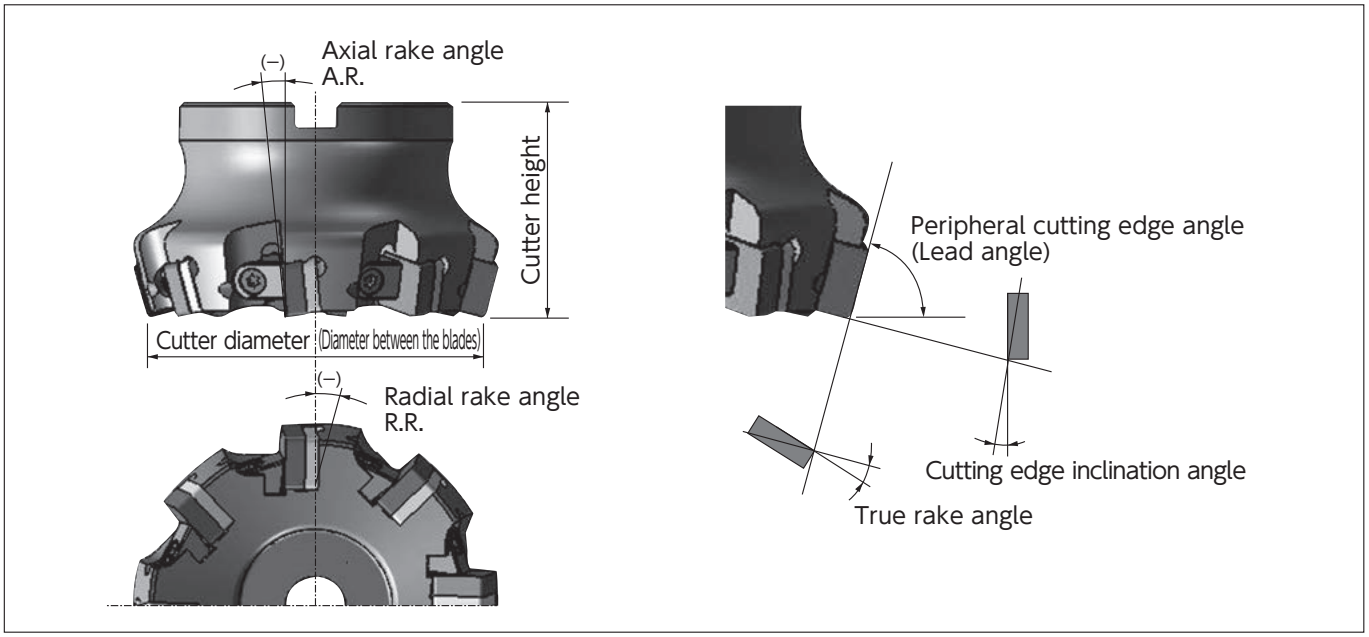
Symbol	Term	Unit
δ	Deflection amount	mm
D	Shank width	mm
E	Young's modulus	N/mm²
a_p	Depth of cut	mm
f	Feed amount	mm/rev
k_c	Specific cutting force	N/mm²
L	Overhang	mm
F	Cutting force	N

($F = k_c \times a_p \times f$)

An important factor in improving the rigidity of a toolholder is to ensure the overhang of the tool shank is as short as possible.

Milling Cutter Terminology

Milling cutter terminology



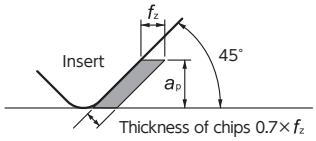
Functions of each cutting edge angle

Name	Function	Effects
Radial rake angle: R.R.	Controls the direction of chip evacuation and cutting force	Negative (−): Excels in chip control performance
Axial rake angle: A.R.	Controls the direction of chip evacuation and cutting force	Positive (+): Excels in cutting performance and BUE resistance
Lead angle	Controls the thickness and evacuation direction of chips	Larger lead angles decrease the thickness of chips and relieves cutting load
True rake angle	Actual rake angle	Larger angles excel in cutting performance and BUE resistance, but lower the cutting edge strength Smaller angles increase the cutting edge strength but lower the BUE resistance
Cutting edge tilt angle	Controls the direction of chip evacuation	Larger angles excel in chip control performance and relieve cutting load, but lower the strength of the insert corner

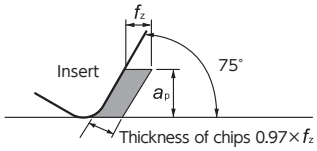
Functions of each angle

《Lead angle》: Relationship of this angle and chip thickness

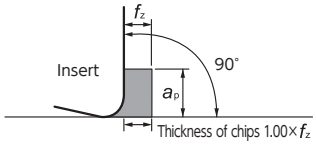
Lead angle : 45 degrees



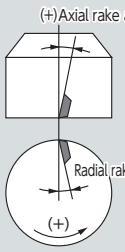
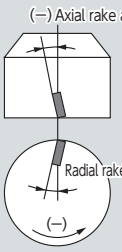
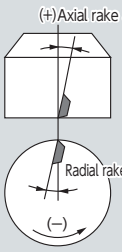
Lead angle : 75 degrees



Lead angle : 90 degrees

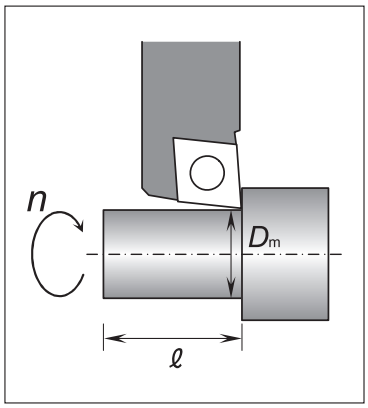


《Rake angle》: Combinations and characteristics

Combinations of the angles for basic cutting edge shapes		 Double-positive cutting edge shape(DP edge shape)	 Double-negative cutting edge shape(DN edge shape)	 Negative-positive cutting edge shape(NP edge shape)
Radial rake angle(R.R.)		Positive (+)	Negative (–)	Negative (–)
Axial rake angle(A.R.)		Positive (+)	Negative (–)	Positive (+)
Insert specification		Positive (single side used)	Negative(both sides used)	Positive(single side used)
Work material	Steel	●	–	●
	Cast iron	–	●	●
	Aluminum alloy	●	–	–

Calculation Formula for Turning

Calculating the cutting speed



Calculating the cutting speed from the rotation speed

$$V_c = \frac{\pi \times D_m \times n}{12} \quad (SFM)$$

Calculating the revolution speed from the cutting speed

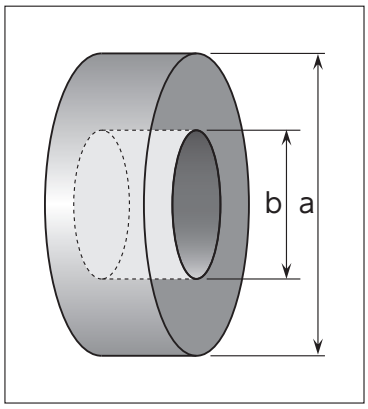
$$n = \frac{12 \times V_c}{\pi \times D_m} \quad (rpm)$$

V_c : Cutting speed (SFM)
D_m : Machining diameter (inch)
n : Spindle speed (rpm)
π : Pi (3.14)

Example : Obtaining a cutting speed for machining a work piece of 2" diameter at the spindle speed of 1,000 min^{-1}:

$$V_c = \frac{\pi \times 2 \times 1000}{12} = \underline{523\,(SFM)}$$

Calculating the cutting time



Calculating the cutting time for OD (ID) machining

$$T = \frac{\ell}{f \times n} \quad (min)$$

T : Cutting time (min)
ℓ : Cutting length (inch)
f : Feed rate (IPR)
n : Spindle speed (rpm)

Calculating the cutting time for facing

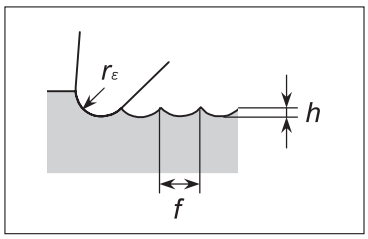
$$T = \frac{\pi \times (a^2 - b^2)}{4000 \times V_c \times f} \quad (min)$$

T : Cutting time (min)
V_c : Cutting speed (m/min)
f : Feed amount (mm/rev)
π : Pi (3.14)

Example : Obtaining a cutting time for machining of work to be cut 4" long at the spindle speed of 1,000 rpm and at a feed rate of .004IPR:

$$T = \frac{4}{.004 \times 1000} = \underline{1\,(min)}$$

Calculating the theoretical surface roughness



$$h = \frac{f^2}{8\,r_\varepsilon} \times 1000^2 \quad (\mu inch)$$

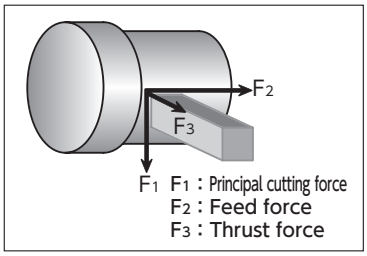
h : Theoretical surface roughness (μinch)
f : Feed amount (IPR)
r_ε : Corner radius (inch)

Example : Obtaining the theoretical surface roughness when machining with an insert having .031 corner nose radius at a feed rate of 0.004 IPR:

$$h = \frac{.004^2}{8 \times .031} \times 1000^2 = \underline{64.51\,(\mu inch)}$$

【Guidelines for actually finished surface roughness】
Steel type work: Theoretical surface roughness × 1.5 to 3
Cast iron type work: Theoretical surface roughness × 3 to 5

Calculating the cutting force



$$F_{(N)} = k_c \times a_p \times f$$

F : Cutting force (N)
k_c : Specific cutting force (N/mm²) *See the table below.
a_p : Depth of cut (mm)
f : Feed amount (mm/rev)

Example : Calculating the cutting force for grey cast iron cut at the feed rate of 0.2 mm/rev and with a depth of cut of 3 mm:

$$F = 1800 \times 3 \times 0.2 = \underline{1080\,(N)}$$

Calculating the power required

$$P_{c\,(kW)} = \frac{v_c \times f \times a_p \times k_c}{60 \times 10^3 \times \eta}$$

P_c : Required power (kW)
v_c : Cutting speed (m/min)
f : Feed amount (mm/rev)
a_p : Depth of cut (mm)
k_c : Specific cutting force (N/mm²) *See the table below.
η : Mechanical efficiency (0.7~0.8)

Example : Calculating the cutting power for the machining of grey cast iron at a cutting speed of 700 m/min, feed rate of 0.4 mm/rev, and with a depth of cut of 2 mm (with 0.8 set as the mechanical efficiency):

$$P_c = \frac{700 \times 0.4 \times 2 \times 1400}{60 \times 10^3 \times 0.8} = \underline{16.33\,(kW)}$$

Specific cutting force

Work material		Tensile strength or hardness	Specific cutting force (N/mm²) "k_c" to cutting feed rate (mm/rev)				
			0.1mm/rev	0.2mm/rev	0.3mm/rev	0.4mm/rev	0.6mm/rev
Soft steel		520	3,610	3,100	2,720	2,500	2,280
Medium steel		620	3,080	2,700	2,570	2,450	2,300
Hard steel		720	4,500	3,600	6,250	2,950	2,640
Tool steel	SKD	670	3,040	2,800	2,630	2,500	2,400
		770	3,150	2,850	2,620	2,450	2,340
Cr-Mo steel	SCM	600	3,610	3,200	2,880	2,700	2,500
		730	4,500	3,900	3,400	3,150	2,850
Alloy steel	SNCM	900	3,070	2,650	2,350	2,200	1,980
		HB350	3,310	2,900	2,580	2,400	2,200
Gray cast iron	FC	HB200	2,110	1,800	1,600	1,400	1,330

Calculating the volume of chips produced

$$Q_{(cm^3/min)} = v_c \times f \times a_p$$

Q : Volume of evacuated chips (cm³/min)
v_c : Cutting speed (m/min)
a_p : Depth of cut (mm)
f : Feed amount (mm/rev)

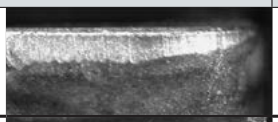
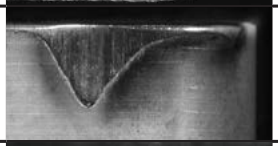
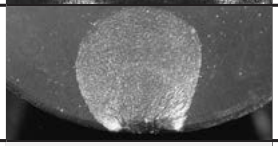
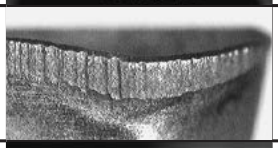
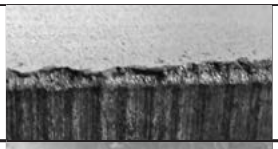
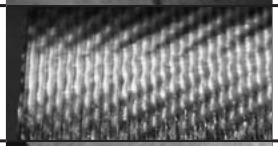
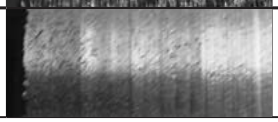
Example : Obtaining the volume of chips evacuated per minute for machining at a cutting speed of 700 m/min, feed of 0.4 mm/rev, and a depth of cut of 2mm

$$Q = 700 \times 0.4 \times 2 = \underline{560\,(cm^3/min)}$$

Troubleshooting for Turning

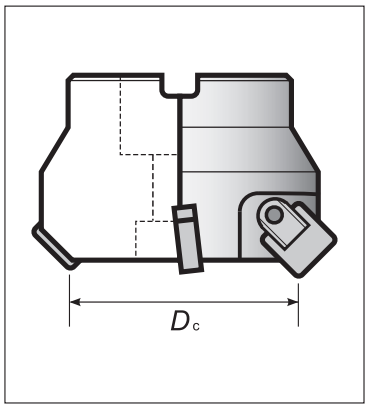
Type of problem	Possible cause	Corrective measures	Material/grade selection: Change to a harder material/grade	Material/grade selection: Change to a tougher material/grade	Material/grade selection: Change to a material/grade more resistant to thermal shock	Material/grade selection: Change to a material/grade more resistant to deposition	Cutting conditions: Cutting speed (Decrease ↘ / Increase ↗)	Cutting conditions: Feed rate (Decrease ↘ / Increase ↗)	Cutting conditions: Depth of cut (Decrease ↘ / Increase ↗)	Cutting conditions: Coolant: Use non-water-soluble type	Cutting conditions: Coolant: Review dry or wet operation	Tool shape: Review the type of chipbreaker	Tool shape: Rake angle (Decrease ↘ / Increase ↗)	Tool shape: Nose radius of the insert	Tool shape: Side cutting edge angle	Tool shape: Cutting edge strength, honing	Tool shape: Improve the accuracy of insert	Tool shape: Improve the rigidity of the holder	Machine/installation: Improve the installation accuracy of the cutting tool	Machine/installation: Review the overhang of the cutting tool	Machine/installation: Prevent vibration of the machine, improve the machine rigidity
Short tool life	Excessive insert wear	Unsuitable tool material/grade	●																		
		Unsuitable cutting edge shape										●	↗	↗	↗	↘					
		Improper cutting conditions					↘	↗			Wet										
	Fracture/chipping of the cutting edge	Unsuitable tool material/grade		●																	
		Improper cutting conditions						↘	↘												
		Insufficient cutting edge strength										●		↗		↗					
		Thermal shock			●		↘	↘	↘	●	Dry										
		Built-up edge				●	↗	↗		●	Wet										
		Insufficient toughness																●	●	●	●
Poor dimensional accuracy	Variation in dimensions during cutting	Improper accuracy of insert															●				
		Clearance/relief of the work/tool										●	↗	↘	↘	↘		●	●	●	●
	Need for offsetting during cutting	Increased flank wear	●											↗							
		Built-up edge				●	↗														
		Improper cutting conditions					↘	↗													
Poor surface finish	Poor surface roughness	Deposition					↗			●	Wet										
		Unsuitable cutting edge shape										●		↗							
		Chatter					↘	↘	↘									●	●	●	●
Heat	Deterioration in tool life/accuracy due to excessive heat generation	Improper cutting conditions					↘	↘	↘												
		Unsuitable cutting edge shape										●	↗			↘					
Burring, chipping, scuffing	Burring	Boundary wear	●																		
		Improper cutting conditions					↘	↕			Wet										
		Unsuitable cutting edge shape										●	↗	↘	↘	↘					
	Chipping	Improper cutting conditions						↘	↘												
		Unsuitable cutting edge shape										●	↗	↗	↗	↘					
		Vibration																●	●	●	●
	Scuffing	Unsuitable tool material/grade				●															
		Improper cutting conditions					↗			●	Wet										
		Unsuitable cutting edge shape										●	↗			↘					
		Vibration																●	●	●	●
Chip control	Elongated chips	Improper cutting conditions					↘	↗	↗		Wet										
		Chipbreaker's effective chip control range										●									
		Unsuitable cutting edge shape												↘	↘						

Troubleshooting Case Studies: Turning

	Case/Symptom		Possible causes	Corrective measures
Insert	VB wear		●The material / grade is too soft ●Cutting speed is too high ●Relief angle is too small	●Use a coated grade ●Choose a material/grade highly resistant to wear ●Decrease the cutting speed
	Wear on face		●High temperature causes chemical reactions between the insert material and chips	●Use a coated grade ●Decrease both of the cutting speed and feed rate ●Widen the rake angle
	Notching wear		●The work surface is too hard ●Boundary area has been oxidized ●Burrs, caused by chips in the sheared form, have been cut	●Widen the side cutting edge angle ●Make the nose radius larger so that cutting is performed within the radius ●Use a round insert
	Chipping/ fracture		●Feed rate is too high ●Chips have become trapped ●Chatter resulting in vibration	●Enlarge the honed edge ●Make the nose radius larger ●Narrow the rake angle to secure the cutting edge strength
	Flaking		●This is due to compressive forces being applied to the cutting edge from elastic deformation in the area being cut ●This occurs when deposited/adhered material is peeled off	●Change the cutting conditions by checking the cutting edge ●Choose a material/grade highly resistant to fracture ●Increase the coolant rate and pressure ●Improve the run-out of the main spindle of the machine
	Plastic deformation		●High cutting force and excessive heat is applied to the cutting edge	●Choose a material/grade highly resistant to wear ●Decrease both of the cutting speed and feed rate ●Make the nose radius larger ●Use coolant
	Built-up edge		●This occurs because the cutting temperature is lower than the recrystallization temperature of the work material	●Increase the cutting speed ●Use coolant with excellent lubrication performance ●Change to a grade with less affinity to the work material
	Deposition		●The deposition is caused to the face by a chemical reactions of the work material due to heat generation	●Increase the cutting speed ●Widen the relief angle ●Hone the face with a mirror-like-surface finish ●Change to a grade with less affinity to the work material
	Clamping crack		●The insert was clamped under improper seating conditions	●Clean the clamping areas and install the insert in the recommended way ●Tighten to the specified torque
Work piece	Chipping		●The feed rate is too high ●An unsuitable insert was selected	●Decrease the feed rate ●Use a smaller edge preparation ●Change to a grade highly resistant to boundary wear ●Change the cutting edge angle of the holder
	Burring		●The feed rate is incorrect ●The shape of insert is not suitable	●Decrease the feed rate ●Use a smaller edge preparation
	Chatter mark		●The cutting force is too great ●The rigidity of the work piece and cutting tool is insufficient	●Decrease the feed rate ●Use a smaller edge preparation ●Ensure tool overhang is minimised ●Change the cutting edge angle of the holder
	Gouging		●Vibration of the cutting edge due to deposition/built-up edge	●Increase the cutting speed ●Use cutting oil excellent in lubrication performance ●Change to a grade with less affinity to the work material

Calculation Formula for Milling Processes

Calculating the cutting speed



Calculating the cutting speed from the rotation speed

$$v_c \underset{(SFM)}{=} \frac{\pi \times D_c \times n}{12}$$

Calculating the revolution speed from the cutting speed

$$n \underset{(rpm)}{=} \frac{12 \times v_c}{\pi \times D_c}$$

v_c : Cutting speed (SFM)
D_c : Cutter diameter (inch)
n : Spindle speed (rpm)
π : Pi (3.14)

Example : Obtaining the cutting speed for machining with an 8" diameter cutter at the Spindle speed of 1,000 rpm:

$$v_c = \frac{\pi \times 8 \times 1000}{12} = \underline{2093\,(SFM)}$$

Calculating the feeding speed and feed rate

Calculating the feed rate per blade

$$f_z \underset{(IPT)}{=} \frac{v_f}{z \times n}$$

Calculating the feeding speed per minute

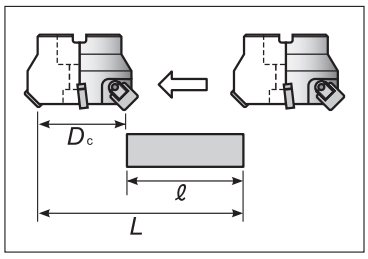
$$v_f \underset{(inch/min)}{=} f_z \times z \times n$$

f_z : Inch amount per tooth (IPT)
v_f : Table feed (inch/min)
z : Number of tooth
n : Spindle speed (rpm)

Example : Obtaining the feed rate for milling with a 10-teeth cutter at the .008IPT and the revolution speed of 1,000 rpm

$$v_f = .008 \times 10 \times 1000 = \underline{80\,(inch/min)}$$

Calculating the machining time



$$T \underset{(min)}{=} \frac{L}{v_f}$$

T : Cutting time (min)
L : Total length of table feed ($\ell + D_c$)
v_f : Table feed (inch/min)

Example : Obtaining the machining time for milling 8" on a work piece fed at the rate of 40 inch/min:

$$T = \frac{8}{40} = \underline{0.2\,(min)}$$

● Calculating the cutting power

$$P_{c\,(kW)} = \frac{a_e \times a_p \times v_f \times k_c}{60 \times 10^6 \times \eta}$$

P_c : Required power (kW)
a_e : Cutting length (mm)
a_p : Depth of cut (mm)
v_f : Feed rate (mm/min)
k_c : Specific cutting force (N/mm²) *See the table below.
η : Mechanical efficiency (0.7~0.8)

Example : Calculating the power required to machine gray cast iron for a length of 150 mm, at a feed rate of 1,100 mm/min, and with a depth of cut of 3 mm (with 0.8 set as the mechanical efficiency and 0.2 mm as the feed par tooth/blade)

$$P_c = \frac{150 \times 3 \times 1100 \times 1400}{60 \times 10^6 \times 0.8} = \underline{14.44\,(kW)}$$

● Specific cutting force

Work material		Tensile strength or hardness	Specific cutting force (N/mm²) "k_c" to cutting feed amount (mm/rev)				
			0.1mm/t	0.2mm/t	0.3mm/t	0.4mm/t	0.6mm/t
Soft steel		520	2,200	1,950	1,820	1,700	1,580
Medium steel		620	1,980	1,800	1,730	1,600	1,570
Hard steel		720	2,520	2,200	2,040	1,850	1,740
Tool steel	SKD	670	1,980	1,800	1,730	1,700	1,600
		770	2,030	2,030	1,800	1,750	1,700
Cr-Mo steel	SCM	600	2,180	2,000	1,860	1,800	1,670
		730	2,540	2,250	2,140	2,000	1,800
Alloy steel	SNCM	900	2,000	1,800	1,680	1,600	1,500
		HB350	2,100	1,900	1,760	1,700	1,530
Gray cast iron	FC	HB200	1,750	1,400	1,240	1,050	970
Aluminum alloy	AC, ADC	160	580	480	400	350	320

※For power required for NTK HCC, please refer to page P31.

● Calculating the volume of evacuated chips

$$Q_{(cm^3/min)} = a_e \times a_p \times v_f$$

Q : Volume of evacuated chips (cm³/min)
a_e : Cutting length (mm)
a_p : Depth of cut (mm)
v_f : Feed rate (mm/min)

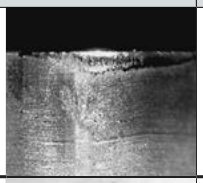
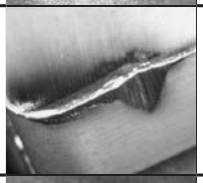
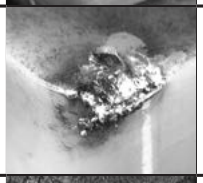
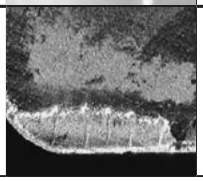
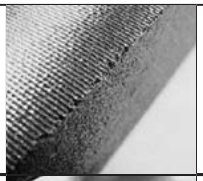
Example : Obtaining the volume of chips evacuated per minute for machining at a cutting speed of 700 m/min, feed rate of 0.4 mm/rev, and with a 2 mm depth of cut:

$$Q = 150 \times 3 \times 1100 = \underline{495\,(cm^3/min)}$$

Troubleshooting for Milling

Type of problem	Possible cause	Corrective measures: Material/grade selection — Change to a harder material/grade	Change to a tougher material/grade	Change to a material/grade more resistant to thermal shock	Change to a material/grade more resistant to deposition	Cutting conditions — Cutting speed: Decrease ↘	Cutting speed: Increase ↗	Feed rate: Decrease ↘	Feed rate: Increase ↗	Depth of cut: Decrease ↘	Depth of cut: Increase ↗	Review cutter diameter and cutting width	Review tool path	Coolant: Wet	Coolant: Dry	Tool shape — Relief angle of insert: Decrease ↘	Relief angle of insert: Increase ↗	Nose radius of cutting edge	Cutting edge strength, honing: Decrease ↘	Cutting edge strength, honing: Increase ↗	Number of teeth/blades	Enlarge the chip pocket	Check the wiper shape	Improve accuracy of cutting edge run-out	Improve rigidity of tool
Damaged or broken cutting edge of the insert	Increased flank wear	Improper cutting conditions					↘							●												
		Unsuitable cutting edge shape	●														↗			↘				●		
	Increased wear on face	Improper cutting conditions					↘		↘		↘			●												
		Unsuitable cutting edge shape	●														↗		↗	↘						
	Fracture/ chipping on cutting edge	Improper cutting conditions							↘		↘			●												
		Unsuitable cutting edge shape		●													↘		↗	↗				●	●	●
	Thermal shock	Improper cutting conditions					↘		↘		↘					●										
		Unsuitable cutting edge shape			●												↗			↘						
	Built-up edge	Improper cutting conditions					↗		↗						●											
		Unsuitable cutting edge shape				●											↗			↘						
Machining accuracy	Poor surface finish	Improper cutting conditions					↗		↘		↘				●											
		Unsuitable cutting edge shape	●			●														↘	↘			●	●	
	Burring	Improper cutting conditions							↓↑		↘	●	●													
		Unsuitable cutting edge shape															↗		↘	↘				●		
	Chipping	Improper cutting conditions							↘		↘		●													
		Unsuitable cutting edge shape															↗		↗	↘	↗			●		
	Poor flatness and parallelism	Improper cutting conditions							↘		↘				●		↗		↘	↘	↘			●	●	●
Others	Increased chatter/ vibration	Improper cutting conditions					↘		↘		↘	●	●				↗		↘	↘	↘					
	Poor chip evacuation	Improper cutting conditions					↗		↘			●		●	●											
		Unsuitable tool/blade edge shape															↗			↘	●					

Troubleshooting Case Studies: Milling

	Case/Symptom		Possible causes	Corrective measures
Insert	VB wear		●Cutting speed is too high. ●Feed rate is too low. ●The shape of the insert is not suitable. ●The material / grade of the insert is not suitable.	●Decrease the cutting speed. ●Increase the feed rate. ●Make the nose radius larger. ●Change to a grade highly resistant to boundary wear.
	Notching wear		●The material / grade of the inserts is not suitable. ●The shape of the cutter is not suitable ●The shape of insert is not suitable.	●Change to a grade highly resistant to boundary wear. ●Widen the rake angle. ●Change the Insert shape to a different one.
	Chipping / fracture		●The cutting speed is incorrect. ●The shape of the cutter is not suitable ●The shape of insert is not suitable.	●Decrease the feed rate and depth of cut in order to reduce the cutting force. ●Use a smaller edge preparation. ●Prepare the cutting edge to give it a round honing. ●Change to a grade highly resistant to fracture.
	Thermal crack		●The cutting conditions are incorrect ●The material / grade of insert is not suitable	●Decrease the cutting speed. ●Change to dry cutting from wet cutting. ●Use a material / grade highly resistant to thermal shock
Work piece	Chipping		●The feed rate is too high. ●An unsuitable insert is selected. ●The shape of the cutter is not suitable.	●Decrease the feed rate. ●Use a smaller edge preparation ●Change to a grade highly resistant to boundary wear. ●Set the lead angle at 45 degrees.
	Burring		●The feed rate is incorrect. ●The shape of insert is not suitable. ●The shape of the cutter is not suitable.	●Adjust the feed rate. ●Use a smaller edge preparation. ●Make the lead angle narrower.

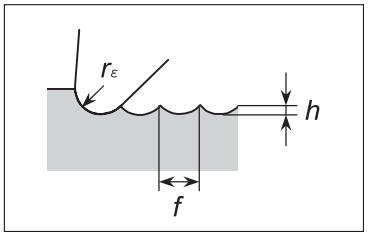
Surface Roughness Standards

			JIS B0601 (2001) ISO 4287 (1997) / ISO 1302 (2002)	JIS B0601 (1994) JIS B0031 (1982)
Cross-section curve			No filter, digital signal	No filter, digital signal
	Evaluation length		Shape length	—
	Maximum height		Pt	—
	10-point average roughness		—	—
Roughness curve			Phase correction, band λs-λc	Phase correction, short wavelength λc
	Evaluation length		Determine individually for each standard length λc.	Average for ℓn, calculated for each standard length λc
	Maximum height		Maximum height **Rz**	Maximum height Ry
	Set standard length based on height parameters Rz, Rmax, and Ry.	0.25mm	0.1~0.5μm	0.1~0.5μm
		0.8mm	0.5~10μm	0.5~10μm
		2.5mm	10~50μm	10~50μm
	Dimension indicated in drawing		U 0.008 – 2.5/Rz 1.5 L – 2.5/Rz 0.7	Ry = 1.6~0.8 λc 0.25
	10-point average roughness		**Rz_{JIS}**	Rz
	Center line average roughness		Ra_{75}	Ra75
	Arithmetic average roughness		Arithmetic average roughness **Ra**	Arithmetic average roughness Ra
	Set standard length based on height parameters Rz, Rmax, and Ry.	0.25mm	0.1~0.5μm	0.1~0.5μm
		0.8mm	0.5~10μm	0.5~10μm
		2.5mm	10~50μm	10~50μm
	Dimension indicated in drawing		U "2RC" – 0.8/Ra75 3.1 L "2RC" – 0.8/Ra75 1.5	1.6~3.2

Theoretical surface roughness

The theoretical surface roughness for lathe machining is the minimum value which can be obtained under the set machining conditions, and can be expressed by the following formula.

$$h_{(\mu m)} = \frac{f^2}{8\,r_\varepsilon} \times 1000$$



h : Theoretical surface roughness (μm)
f : Feed amount (mm/rev)
r_ε : Nose radius (mm)

Actual surface roughness

- When machining steel: Theoretical surface roughness x 1.5-3
- When machining cast iron: Theoretical surface roughness x 3-5

Surface finish improvement measures

- Increase the nose radius.
- Use a wiper insert.
- Adjust the cutting speed and/or feed amount.
- Change the material and/or shape of the insert

Relationship with triangle symbols

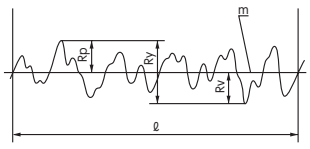
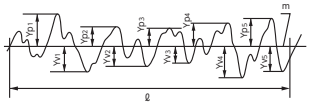
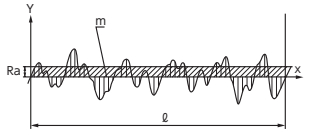
Arithmetic average roughness Ra (μm)	Maximum height Rz (μm)	10-point average roughness Rz_{JIS} (μm)	※ (Triangle symbol)
0.025	0.1	0.1	▽▽▽▽
0.05	0.2	0.2	
0.1	0.4	0.4	
0.2	0.8	0.8	
0.4	1.6	1.6	▽▽▽
0.8	3.2	3.2	
1.6	6.3	6.3	
3.2	12.5	12.5	▽▽
6.3	25	25	
12.5	50	50	▽
25	100	100	

- Examples of reading
  (i) When Ra = 1.6μm ➡ 1.6μm Ra
  (ii) When Rz = 6.3μm ➡ 6.3μm Rz
  (iii) When Rz_{JIS} = 6.3μm ➡ 6.3μm Rz_{JIS}

※The finishing symbols (triangle symbol ▽ and symbol ~) are no longer used in JIS pursuant to the 1994 revision.

JIS B0601 (1982) JIS B0031 (1982)	JIS B0601 (1970) JIS B0031 (1970)	JIS B0601 (1970)
No filter, analog signal	No filter, analog signal	No filter, analog signal
One standard length	One standard length	One standard length
Rmax	Rmax (S indication)	Hmax (S)
Rz	Rz (Z indication)	—
2RC, short wavelength cut-off λc	2RC, short wavelength cut-off λc	—
One measured length ≧ 3λc	One measured length ≧ 3λc	—
—	—	—
0.8μm or less	0.8μm or less	Select from 0.3, 1, 3, 5 and 10mm
0.8~6.3μm	0.8~6.3μm	Select from 0.3, 1, 3, 5 and 10mm
6.3~25μm	6.3~25μm	Select from 0.3, 1, 3, 5 and 10mm
Rmax = 1.6 Rmax = 0.8	Surface symbol or triangle symbol 1.6S 0.25 Upper limit 0.8S 0.25 Lower limit	Triangle symbol 0.8S or less ▽▽▽▽ 1.5S~6S ▽▽▽ 12S~25S ▽▽ 35S or higher ▽
—	—	—
Ra	Ra ("a" indication)	—
—	—	—
—	—	—
Ra shall be 12.5μm or less.	λc shall be 0.8 mm.	—
12.5~100μm	—	—
3.2 1.6	Surface symbol or triangle symbol 0.2a or less ▽▽▽▽ 0.4a~1.6a ▽▽▽ 3.2a~6.3a ▽▽ 12.5a to 25a or more ▽	—

Obtaining the surface roughness

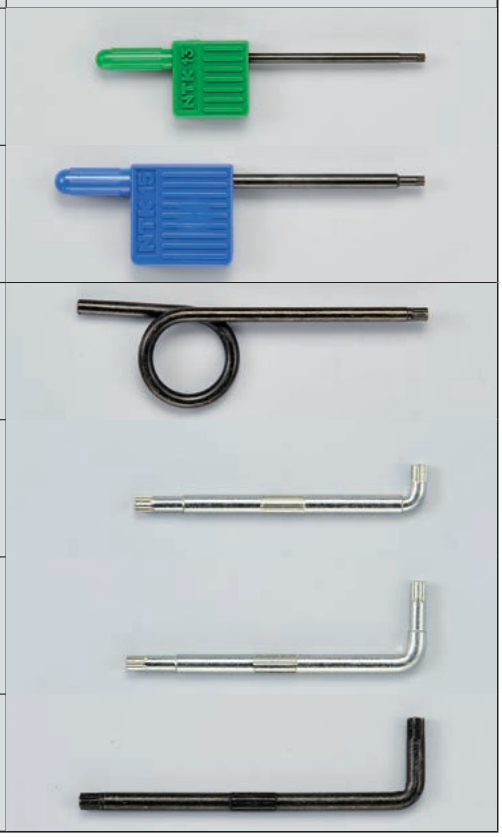
Type	New symbol JIS B0601:'01	Old symbol JIS B0601:'94	Calculation	Obtaining method (example)
Max. height (Peak)	Rz	Ry	The addition of the max. value for the depth Rv and the max. height Rp on the roughness curve for the reference length: $Rz = Rp + Rv$	
Average roughness of 10 points	Rz_{JIS}	Rz	The addition of the average of the maximum to fifth highest vales and the average of the deepest to the fifth deepest values on the roughness curve for the reference length: $Rz_{JIS} = \frac{(Yp1+Yp2+Yp3+Yp4+Yp5)+(Yv1+Yv2+Yv3+Yv4+Yv5)}{5}$	
Arithmetic average of roughness	Ra	Ra	The average of absolute values on the roughness curve f (x) for the reference length: $Ra = \frac{1}{\ell}\int_0^{\ell}\{f(x)\}$	

Conditions for measuring R parameters

Non-cyclic wave form (random wave form)		Settings for measuring	
Range of Ra (μm)	Range of Rz (μm)	Reference length ℓr (mm) = cut-off λc (mm)	Evaluated length ℓn (mm) = ℓr × 5
0.006 < Ra ≦ 0.2	0.025 < Rz ≦ 0.1	0.08	0.4
0.02 < Ra ≦ 0.1	0.1 < Rz ≦ 0.5	0.25	1.25
0.1 < Ra ≦ 2	0.5 < Rz ≦ 10	0.8	4
2 < Ra ≦ 10	10 < Rz ≦ 50	2.5	12.5
10 < Ra ≦ 80	50 < Rz ≦ 200	8	40

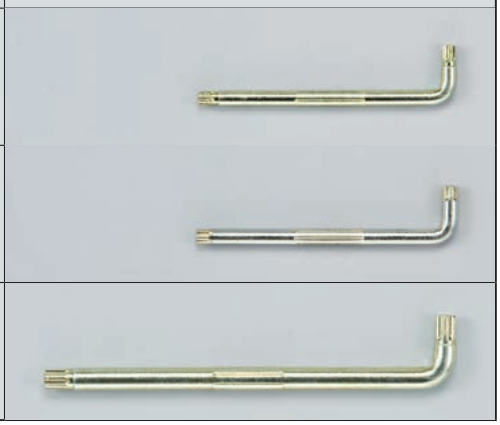
Spare Parts - Wrenches

Standard Items

Item Number	Appearance
CLR-13S (Formerly RLR-13S)	
CLR-15S (Formerly RLR-15S)	
RLR-20S	
LLR-25S	
LLR-25S-20＊65	
LLR-28S	

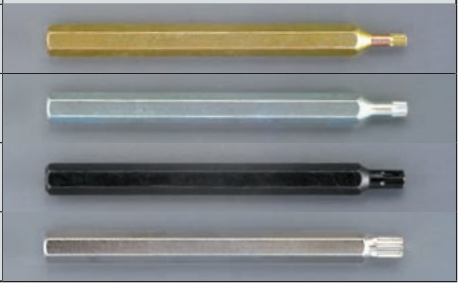
Optional Items

〈LLR Type〉

Item Number	Appearance
LLR-13S	
LLR-15S	
LLR-20S	

〈Driver type wrench for increased adaptability〉

Item Number	Magnetic Driver Handle
XX2815-04	

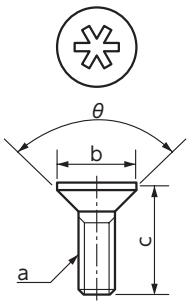
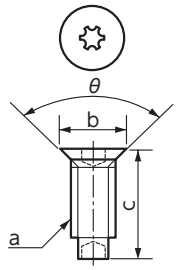
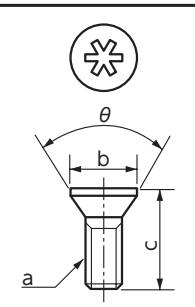
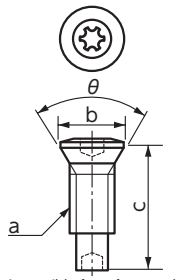
Item Number	Replaceable Bits
HLR-13S	
HLR-15S	
HLR-20S	
HLR-25S	

〈Driver type wrench kits〉

Item Number	Contents
XX2815-04-13S	XX2815-04 with HLR-25S (HLR-13S)
XX2815-04-15S	XX2815-04 with HLR-25S (HLR-15S)
XX2815-04-20S	XX2815-04 with HLR-25S (HLR-20S)
XX2815-04-25S	XX2815-04 with HLR-25S (HLR-25S)

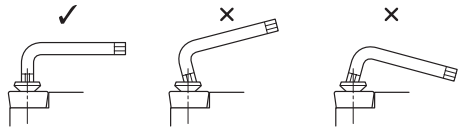


Clamp Screws and Wrenches

Clamp Screw			Dimension (mm)				Standard Wrench	
Appearance	Order Code	Item Number	a	b	c	θ (°)	Order Code	Item Number
	5704739	**LR-S-2×3.5**	M2×P0.4	3.1	3.5	82	5681994	**CLR-13S**
	5907704	**LR-S-2×3.7**	M2×P0.4	3.1	3.7	82		
	5907712	**LR-S-2×4.4**	M2×P0.4	3.1	4.4	82		
	5907720	**LR-S-2×5.5**	M2×P0.4	3.0	5.5	90		
	5907738	**LR-S-2.5×4.8**	M2.5×P0.45	3.6	4.8	82	5681978	**CLR-15S**
	5704747	**LR-S-2.5×5.5**	M2.5×P0.45	3.6	5.5	82		
	5907746	**LR-S-2.5×6**	M2.5×P0.45	3.5	6.0	90		
	5907753	**LR-S-2.5×6.8**	M2.5×P0.45	3.5	6.8	90		
 Accessible from front and back	5773619	**LR-S-3×5.8**	M3×P0.5	4.1	5.8	90	5485164	**RLR-20S**
	5907761	**LR-S-3×6.2**	M3×P0.5	5.2	6.2	82		
	5907779	**LR-S-3×7.8**	M3×P0.5	4.0	7.8	90		
	5907787	**LR-S-4×5.8**	M4×P0.7	5.8	6.0	82		
	5907795	**LR-S-4×9**	M4×P0.7	5.8	9.0	82		
	5116991	**LR-S-4×10PW**	M4×P0.7	5.8	10.0	90	5681978	**CLR-15S**
	5534029	**LRIS-2×6**	M2×P0.4	2.6	6.0	60	5681994	**CLR-13S**
	5907803	**LRIS-2.2×6**	M2.2×P0.45	3.15	6.0	60		
	5989181	**LRIS-2.5×5**	M2.5×P0.45	3.6	5.0	60	5681978	**CLR-15S**
	5907811	**LRIS-2.5×7**	M2.5×P0.45	3.6	7.0	60		
	5907829	**LRIS-3×6**	M3×P0.5	4.0	6.0	60	5485164	**RLR-20S**
	5428156	**LRIS-3×8**	M3×P0.5	4.2	8.0	60		
	5477328	**LRIS-4×5**	M4×P0.7	5.85	5.0	60	5364930 5794698	**LLR-25S** **LLR-25S-20＊65**
	5907837	**LRIS-4×6**	M4×P0.7	5.85	6.0	60		
	5977566	**LRIS-4×8**	M4×P0.7	5.85	8.0	60		
	5907845	**LRIS-4×10**	M4×P0.7	5.85	10.0	60		
	5684105	**LRIS-4×12**	M4×P0.7	5.85	12.0	60		
 Accessible from front and back	5907852	**LRIS-5×10**	M5×P0.8	7.0	9.5	60	5364948	**LLR-28S**
	5116983	**LRIS-4×10PW**	M4×P0.7	5.7	10.0	60	5681978	**CLR-15S**
	5090576	**LRIS-4×12PW**	M4×P0.7	5.7	12.0	60		

Attention: When tightening screws

- Make sure the wrench tip and wrench hole are neither deformed nor stripped
- Engage the wrench wrench straight to screw hole



- Do not apply more torque than the recommended amount (as shown to the right)

Note: Wrenches and bits come in a pack of five
Clamp screws come in a pack of ten

Recommended Tightening Torque

Item Number	Recommended Tightening Torque (lbs.in)
CLR LLR HLR **13S**	6.2 (0.7N·m)
CLR LLR HLR **15S**	12.4 (1.4N·m)
RLR LLR HLR **20S**	26.6 (3.0N·m)
LLR HLR **25S**	44.3 (5.0N·m)
LLR HLR **28S**	62.0 (7.0N·m)

Material Cross Reference Chart

ISO	Country	U.S.A.	Japan	Germany
	Standard	AISI / SAE	JIS	DIN
Stainless steel M		**Stainless Steel (Ferrite/Martensitic)**		
		403	SUS403	X6Cr13
				X7Cr14
		416	SUS416	X12CrS13
		430	SUS430	X6Cr17
		410	SUS410	X10Cr13
			SUS420J2	X46Cr13
		405		X6CrAL13
		420		X20Cr13
		431	SUS431	X19CrNi17-2
		430F	SUS430F	X14CrMoS17
		434	SUS434	X6CrMoS17-2
		CA6-	SCS5	X3CrNiMo13-4
		405	SUS405	X10CrAL13
		HNV6	SUH4	X85CrMoV18-2
		446	SUH446	X10CrAL2-4
		EV8	SUH35,SUH36	X53CrMnNiN21-9
		S44400		X1CrMoTi18-2
				X20CrMoV12-1
		630		X5CrNiCuNb16-4
		Stainless Steel (Austenitic)		
		304L		X2CrNi19-11
		304	SUS304	X5CrNi18-10
		303	SUS303	X8CrNiS18-9
			SUS304L	
		304L	SCS19	X2CrNi19-11
		301	SUS301	X9CrNi18-8
		304LN	SUS304LN	X2CrNi18-10
		316	SUS316	X5CrNiMo17-2-2
		316LN	SUS316LN	X2CrNiMoN17-13-3
		316L		X2CrNiMoN17-12-2
		316L	SCS16	X2CrNiMo18-14-3
			SUS316L	
		317L	SUS317L	X2CrNiMo18-15-4
		UNS		X1NiCrMoCu25-20-5
		V 0890A		
		321	SUS321	X6CrNiTi18-10
		347	SUS347	X10CrNiNb18-10
		316Ti		X6CrNiMoTi17-12-2
		318		X10CrNiMoNb 18-12
		309	SUH309	X15CrNiSi20-12
		310S	SUH310	X8CrNi25-21
		308	SCS17	X2CrNiMoN17-11-2
		17-7PH		X7CrNiAL 17-7
		N08028		X1NiCrMoCu31-27-4
		Stainless Steel (Austenitic/Ferrite)		
		S31500		X2CrNiN23-4
		S32900		X8CrNiMo27-5
		S32304		X2CrNiN23-4
		S31803		X2CrNiMoN22-53
Hardened material H		5130H	SCr430H	34Cr4
		5135H	SCr435H	37Cr4
		4135H	SCM435H	34CrMo4
		4140H	SCM440H	42CrMo4

ISO	Country	U.S.A.	Japan	Germany
	Standard	AISI / SAE	JIS	DIN
Cast iron K		**Malleable cast iron**		
		–	FCMB310	–
		32510	FCMW330	EN-GJMB350-10
		40010	FCMW370	EN-GJMB450-6
		50005	FCMW490	EN-GJMB550-4
		70003	FCMP540	
		A220-70003	FCMP590	EN-GJMB650-2
		A220-80002	FCMP690	EN-GJMB700-2
		Gray cast iron		
		No 20 B	FC100	EN-GJL-100
		No 25 B	FC150	EN-GJL-150
		No 30 B	FC200	EN-GJL-200
		No 35 B	FD250	EN-GJL-250
		No 40 B	–	–
		No 45 B	FC300	EN-GJL-300
		No 50 B	FC350	EN-GJL-350
		No 55 B	–	EN-JLZ
		A436 Type 2	–	GGL-NiCr20-2
		Ductile cast iron		
		60-40-18	FCD400	EN-GJL-400-15
		–	–	EN-GJL-400-18-LT
		80-55-06	FCD500	EN-GJL-500-7
		A43D2	–	EN-GJSA-500
		–	FCD600	EN-GJS-600-3
		100-70-03	FCD700	EN-GJS-700-2
Nonferrous material N		SC64D	C4BS	G-AlSi9MGWA
		GD-AlSI12	AC4A	G-ALMG5
		356.1	A5052	
		A413.0	A6061	GD-AlSi12
		A380.1	A7075	GD-AlSi8Cu3
		A413.1	ADC12	G-AlSi12(Cu)
		A413.2		G-AlSi12
		A360.2		G-AlSi10Mg(Cu)
Heat-resistant alloy S		**Heat-resistant alloy**		
		330	SUH330	X12NiCrSi36 16
			SCH15	G-X40NiCrSi36-18
		5390A		
		5666		NiCr22Mo9Nb
				NiCr20Ti
		5660		NiFe35Cr14MoTi
		5391		S-NiCr13A16MoNb
		5383		NiCr19Fe19NbMo
		4676		NiCu30AL3Ti
				NiCr20TiAk
		AMS 5399		NiCr19Co11MoTi
		AMS 5544		NiCr19Fe19NbMo
		AMS 5397		NiCo15Cr10MoAl
		5537C		CoCr20W15Ni
		AMS 5772		CoCr22W14Ni
		Titanium alloy		
		AMS R54520		TiAl5Sn2.5
		AMS R56400		TiAl6V4
		AMS R56401		TiAl6V4ELl
				TiAl4Mo4Sn4Si0.5

ISO	Country	U.S.A.	Japan	Germany
	Standard	AISI/SAE	JIS	DIN
Steel P		**Carbon steel**		
		A570.36	STKM12A;C	S235JRG2
		1115		GC16E
		A573-8165		S235J2G3
		1015		C15
		1020		C22
		1213	SUM22	11SMn30
		12L13	SUM22L	11SMnPb30
				10SPb20
		1215		11SMn37
		12L14		11SMnPb37
		1015	S15C	Ck15E
		1025	S25C	Ck25E
		A572-60		S380N
		A572-60		17MnV7
		1035		C35
		1045		C45
		1040		35S20
		1039		40Mn4
		1335	SMn438(H)	36Mn5
		1330	SCMn1	28Mn6
		1035	S35C	C35G
		1045	S45C	C45E
		1050	S50C	C53G
		1055		C55
		1060		C60E
		1055	S55C	C55E
		1060	S58C	C60E
		1095		C101E
		W1	SK3	C101u
		W210	SUP4	C105W1
		Alloy steel		
		ASTMA353		X8Ni9
		2515		12Ni19
				14NiCrMo13
		D3	SKD1	X210Cr12
		H13	SKD61	X40CrMo134
		A2	SKD12	X100CrMoV51
			SKD2	X210CrW12
		S1		45WCrV7
		H21	SKD5	X30WCrV93
				X30WCrV9
				X165CrMoV12
		HW3	SUH1	X45GrSi93
		D3	SUH3	S6-5-2
		M2	SKH51	S6-5-2
		M35	SKH55	S6-5-2-5
		M7		S6-9-2
		HNV3		X210Cr12G

ISO	Country	U.S.A.	Japan	Germany
	Standard	AISI/SAE	JIS	DIN
Steel P		A573-81	SM400A;B;C	S275J2G3
			SM490A;B;C;YA;YB	S355J2G3+C2
		5120		DS355J2G3
		9255		55Si7
		9262		S340MGC
		52100	SUJ2	100Cr6
		ASTM		16Mo3
		4520		16Mo5
		ASTM		14Ni6
		8620	SNCM220(H)	21NiCrMo2
		8740	SNCM240	40NiCrMo22
				17CrNiMo6
		5015	SCr415(H)	15Cr3
		5140	SCr440	42Cr4
		5155	SUP9(A)	55Cr3
			SCM415(H)	15CrMo5
		8740	SNCM240	40NiCrMo8-4
		5015	SCr415(H)	15Cr3
		ASTMA182		13CrMo5
		ASTMA182		13CrMo4-5
				14MoV63
				31CrMo12
				39CrMoV13
		L1		41CrS4
		8620		22Mo4
				50CoMo4
				16MnCr5
				31NiCrMo14
		L6		50NiCr13
		3135	SNC236	36NiCr6
		3415	SNC415(H)	14NiCr10
		3415;3310	SNC815(H)	14NiCr14
		9255		
		9840		36CrNiMo4
		4340		34CrNiMo6
		5132	SCr430(H)	34Cr4
		5140	SCr440(H)	41Cr4
		5115		16MnCr5
		4130	SCM420;SCM430	25CrMo4
		4137;4135	SCM432;SCCRM3	34CrMo4
		4140;4142	SCM440	41CrMo4
		4140	SCM440(H)	42CrMo4
				32CrMo12
		6150	SUP10	51CrV4
				41CrMo7
		L3		100Cr6
			SKS31	105WCr6
			SKS2,SKS3	
		L6	SKT4	55NiCrMoV6
		Cast steel		
			SEMnH1	
			SCMnH/1	G-X120Mn12

Ni-based Heat Resistant Alloys

● Material Specifications Cross-Reference List-Aerospace Material Designation

Commercial designation	Hardness Brinell HB		Nominal composition Approximate content in %										
	Ann.	Aged	Ni	Cr	Co	Fe	Mo	C	Mn	Si	Al	Ti	Others
Astroloy*	—	—	56.9	15.0	15.0	—	5.25	0.06	—	—	4.0	3.5	0.05
GMR 235*	—	—	63.3	15.5	—	10.0	5.2	0.15	0.25	0.6	3.0	2.0	0.06
GMR 235D	—	—	63.0	15.5	—	4.5	5.0	0.15	0.1	0.3	3.5	2.5	0.05
Hastalloy B*	140	—	64.3	0.6	1.25	5.5	28.0	0.1	0.8	0.7	—	—	—
Hastalloy C*	200	—	54.1	16.0	1.25	5.75	17.0	0.07	0.8	0.7	—	—	4.0
Hastalloy N*	—	—	72.2	7.0	0.25	3.0	16.5	0.06	0.4	0.25	0.5	—	0.21
Hastalloy W*	—	—	62.7	5.0	1.25	5.5	24.5	0.06	0.5	0.5	—	—	—
Hastalloy X*	160	—	47.1	22.0	1.5	18.5	9.0	0.1	0.6	0.6	—	—	0.6
Hastelloy R235*	—	—	61.0	15.0	2.5	10.0	5.5	0.15	0.25	0.6	3.0	2.0	—
Haynes 75	—	—	73.7	20.0	—	5.0	—	0.12	—	—	0.25	0.4	0.5
Haynes 80A	—	—	70.9	20.0	2.0	3.0	—	0.1	—	—	1.5	2.5	—
Haynes 263	—	25	51.4	20.0	20.0	—	6.0	0.06	—	—	1.0	1.5	—
Haynes 600	—	—	75.9	16.0	—	8.0	—	0.08	—	—	—	—	—
Haynes 625	—	—	61.4	21.0	—	5.0	9.0	0.1	—	—	—	—	3.5
Haynes 718	—	43	53.5	18.0	—	19.0	3.0	0.08	—	—	0.5	0.9	5.0
Haynes X-750	—	37	74.9	16.0	—	7.0	—	0.08	—	—	0.8	0.25	1.0
IN-100*	—	—	61.6	10.0	15.0	—	3.0	0.18	1.2	0.5	5.5	4.75	—
Incoloy 804*	—	—	41.0	29.5	—	26.0	—	0.1	1.0	0.75	0.25	0.6	0.5
Incoloy 825*	180	—	42.0	21.0	—	30.0	3.0	0.04	—	—	—	1.0	2.0
Incoloy 901*	180	300	44.3	12.5	—	34.0	6.0	0.05	0.24	0.12	0.15	2.7	0.15
Incoloy 903*	—	380	39.0	—	15.0	41.0	—	0.02	—	—	0.7	1.4	3.0
Inconel 600*	170	—	75.0	15.5	—	8.0	—	0.05	—	—	—	—	—
Inconel 601*	150	—	60.0	23.0	—	14.0	—	0.05	—	—	1.4	—	—
Inconel 604*	180	—	74.4	15.8	—	7.2	—	0.04	0.2	0.2	—	—	0.1
Inconel 625*	180	—	61.0	21.5	—	2.5	9.0	0.04	0.5	0.5	0.4	0.4	3.6
Inconel 700*	—	350	46.0	15.0	23.5	0.7	3.75	0.12	0.1	0.3	3.0	2.2	—
Inconel 702*	—	—	79.6	15.6	—	0.35	—	0.04	0.05	0.2	3.0	0.7	—
Inconel 706*	—	—	42.0	16.0	—	40.0	—	0.03	0.2	0.3	0.4	1.75	—
Inconel 713*	—	—	75.0	12.5	—	—	4.2	0.12	—	—	6.1	0.8	—
Inconel 718*	180	380	52.5	19.0	—	19.0	3.0	0.04	0.35	0.35	0.9	0.9	0.1
Inconel 722*	—	380	74.8	15.0	—	6.5	—	0.04	0.55	0.2	0.6	2.4	—
Inconel 751*	—	—	70.0	15.5	—	7.0	—	0.1	1.0	0.5	1.5	2.6	0.5
Inconel 781	—	—	70.0	16.0	—	8.0	—	0.07	2.25	0.15	0.1	3.0	0.2
Inconel X-750*	—	390	73.0	15.5	—	7.0	—	0.04	0.35	0.35	0.7	2.5	—
Jessop G39*	130	—	67.5	19.5	—	5.0	3.0	0.5	—	—	—	—	4.5
Jessop G64*	220	—	60.7	11.0	—	2.0	3.0	0.15	—	—	6.0	—	4.0
Jessop G81*	—	300	79.3	20.0	13.0	—	—	0.05	—	—	1.3	2.3	—
Jethete M-252*	—	320	55.3	20.0	10.0	—	10.0	0.15	0.5	0.5	1.0	2.6	—
MAR-M 200*	—	—	69.4	9.0	10.0	—	—	0.15	—	—	5.0	2.0	13.5
MAR-M 246*	—	270	59.5	9.0	10.0	0.2	2.5	0.15	—	—	5.5	1.5	11.5
MAR-M 421*	—	—	62.3	15.5	10.0	—	1.7	0.15	—	—	4.3	1.75	5.3
MAR-M 432*	—	—	52.3	15.5	20.0	—	—	0.15	—	—	2.8	4.3	5.0
Monel 400*	110	—	65.0	—	—	1.5	—	0.12	1.0	—	—	—	32.0
Monel K-500*	120	290	64.0	—	—	1.0	—	0.13	0.8	—	2.8	0.6	30.0

* These alloys can be hardened by an aging process

USA		UK	France	Germany		Others
SAE	AMS	BS	AFNOR	Werkst.-Nr	DIN1706	
—	—	—	—	—	—	—
—	—	—	—	—	—	AISI:686
—	—	—	—	—	NiCr16MoAl	—
5396A	5396	—	ND37FeV	2.48	S-NiMo30	N10001
5388C	5388	—	—	2.4602	NiCr17Mo17FeW	N10002
5771	5607	—	—	—	—	N10003
—	5786	—	—	—	—	N10004
5390A	5390	—	NC22FeD	2.4603	—	N06002
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	5872	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	5596/5597	—	—	—	—	—
—	5542/5593	—	NC15TNbA	—	—	—
—	5397	—	—	LW2.4674	NiCo15Cr10MoAlTi	N13100
—	—	—	—	—	—	—
—	—	3072-76	NC21FeDU	2.4858	NiCr21Mo	N08825
—	5660	—	ZSNCDT42	LW2.4662	NiFe35Cr14MoTi	N09901
—	—	—	—	—	—	—
5540	5580	3072-76	NC15Fe	2.4816	NiCr15Fe	N06600
—	5715	—	—	2.4851	NiCr23Fe	N06601
—	—	—	—	—	—	—
—	5666	—	NC22FeDNB	2.4856	NiCr22Mo9Nb	N06625
—	—	—	NK27CADT	—	NiCo29Cr15MoAlTi	—
—	5550	—	—	—	—	N07702
—	5702	—	—	—	—	N09707
—	5391	3146-3	NC12AD	LW2.4670	S-NiCr13Al6MoNb	—
5383	5589	HR8	NC19FeNB	LW24668	NiCr19Fe19NbMo	N07713
—	5541	—	NC16FeTi	—	NiCr16FeTi	N07722
—	—	—	—	—	—	N07751
—	—	—	—	—	—	—
5542G	5582	—	NC16FeTNb	2.4669	NiCr16FeTi	N07750
—	—	—	—	—	NiCr20MoW	—
—	—	—	—	—	NiCr11AlWNb	—
—	—	—	—	—	NiCr20Co18Ti	—
—	5551	—	—	2.4916	S-NiCr19Co	N07252
—	—	—	—	—	NiW13Co10Cr9AlTi	—
—	—	—	—	2.4675	NiCo10W10Cr9AlTi	—
—	—	—	—	—	NiCR16Co10WAlTi	—
—	—	—	—	—	NiCo20Cr16WAlTi	—
4544	4574	3072-76	NU30	2.436	NiCu30Fe	N04400
4676	—	3072-76	—	2.4375	NiCu30Al	N05500

Ni-based Heat Resistant Alloys

● Material Specifications Cross-Reference List-Aerospace Material Designation

Commercial designation	Hardness Brinell HB		Nominal composition Approximate content in %										
	Ann.	Aged	Ni	Cr	Co	Fe	Mo	C	Mn	Si	Al	Ti	Others
Monel R-405*	110	—	66.0	—	—	1.2	—	0.15	1.0	—	—	—	31.06
Nimocast 80*	—	—	69.9	20.0	2.0	5.0	—	0.1	—	—	1.0	2.0	—
Nimocast 90*	—	—	52.9	20.0	18.0	5.0	—	0.1	—	—	1.5	2.5	—
Nimocast 713	—	—	72.6	13.4	—	—	4.5	0.12	—	—	6.2	1.0	2.3
Nimocast 842	—	—	57.7	22.0	10.0	—	10.0	0.3	—	—	—	—	—
Nimocast PD16	—	—	43.8	16.5	—	34.0	3.3	0.06	—	—	1.2	1.2	—
Nimocast PE10	—	—	56.4	20.0	—	—	6.0	—	—	—	—	—	9.0
Nimocast PK24	—	—	61.1	9.5	15.0	—	3.0	0.17	—	—	5.5	4.7	1.0
Nimonic 75*	170	—	75.0	19.5	—	4.0	—	0.12	—	—	—	0.4	—
Nimonic 80A*	—	350	75.0	19.5	—	—	—	0.08	—	—	1.4	2.4	—
Nimonic 90*	—	346	59.0	19.5	16.5	—	—	0.08	—	—	1.5	2.5	—
Nimonic 95	—	—	49.9	19.5	—	5.0	—	0.11	—	1.0	2.0	3.5	—
Nimonic 105*	—	320	53.0	15.0	20.0	—	5.0	0.12	—	—	4.7	1.2	—
Nimonic 115*	—	350	59.0	14.2	13.2	—	4.0	0.16	—	—	5.0	4.0	—
Nimonic 242	—	—	58.0	21.5	10.0	—	10.5	—	—	—	—	—	—
Nimonic 263/C263*	—	275	51.5	20.2	20.0	—	6.0	0.06	—	—	0.5	2.0	—
Nimonic 901*	—	350	44.0	12.5	—	35.0	5.7	0.04	—	—	0.3	2.9	—
Nimonic PE13	—	—	49.0	21.8	1.5	18.5	9.0	0.1	0.5	0.5	—	—	0.6
Nimonic PE16*	—	250	43.5	16.5	—	34.0	3.3	0.06	—	—	1.2	1.2	—
Nimonic PK25	—	—	49.9	19.0	19.5	—	4.0	0.08	0.8	0.8	2.9	2.9	—
Nimonic PK31	—	—	53.8	20.0	14.0	—	4.5	—	—	—	0.4	2.3	5.0
Nimonic PK33*	—	350	55.9	18.0	14.0	0.5	7.0	0.05	0.25	0.25	2.1	2.2	—
R-235*	—	—	63.3	15.0	1.2	10.0	5.5	0.12	0.1	0.3	2.0	2.5	—
Refractaloy 26	—	—	38.0	19.0	20.0	16.0	3.2	0.03	0.8	1.0	0.2	2.75	—
Rene 41	—	—	53.1	19.0	11.0	1.8	10.0	0.09	0.3	0.3	1.5	3.1	—
Rene 63	—	—	54.4	14.0	15.0	0.5	6.0	0.05	0.1	0.2	3.8	2.5	3.5
Rene 77	—	—	57.6	15.0	15.0	0.4	4.2	0.17	0.1	0.1	4.3	3.3	—
Rene 80	—	—	61.0	14.0	9.5	—	4.0	0.15	—	—	—	4.0	8.0
Rene 95	—	—	64.5	14.0	8.0	—	3.5	0.15	—	—	—	2.5	3.5
Rene 100	—	—	60.6	10.0	15.0	—	3.0	0.18	—	—	5.5	4.7	—
Rene 125	—	—	60.0	8.9	10.0	—	2.0	0.1	—	—	4.7	2.5	7.0
TRW 1800	—	—	70.0	13.0	—	—	—	0.1	—	—	6.0	0.06	10.5
TRW V1 A	—	—	70.5	6.0	7.5	—	2.0	0.13	—	—	5.4	1.0	6.3
Udimet 500*	—	—	51.7	19.0	19.0	—	4.0	0.1	0.1	0.1	3.0	3.0	—
Udimet 630	—	—	51.0	17.0	—	17.5	3.0	0.04	—	—	0.6	1.1	4.1
Udimel 700	—	—	54.6	15.0	17.5	—	—	0.1	—	—	4.4	3.4	—
Udimet 710	—	—	55.0	18.0	15.0	0.5	1.5	0.07	—	—	2.5	5.0	1.5
Udimet 718*	180	380	52.5	18.0	—	18.0	3.0	0.05	—	—	0.6	0.1	5.2
Waspaloy*	—	HRC35-42	56.9	19.8	13.5	0.8	4.45	0.07	0.1	0.1	1.4	3.0	—

* These alloys can be hardened by an aging process

USA		UK	France	Germany		Others
SAE	AMS	BS	AFNOR	Werkst.-Nr	DIN1706	
4674	7234	—	—	—	—	N04405
—	—	3146	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
5391A	—	HC203	NC13AD	2.467	S-NiCr13Al6MoNb	—
—	5397	HC204	NK15CAT	LW2.4674	—	—
—	—	—	—	—	NiFe33Cr17Mo	—
—	—	3146	—	—	—	—
—	—	HR5,203-4	NC20T	2.463	NiCr20Ti	—
—	—	Hr401,601	NC20TA	2.4631	NiCr20TiAk	N07080
—	—	Hr2,202	Nc20ATV	2.4632	NiCr20Co18Ti	N07090
—	—	—	—	—	—	—
—	—	HR3	NCKD20ATV	2.4634	NiCo20C15MoAlTi	—
—	—	HR4	NCK15ATD	2.4636	NiCo15Cr15MoAlTi	—
—	—	—	—	—	—	—
—	—	HR10	NCK20D	2.465	NiCr15Co19MoTi	—
5660C	5661A	—	ZSNCDT42	2.4662	NiCr15MoTi	—
5536E	5754E	HR6,204	NC22FeD	2.4665	NiCr22Fe18Mo	—
—	—	HR207	NW11AC	—	NiFe33Cr17Mo	—
5751A	5753	—	NKOD20ATU	2.4666	NiCr18CoMo	—
—	—	—	—	—	—	—
—	—	—	NC19KDUV	—	NiCr20Co16MoTi	—
—	—	—	—	—	—	—
—	—	—	Z6NKCDT38	—	—	—
—	5399	—	NC19KDT	2.4973	NiCr19Co11MoTi	N07041
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	NC14K8	—	—	—
—	—	—	—	—	NiCo15Cr10MoAlTi	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	NiTa9Co8W6CrAl	—
—	5751	—	NCK19DAT	2.4983	NiCr18Co18MoTi	N07500
—	—	—	—	2.4668	NiCr19NbMo	—
—	—	—	NCKD20AT	2.4636	NiCo15CrMoAlTi	—
—	—	—	NC18TDA	—	—	—
5383	5589	HR8	NC19FeN	LW2.4668	NiCr19Fe19NbMo	N07718
—	5544	—	NC20K14	LW2.4668	NiCr19Fe19NbMo	N07001

Co-based Heat Resistant Alloys

● Material Specifications Cross-Reference List-Aerospace Material Designation

Commercial designation	Hardness Brinell HB		Nominal composition Approximate content in %										
	Ann.	Aged	Ni	Cr	Co	Fe	Mo	W	Mn	Si	Al	Ti	Others
Air Resist 13	—	—	1.0	—	79.6	2.5	—	11.0	—		3.5	—	4.12
Air Resist 213	—	—	—	19.0	65.8	—	—	4.7	—	—	3.5	—	6.68
Altemp S 816	—	—	20.0	20.0	47.6	—	4.0	4.0	—	—	—	—	0.4
FSX 414	—	—	10.0	29.0	52.8	1.0	—	7.0	—	—	—	—	0.25
Haynes 25*	—	—	10.0	20.0	49.0	3.0	—	15.0	1.5	0.5	—	—	0.1
Haynes 36	—	—	10.0	18.5	52.8	2.0	—	14.5	1.2	0.6	—	—	0.4
Haynes 151	—	—	—	20.0	65.6	—	—	12.8	0.5	0.5	—	0.15	0.47
Haynes 188*	—	—	22.0	22.0	38.0	2.5	—	14.0	1.0	0.4	—	—	0.1
HS 6*	—	—	2.5	28.0	60.5	3.0	—	5.0	—	—	—	—	1.0
HS 21*	—	—	3.0	27.0	62.6	2.0	5.0	—	0.6	0.6	—	—	0.25
HS 25	—	—	10.0	20.0	48.4	3.0	—	15.0	1.5	2.0	—	—	0.1
HS 30	—	—	16.0	24.0	51.4	1.0	6.0	—	0.6	0.6	—	—	0.4
HS 31	—	—	10.0	25.0	53.8	1.5	—	8.0	0.6	0.8	—	—	0.4
HS 36	—	—	10.0	18.0	53.1	2.0	—	15.0	1.5	—	—	—	0.4
J 1570*	—	—	28.0	19.0	39.0	2.0	—	7.0⌓	—	—	—	—	—
J 1650	—	—	27.0	19.0	38.0	—	—	12.0	—	—	—	—	0.2
Jessop 832	—	—	12.0	19.0	44.0	17.0	2.0	—	0.8	0.3	—	—	3.5
Jessop 834	—	—	12.0	19.0	42.0	20.0	2.0	—	—	—	—	—	6.5
Jessop 865	—	—	10.5	25.5	53.0	2.0	—	7.5	0.6	0.6	—	—	0.45
Jessop 875	—	—	—	21.0	66.0	—	—	11.0	—	—	—	—	2.45
Jessop 887	—	—	10.0	20.0	50.0	3.0	—	15.0	0.5	1.5	—	—	0.1
Jessop X-40			10.5	25.5	53.0	1.5	—	7.5	0.75	0.75	—	—	0.5
Jessop X-45			10.5	25.5	54.7	2.0	—	7.0	—	—	—	—	0.25
Jessop X-50			20.5	25.5	40.3	4.0	—	12.0	—	—	—	—	0.75
Jessop X-63			10.0	25.0	57.6	1.0	6.0	—	—	—	—	—	0.45
Jetalloy 209	—	—	10.0	20.0	52.0	1.0	—	15.0	—	—	—	2.0	0.02
L-251	—	—	10.0	19.0	56.0	1.0	—	14.0	—	—	—	—	0.4
L-605	—	—	10.0	20.0	51.0	1.6	—	15.0	1.5	0.6	—	—	0.1
M 203	—	—	25.0	20.0	38.0	1.6	—	12.0	0.8	1.0	0.7	2.0	1.67
M 204	—	—	25.0	18.0	42.0	1.6	—	12.0	—	—	—	—	1.27
M 205	—	—	25.0	18.0	40.0	1.6	—	12.0	—	—	2.7	—	1.67
MAR-M 302	—	—	—	21.5	57.0	0.75	—	10.0	0.1	0.2	—	—	10.0
MAR-M 322	—	—	—	21.5	60.0	0.75	—	9.0	0.1	0.1	—	0.75	7.7
MAR-M 509	—	—	10.0	23.0	55.0	—	—	7.0	0.05	0.05	—	0.2	4.6
MAR-M 905	—	—	20.0	20.0	55.0	—	—	—	—	—	—	0.5	7.65
MAR-M 918	—	—	20.0	20.0	52.0	0.4	—	—	0.1	0.1	—	0.5	7.65
Refractaloy 70	—	—	20.0	21.0	46.0	0.5	8.0	4.0	—	—	—	—	0.08
V-36	—	—	20.0	25.0	43.2	2.4	4.0	2.0	0.6	0.5	—	—	2.29
Wl-52			0.5	21.0	62.6	2.0	—	11.0	0.25	0.25	—	—	2.45

* These alloys can be hardened by an aging process

USA		UK	France	Germany		Others
SAE	AMS	BS	AFNOR	Werkst.-Nr	DIN1706	
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	(5534)	—	—	LW2.4989	CoCr20Ni20W	—
—	—	—	—	—	—	—
5537C	5759	—	KC20WN	LW2.4964	CoCr20W15Ni	—
—	—	—	—	—	CoCr19W14NiB	—
—	—	—	—	—	CoCr20W13	—
—	5772	—	KC22WN	—	CoCr22W14Ni	—
—	5373	—	—	—	—	R30006
—	5385	3531	—	—	CoCr29Mo	R30021
	5759	—	KC20WN	LW2.4964	CoCr20W15Ni	—
5380	—	—	—	—	CoCr25NiW	R30030
5382	—	3146	—	LW2.4670	CoCr25NiW	R30031
—	—	—	—	—	CoCr19W14NiB	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	CoCr19Fe16NiMoVNb	—
—	—	—	—	—	CoCr19Fe20NiMoVNb	—
—	—	—	—	—	CoCr25Niw	—
—	—	—	—	—	CoCr21W11Nb	—
—	—	—	—	—	CoCr20W15Ni	—
—	5382	3156-2	—	LW2.4670	CoCr25NiW	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	5759	—	—	2.4964	CoCr20W15Ni	R30605
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	CoCrW10TaZrB	—
—	—	—	—	—	CoCr22W9TaZrNb	—
—	—	3146-3	—	—	CoCr24Ni10WTaZrB	—
—	—	—	—	—	—	—
—	—	—	—	—	CoCr20Ni20Ta	—
—	—	—	—	—	—	—
—	—	—	—	—	CoCr25NiMoWNb	—
—	—	—	—	—	CoCr12MoW	—

Swiss Machine List

Citizen/Cincom

Machine Model	Gang Station					Turret Station						Sleeve Station		Hand	Max cutting dia
	Inch		Metric		Number of tools	Inch		Metric		Number of tools		Inch	Metric		
	h×b	L	h×b	L		h×b	L	h×b	L	Turret	Station	"	mm		mm
A12	□3/8	4.75	□10	100	5			—	—	—	—	ϕ3/4	ϕ20	R	ϕ12
A16	□3/8	4.75	□10	100	5			—	—	—	—	ϕ3/4	ϕ20	R	ϕ16
A20	□1/2	4	□12(□13)	120	5-7			—	—	—	—	ϕ1		R	ϕ20
A25	□1/2	4	□12(□13)	120	5/6			—	—	—	—	ϕ1		R	ϕ25
A32	□5/8	4.75	□16	150	6			—	—	—	—	ϕ1		R	ϕ32
B12, B12E	□3/8	4.75	□10	100	5			—	—	—	—	ϕ3/4	ϕ20	R	ϕ12
B16E	□3/8	4.75	□10	10	5			—	—	—	—	ϕ3/4	ϕ20	R	ϕ16
B20	□1/2	4.75	□12(□13)	120	6			—	—	—	—	ϕ3/4	ϕ20	R	ϕ20
BL12	□3/8	4.75	□10	60-120	5			—	—	—	—	ϕ3/4	ϕ20	R	ϕ12
BL20			□12(□13)	120	7			—	—	—	—	ϕ3/4	ϕ20	R	ϕ20
BL25			□12(□13)	120	7			—	—	—	—	ϕ3/4	ϕ20	R	ϕ25
C12	□3/8	4.75	□10	120	6			—	—	—	—	ϕ3/4		R	ϕ12
C16	□3/8	4.75	□10	120	6			—	—	—	—	ϕ3/4		R	ϕ16
C32	□5/8	4.75	□16	130	5			—	—	—	—	ϕ1		R	ϕ32
E32			—	—	—			□16(19×13)	90	2	10/Turret	ϕ1		R	ϕ32
F10			—	—	—			□10	60	1	10	ϕ3/4		R	ϕ10
F12			—	—	—			□10	60	1	10	ϕ3/4		R	ϕ12
F16			—	—	—			□10	60	1	10	ϕ3/4		R	ϕ16
F20			—	—	—			□16(19×13)	90	1	10	ϕ1		R	ϕ20
F25			—	—	—			□16(19×13)	90	1	10	ϕ1		R	ϕ25
FL25			—	—	—			□16	90	1	12		ϕ16	R	ϕ25
FL42			—	—	—			□16	90	1	12		ϕ16	R	ϕ42
G10			—	—	—			□10	60	1	8	—	—	R	ϕ10
G16			—	—	—			□10	60	1	8	—	—	R	ϕ16
G32			—	—	—			□16(19×13)	90	1	10	—	—	R	ϕ32
K12, K12E	□3/8		□10	100	7			—	—	—	—		ϕ20	R	ϕ12
K16, K16E	□3/8		□12	100	6			—	—	—	—		ϕ20	R	ϕ16
L10			□8	100-130	5			—	—	—	—	ϕ5/8		R	ϕ10
L12	□3/8	4	□10	100	6			—	—	—	—	ϕ3/4	ϕ20	R	ϕ12
L16, L16E			□12(□10)	130	7			—	—	—	—	ϕ3/4		R	ϕ16
L20, L20E	□1/2	4.75	□12	130	7			—	—	—	—	ϕ3/4		R	ϕ20
L25	□5/8	4.75	□16	130	5			—	—	—	—	ϕ1		R	ϕ25
L32	□5/8	4.75	□16	130	5			—	—	—	—	ϕ1		R	ϕ32
$M_2$12, $M_3$12	□3/8		□10	120	5			□10	60	1	10	ϕ3/4		R	ϕ12
$M_2$16, $M_3$16, $M_4$16	□3/8		□10	120	5			□10	60	1	10	ϕ3/4		R	ϕ16
$M_2$20, $M_3$20	□5/8	4.75	□12	130	5	□3/4		□16	90	1	10	ϕ1		R	ϕ20
$M_2$32, $M_3$32, $M_4$32	□5/8	4.75	□16	130	5	□3/4		□16	90	1	10	ϕ1		R	ϕ32
M20	□1/2	4	□13(□12)	150	5	□1/2		□10	60	1	10	ϕ3/4		R	ϕ20
MSL12			□10	120	—			—	—	—	—	—	—	R	ϕ12
R04			□8	120	7			—	—	—	—	ϕ5/8		R	ϕ4
R07			□8	120	5			—	—	—	—	ϕ5/8		R	ϕ7
RL02			□16	60-150	Max 6			—	—	—	—		ϕ16/ϕ20	L	ϕ20
RL21			□10(□12)	90	—			—	—	—	—	ϕ3/4		R	ϕ20

STAR

Machine Model	Gang Station					Turret Station						Sleeve Station		Hand	DS-Sleeve item number	Max cutting dia
	Inch		Metric		Number of tools	Inch		Metric		Number of tools		Inch	Metric			
	h×b	L	h×b	L		h×b	L	h×b	L	Turret	Station	"	mm			mm
ECAS-12			□10	95-150	6								ϕ22	R	SS-DSU-L23 SS-DSU-SK	ϕ13
ECAS-20			□12(16)	80-144	6								ϕ22	R	SS-DSU-L23 SS-DSU-SK	ϕ20
ECAS-20T								□12(16)	80	3	8/Turret		ϕ22	R	SS-DSU-B8D34	ϕ20
ECAS-32T			□16	80-120	4			□16	60-78	2	10/Turret		ϕ22/32	R	SS-DSU-SK	ϕ32
JNC-10								□8	65	1	6		-	L	—	ϕ10
JNC-16								□10	80	1	6		-	L	—	ϕ16
JNC-25/32								□16	78-120	1	10		ϕ22	R	—	ϕ25/ϕ32
KJR-16B/25B								□16	78	1	12/16		ϕ22	R	—	ϕ16/ϕ25
KNC-16/20								□16	68	1	16		ϕ22	R	—	ϕ16/ϕ20
KNC-25II/32II								□16	78	1	20		ϕ22/32	R	—	ϕ25/ϕ32
RNC-10/16			□10	80-120	5								ϕ22	R	—	ϕ10/ϕ16
RNC-16II/16BII			□10	80-120	5								ϕ22	R	—	ϕ16
SA-16R			□10	95-120	6								ϕ22	R	—	ϕ16
SB-12II/12R/16II	□1/2 (3/8)		□12(10)	95-130	6(7)								ϕ22	R	SS-DSU-L23 SS-DSU-SK	ϕ12/ϕ13/ϕ16
SB-16/16R	□1/2 (3/8)		□12(10)	95-130	6(7)								ϕ22	R	SS-DSU-L23 SS-DSU-SK	ϕ16
SB-20/20R	□1/2 (3/8)		□12(10)	95-130	6(7)								ϕ22	R	SS-DSU-L23 SS-DSU-SK	ϕ20
SC-20			□12	95-130	6								ϕ22	R	—	ϕ20
SE-12/12B, 16/16B			□10	95-120	5								ϕ22	R	—	ϕ13/ϕ16
SF-25								□16	73-98	1	10		ϕ22/32	R	—	ϕ25
SG-42								□16(20)	84-88	1	10		ϕ22/32	R	—	ϕ42
SH-12/16			□10	95-120	5								ϕ22	R	—	ϕ13/ϕ16
SH-7			□8	95-120	5								ϕ22	R	—	ϕ7
SI-12/12C			□10	80-130	6								ϕ22	R	—	ϕ13
SR-10J	□5/16		□8	67-110	6								ϕ22	R	SS-DSU-L23 SS-DSU-SK	ϕ10
SR-16/20			□12	95-120	5								ϕ22	R	—	ϕ16/ϕ20
SR-20J	□1/2		□12	100-135	6								ϕ22	R	SS-DSU-L23 SS-DSU-SK	ϕ20
SR-20R/20RII/20RIII			□12	100-135	6								ϕ22	R	SS-DSU-L23 SS-DSU-SK	ϕ20
SR-20RIV	□1/2		□12	100-130	7								ϕ22	R	SS-DSU-B8L23	ϕ20
SR-25J/32J	□5/8		□16	95-155	6								ϕ22/32	R	SS-DSU-L23 SS-DSU-SK	ϕ25/ϕ32
SR-32			□16	100-135	6								ϕ22	R	—	ϕ32
SST-16			□12	95-115	5								ϕ22	R	—	ϕ16
ST-20								□12(16)	70-78	3	8/Turret		ϕ22	R	—	ϕ20
ST-38								□16(20)	85	3	10/Turret		ϕ22/32	R	—	ϕ38
SV-12/20			□12	95-135	4			□12	70-78	1	8		ϕ22	R	—	ϕ13/ϕ20
	□1/2		□12/□16	95-135	5			□16	65-70	1	8			R	—	
SV-32			□16	95-135	4			□16	80-88	1	10		ϕ22/32	R	—	ϕ32
SV-32J/32JII			□16	95-135	4			□16	65-70	1	8		ϕ22/32	R	—	ϕ32
SV-38R			□16+□20 (Cut off)	95-135	5			□16(20)	84-88	1	10		ϕ22/32	R	SS-DSU-B8D34	ϕ38
SW-12RII			□10	80-115	6								ϕ16	R	SS-DSU-B8L23	ϕ13
SW-20	□1/2 (5/8)		□12(16)	80-144	6								ϕ22	R	SS-DSU-B8L23	ϕ20
SW-7			□8	80-120	4								—	R	—	ϕ7

TSUGAMI

Machine Model	Gang Station					Turret Station						Sleeve Station		Hand	Max cutting dia
	Inch		Metric		Number of tools	Inch		Metric		Number of tools		Inch	Metric		
	h×b	L	h×b	L		h×b	L	h x b	L	Turret	Station	"	mm		mm
P013H/P014H			□8	100-120	6			—	—	—	—		ϕ16	R	ϕ1
P033H/P034H			□8	100-120	6			—	—	—	—		ϕ16	R	ϕ3
B007-III	—	—	□7(□8/□10)	85	8			—	—	—	—		ϕ25	R	ϕ7
B073-II	—	—	□8	85	9								ϕ20	R	ϕ7
B074/B07-V	—	—	□8	85	9			—	—	—	—		ϕ20	R	ϕ7
B0123/B0124/B0125/B0126	—	—	□12	85	9			—	—	—	—		ϕ20	R	ϕ12
B012F/B012-V/BE12-V	—	—	□12	85	9			—	—	—	—		ϕ20	R	ϕ12
B016MF	—	—	□12	85	9			—	—	—	—		ϕ20	R	ϕ16
B018-III	—	—	□12	85	9			—	—	—	—		ϕ20	R	ϕ18
B0203/B0204/B0205/B025-II/B0205-III/B0206-II	—	—	□12	85	9			—	—	—	—		ϕ20	R	ϕ20
B020F/B020-V/BE20-V	—	—	□12	85	9			—	—	—	—		ϕ20	R	ϕ20
B026-V	—	—	□12(□16)	85	6			—	—	—	—		ϕ25	R	ϕ26
B0265-II/B0266-II	—	—	□16	100	12								ϕ25	R	ϕ26
B0325-II/B0326-II	—	—	□16	100	12								ϕ25	R	ϕ32
B0385/B0385L	—	—	□16	125	8			—	—	—	—		ϕ32	R	ϕ38
B038T	—	—	□16	125	3			□20	125	1	8		ϕ25/ϕ32	R	ϕ38
BA20-III			□12	85	6			—	—	—	—		ϕ25	R	ϕ20
BA26-III			□12(□16)	85	6			—	—	—	—		ϕ25	R	ϕ26
BC18	□1/2		□12	85	10			—	—	—	—		ϕ25	R	ϕ18
BC25	□1/2		□12	85	10			—	—	—	—		ϕ10/ϕ25	R	ϕ25
BE18	□1/2		□12	85	9			—	—	—	—		ϕ20	R	ϕ18
BH20/BH20Z	□1/2		□12	85	4			□12	85	1	12		ϕ25/ϕ32	R	ϕ20
BH38	□5/8		□16	125	7			□20	125	1	12		ϕ25/ϕ32	R	ϕ38
BM07			□8	85	9			—	—	—	—		ϕ20	R	ϕ7
BM163/BM164/BM165	□1/2		□12	85	9			—	—	—	—		ϕ20	R	ϕ16
BM20-V	□1/2		□12	85	9			—	—	—	—		ϕ20	R	ϕ20
BN12-III			□12	85	7			—	—	—	—		ϕ20	R	ϕ12
BN20-III			□12(□16)	85	7			—	—	—	—		ϕ20	R	ϕ20
BS12-V	□1/2		□12	85	8(12)			—	—	—	—		ϕ20/ϕ25	R	ϕ12
BS18-III	□1/2		□12	85	7(10)			—	—	—	—		ϕ14/ϕ25	R	ϕ18
BS20-V	□1/2		□12	85	8(12)			—	—	—	—		ϕ20/ϕ25	R	ϕ20
BS26(ABC)-V	□5/8		□16	100	7(10)			—	—	—	—		ϕ16/ϕ25	R	ϕ26
BS32C-V	□5/8		□16	100	6			—	—	—	—		ϕ16/ϕ25	R	ϕ32
BU12			□12	85	4			□12	80	1	8		ϕ20	R	ϕ51
BU20			□12	85	4			□12	80	1	8		ϕ20	R	ϕ20
BU26			□16	100	7			□20	80	1	8		ϕ20/ϕ32	R	ϕ26
BU38	□1/2		□16	100	7			□20	80	1	8		ϕ20/ϕ32	R	ϕ38
BW07-III	□1/2		□12	85	7			—	—	—	—		ϕ20	R	ϕ7
BW12-III	□1/2		□12	85	7			—	—	—	—		ϕ20	R	ϕ12
BW20-III	□1/2		□12(□16)	85	7			—	—	—	—		ϕ20	R	ϕ20
C004-III			□13	60-100	6-8			—	—	—	—		-ϕ10	R/L	ϕ120
C150	—	—	□10	60-100	4-6			—	—	—	—		-ϕ8	R/L	ϕ80
C180	—	—	□12	60-100	4-6			—	—	—	—		-ϕ10	R/L	ϕ120
C220	—	—	□13	60-100	6-8			—	—	—	—		-ϕ10	R/L	ϕ120
C300-III	—	—	□16	100-130	6-10			—	—	—	—		-ϕ14	R/L	ϕ170
CH154			□12	60-100	-16			—	—	—	—		-ϕ10	R/L	ϕ15
M34J			—	—	—			□20	125	1	12		ϕ20/ϕ32	R	ϕ34
M42J/M42D/M42SD			—	—	—			□20	125	1	12		ϕ25/ϕ32	R	ϕ42
M50SY-III			—	—	—			□20	100	1	12		ϕ32	R	ϕ51
M50J			—	—	—			□20	100	1	12		ϕ20/ϕ32	R	ϕ51
MB25			—	—	—			□20	80	2	8/Turret		ϕ20/ϕ32	R	ϕ25
MB35-III			—	—	—			□20	80	2	8/Turret		ϕ20/ϕ32	R	ϕ35
MB38-III			—	—	—			□20	80	2	8/Turret		ϕ20/ϕ32	R*	ϕ38
MB50-III			—	—	—			□20	80	2	8/Turret		ϕ20/ϕ32	R	ϕ50
MU26			—	—	—			□20	80	2	8/Turret		ϕ20/ϕ32	R	ϕ26
MU38			—	—	—			□20	80	2	8/Turret		ϕ20/ϕ32	R	ϕ38
NU50-III			—	—	—			□20	100	1	12		ϕ20/ϕ32	R	ϕ51
B020M-II/SS20M/SS20M-5AX			□10*	46	—			BT15 spindle			24		ϕ20	R	ϕ20
S205/S206	□1/2		□12(□16)	100	8			—	—	—	—		ϕ20/ϕ22	R	ϕ20
SS20	□1/2		□16	100	8			—	—	—	—		ϕ20/ϕ22	R	ϕ20
SS207/SS207-5AX	□1/2		□12(□16)	100	8			—	—	—	—		ϕ20/ϕ22	R	ϕ20
SS26	□5/8		□16	100	7			—	—	—	—		ϕ20/ϕ22	R	ϕ26
SS267/SS267-5AX	□5/8		□16	100	8								ϕ25	R	ϕ26
SS32/SS32L	□5/8		□16	100	7			—	—	—	—		ϕ20/ϕ22	R	ϕ32
SS327/SS327-5AX	□5/8		□16	100	8								ϕ25	R	ϕ32
TMB2			—	—	—			□20	125	1	16		ϕ32	R	ϕ51
TMU1			—	—	—			□20	125	1	16		ϕ32	R	ϕ38
TMA8-IV/TMA8J			□20*	100				KM40 spindle			30			R	ϕ220
M06J								□25	150	1	8		ϕ32/ϕ40	R	ϕ260
M06SY								□25	150	1	12		ϕ32/ϕ40	R	ϕ260
M06JC								□20	125	1	8		ϕ32/ϕ40	R	ϕ260
M08J								□25	150	1	8		ϕ32/ϕ40	R	ϕ280
M08SY/M08D/M08SD								□25	150	1	12		ϕ32/ϕ40	R	ϕ280

TORNOS

Machine Model	Gang Station				Number of tools	Sleeve Station		Hand	Max cutting dia
	Metric					Inch	Metric		
	h×b	L	h×b	L		"	mm		mm
EvoDECO 10/10	□5/16		□8		8		ϕ20/ϕ25	R	ϕ10
EvoDECO 10/8	□5/16		□8		8		ϕ20/ϕ25	R	ϕ10
EvoDECO 16/10	□1/2		□12		10		ϕ20/ϕ25	R	ϕ16
EvoDECO 16/8	□1/2		□12		10		ϕ20/ϕ25	R	ϕ16
EvoDECO 20	□5/8		□16		10		ϕ20/ϕ25	R	ϕ25.4
EvoDECO 32	□5/8		□16		10		ϕ20/ϕ25	R	ϕ32
Swiss ST 26	□1/2		□12		17		ϕ20/ϕ22/ϕ25	R	ϕ25.4
Sigma 20/6	□5/8		□16		14	ϕ1	ϕ20	R	ϕ25.4
Sigma 32/6	□5/8		□16		14	ϕ1.26	ϕ32	R	ϕ32
SwissNano	□5/16		□8		7		ϕ12/ϕ16	R	ϕ4
Delta 12/4	□1/2*		□12	85	5		ϕ20	R	ϕ12
Delta 12/5	□1/2*		□12	85	5		ϕ20	R	ϕ12
Delta 20/4	□1/2*		□12	85	5		ϕ20	R	ϕ20
Delta 20/5	□1/2*		□12	85	5		ϕ20	R	ϕ20
Delta 38/5B			□20	125	8		ϕ25/ϕ32	R	ϕ38
Delta 38/5BL			□20	125	8		ϕ25/ϕ32	R	ϕ38
Gamma 20/5			□16	100	8		ϕ20/ϕ22	R	ϕ20
Gamma 20/6			□16	100	8		ϕ20/ϕ22	R	ϕ20
CT20	□1/2		□12	100	5			R	ϕ20

*Except cut off must be 12mm

NOMURA

Machine Model	Gang Station				Number of tools	Sleeve Station		Hand	Max cutting dia
	Inch		Metric			Inch	Metric		
	h×b	L	h×b	L		"	mm		mm
NS-P1053A			□9.5	130	5	—	—	R	ϕ10
NN-10C			□10	130	6		ϕ17	R	ϕ10
NN-10E			□10	130	6		ϕ16	R	ϕ10
NN-10C2			□10	130	6		ϕ17	R	ϕ10
NN-10CS			□10	130	6		ϕ17	R	ϕ10
NN-10CS (No live tools)			□10	130	5		ϕ17	R	ϕ10
NN-10SII			□10	130	5		ϕ23	R	ϕ10
NN-10T			□10	130	7		ϕ23	R	ϕ10
NN-10SB5			□10	130	5		ϕ23	R	ϕ16
NN-16SB5			□10	130	5		ϕ23	R	ϕ16
NN-16SB6 Type1	□1/2	5.12	□12.7	130	5		ϕ17(ϕ22)	R	ϕ16
NN-16SB6 Type2	□1/2	5.12	□12.7	130	5		ϕ17(ϕ22)	R	ϕ16
NN-16SB6 Type2.5	□1/2	5.12	□12.7	130	5		ϕ17(ϕ22)	R	ϕ16
NN-16SB6 Type3	□1/2	5.12	□12.7	130	5		ϕ17(ϕ22)	R	ϕ16
NN-16HIII			□12	130	6		ϕ23	R	ϕ16
NN-20HIII			□12	130	6		ϕ23	R	ϕ20
NN-16UIII			□12	130	5		ϕ23	R	ϕ16
NN-20UIII			□12	130	5		ϕ23	R	ϕ20
NN-20CS	□1/2	5.12	□12.7	130	5(6)		ϕ22	R	ϕ20(ϕ25)
NN-20U5	□1/2	5.12	□12.7	130	5(6)		ϕ22	R	ϕ20(ϕ25)
NN-16UB5			□12	130	5		ϕ23	R	ϕ16
NN-20UB5			□12	130	5		ϕ23	R	ϕ20
NN-20UB7			□12	130	6		ϕ23	R	ϕ20
NN-20UB8	□1/2	5.12	□12.7	130	5(6)		ϕ22	R	ϕ20(ϕ25)
NN-20YB			□12	130	8		ϕ23	R	ϕ20
NN-25YB/32YB			□16	130	8		ϕ23/ϕ32	R	ϕ25
NN-32YB2			□16	130	5		ϕ22/ϕ32	R	ϕ32
NN-16J	□1/2	5.12	□12.7	130	6		ϕ23	R	ϕ16
NN-20J	□1/2	5.12	□12.7	130	6		ϕ23	R	ϕ20
NN-20J2	□1/2	5.12	□12.7	130	6		ϕ22	R	ϕ20

Hardness Comparison Chart

Vickers Hardness (HV)	Rockwell hardness			Brinell hardness, 10 mm balls, 3000 kgf load	Shore hardness	Tensile strength Kgf/mm² [N/m²] Approximate value MPa (1)
	Scale A Load: 60 kgf brale indenter (HRA)	Scale C Load: 150 kgf brale indenter (HRC)	Scale B Load: 100 kgf Diameter 1/16" indenter (HRB)	Tungsten carbide ball		
2200	(95.1)	–	–	–	–	
2100	(94.6)	–	–	–	–	
2000	94.2	–	–	–	–	
1900	93.7	(80.5)	–	–	–	
1800	93.2	(79.2)	–	–	–	
1700	92.7	(77.9)	–	–	–	
1600	91.8	(76.6)	–	–	–	
1500	91.0	(75.3)	–	–	–	
1450	90.4	(74.6)	–	–	–	
1400	90.0	74.0	–	–	–	
1350	89.6	73.4	–	–	–	
1300	89.1	72.7	–	–	–	
1250	88.6	72.1	–	–	–	
1200	88.1	71.5	–	–	–	
1150	87.6	70.9	–	–	–	
1100	87.1	70.3	–	–	–	
1050	86.6	69.6	–	–	–	
1000	86.2	68.9	–	–	–	
940	85.6	68.0	–	–	97	
920	85.3	67.5	–	–	96	
900	85.0	67.0	–	–	95	
880	84.7	66.4	–	(767)	93	
860	84.4	65.9	–	(757)	92	
840	84.1	65.3	–	(745)	91	
820	83.8	64.7	–	(733)	90	
800	83.4	64.0	–	(722)	88	
780	83.0	63.3	–	(710)	87	
760	82.6	62.5	–	(698)	86	
740	82.2	61.8	–	(684)	84	
720	81.8	61.0	–	(670)	83	
700	81.3	60.1	–	(656)	81	
690	81.1	59.7	–	(647)	–	
680	80.8	59.2	–	(638)	80	
670	80.6	58.8	–	630	–	
660	80.3	58.3	–	620	79	
650	80.0	57.8	–	611	–	
640	79.8	57.3	–	601	77	
630	79.5	56.8	–	591	–	
620	79.2	56.3	–	582	75	
610	78.9	55.7	–	573	–	
600	78.6	55.2	–	564	74	
590	78.4	54.7	–	554	–	
580	78.0	54.1	–	545	72	
570	77.8	53.6	–	535	–	
560	77.4	53.0	–	525	71	
550	77.0	52.3	–	517	–	
540	76.7	51.7	–	507	69	
530	76.4	51.1	–	497	–	
520	76.1	50.5	–	488	67	
510	75.7	49.8	–	479	–	
500	75.3	49.1	–	471	66	

Vickers Hardness (HV)	Rockwell hardness			Brinell hardness, 10 mm balls, 3000 kgf load	Shore hardness	Tensile strength Kgf/mm² [N/m²] Approximate value MPa (1)
	Scale A Load: 60 kgf brale indenter (HRA)	Scale C Load: 150 kgf brale indenter (HRC)	Scale B Load: 100 kgf Diameter 1/16" indenter (HRB)	Tungsten carbide ball		
490	74.9	48.4	–	460	–	
480	74.5	47.7	–	452	64	
470	74.1	46.9	–	442	–	
460	73.6	46.1	–	433	62	
450	73.3	45.3	–	425	–	
440	72.8	44.5	–	415	59	
430	72.3	43.6	–	405	–	
420	71.8	42.7	–	397	57	
410	71.4	41.8	–	388	–	
400	70.8	40.8	–	379	55	
390	70.3	39.8	–	369	–	
380	69.8	38.8	(110.0)	360	52	
370	69.2	37.7	–	350	–	
360	68.7	36.6	(109.0)	341	50	
350	68.1	35.5	–	331	–	
340	67.6	34.4	(108.0)	322	47	
330	67.0	33.3	–	313	–	
320	66.4	32.2	(107.0)	303	45	
310	65.8	31.0	–	294	–	
300	65.2	29.8	(105.5)	284	42	
295	64.8	29.2	–	280	–	
290	64.5	28.5	104.5	275	41	
285	64.2	27.8	–	270	–	
280	63.8	27.0	103.5	265	40	
275	63.5	26.4	–	261	–	
270	63.1	25.6	102.0	256	38	
265	62.7	24.8	–	252	–	
260	62.4	24.0	101.0	247	37	825
255	62.0	23.1	–	243	–	805
250	61.6	22.2	99.5	238	36	795
245	61.2	21.3	–	233	–	780
240	60.7	20.3	98.1	228	34	765
230	–	18.0	96.7	219	33	730
220	–	15.7	95.0	209	32	695
210	–	13.4	93.4	200	30	670
200	–	(11.0)	91.5	190	29	635
190	–	(8.5)	89.5	181	28	605
180		(6.0)	87.1	171	26	580
170		(3.0)	85.0	162	25	545
160		(0.0)	81.7	152	24	515
150			78.7	143	22	490
140			75.0	133	21	455
130			71.2	124	20	425
120			66.7	114		390
110			52.3	105		–
100			56.2	95		–
95			52.0	90		–
90			48.0	86		–
85			41.0	81		–

(1) 1 MPa = 1 N/mm²

(2)This table is an excerpt from the JIS Iron and Steel Handbook

(3)Values in parentheses in the above table are not usually used

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LLR-25S-20*65	Parts	Y16
LLR-T10	Wrench	F6, F7, F8, F9, F11, F12, F13, F14, F15, G5, G6
LLR-T15	Wrench	F14
LLR-T20	Wrench	F6, F7, F8, F9, F11, F12, F13, G5, G6
LNJ	Insert	E8
LNM	Insert	E8
LNX	Insert	I9
LRIS-2.5*7	Parts	L17
LRIS-4*10	Parts	L17
LRIS-4*10PW	Parts	L17
LRIS-4*12	Parts	L17

Item number	Description	Page number
LRIS-4*12PW	Parts	L17
LRIS-4*8	Parts	L17
LR-S-4*10PW	Parts	L17
LR-S-4*12PW	Parts	L17
LR-S-4*9	Parts	L17
LW-2	Wrench	J18, J31, K157, K159, K186
LW-2.5	Wrench	F20
LW-3	Wrench	J18, K157, K186
LW-3S	Wrench	H17
LW-4	Wrench	F6, F10, F11, F16, H12, H16, H18
LW-4*104	Wrench	J18, K157, K159, K186
LW-5	Wrench	F20, H16
LWU-4	Wrench	F20
LWU-5	Wrench	F20
M3*8	Parts	I6, I10, I12, I14
MBC	Parts	I23
MBL	Insert	V23
NBH	Toolholder	V14, V15, W9, W10
NGTB	Toolholder	T18
NGTN	Toolholder	T18
NSR	Toolholder	H11
NTTB	Toolholder	U14
PCLN	Toolholder	Q37
PDJN	Toolholder	Q38
POLY-V	Toolholder	H20, H21, H22, H23
PTAN	Toolholder	Q34
PTLN	Toolholder	Q34
PTM	Insert	H20, H21, H22, H23
PTXN	Toolholder	Q34
R1E	Parts	H8
R2E	Parts	H8
RA	Cutter	I22
RA06P03NC	Parts	I23
RCGX	Insert	E9
RCMX	Insert	E39
RD	Cutter	I22
REZ	Cutter	X4
RKN	Insert	H11
RLR-20S	Wrench	Y16
RNG	Insert	E10
RNIW	Cutter	I7
RNM	Insert	E25
RNMG	Insert	E39
RPG	Insert	E11
RPGS	Insert	E47
RPGX	Insert	E11
RPIW	Cutter	I6
RPMX	Insert	E39
S06F-MBR	Toolholder	V23
S06F-SCLP	Toolholder	V25
S07G-SCLP	Toolholder	V25
S07G-STUC	Toolholder	V30
S08G-SEXR	Toolholder	V24
S08H-BG	Toolholder	V19

Item number	Description	Page number
S08H-SCLC	Toolholder	V26
S08H-SCLP	Toolholder	V25
S08H-STUP	Toolholder	V30
S10K-BG	Toolholder	V19
S10K-SCLC	Toolholder	V26
S10K-STUP	Toolholder	V30
S12-CRGP	Toolholder	G4
S12M-SCLC	Toolholder	V26
S12M-STUP	Toolholder	V30
S16Q-SCLC	Toolholder	V26
S16Q-STUP	Toolholder	V30
S25R-WCLN	Toolholder	G5
S25R-WWLN	Toolholder	G6
S32S-WCLN	Toolholder	G5
S32S-WWLN	Toolholder	G6
S32T-WDUN	Toolholder	G5
S40T-WCLN	Toolholder	G5
S40T-WDUN	Toolholder	G5
S40T-WSKN	Toolholder	G6
S40T-WWLN	Toolholder	G6
S-412	Parts	H11
S50-CRGN	Toolholder	G4
S50U-WCLN	Toolholder	G5
SBB	Insert	V17
SBFB	Insert	V16
SBFS	Insert	V16, V17
SBG	Insert	V18
SBT	Insert	V20
SC02C	Parts	F18, F19
SC05C	Parts	F18, F19
SC06C	Parts	F18, F19
SC08C	Parts	F19
SC10C	Parts	F19
SC10F	Parts	F18, F19
SC40C	Parts	F19
SC40F	Parts	F18, F19, H8, H9
SC50F	Parts	F19
SC60F	Parts	F19
SCAC	Toolholder	Q10
SCGW	Insert	E12
SCJ	Parts	N5, O10
SCLC	Toolholder	O4, Q10
SCMT	Insert	E39
SDCW	Insert	E12, E39, I17, I18, I19
SDJC	Toolholder	O4, Q16
SDKN	Insert	E39
SDNCN	Toolholder	Q16
SDQC	Toolholder	Q16
SDW	Insert	I17, I18, I19
SDXC	Toolholder	Q16
SECN	Insert	E39
SEK	Insert	E39
SFG	Insert	V18
SHFB	Insert	V12

Item number	Description	Page number
SHFS	Insert	V12, V13
SM2RV	Parts	F18, F19
SM2RVS	Parts	F18, F19
SM3RV	Parts	F18, F19
SM4RV	Parts	F18, F19
SM5RV	Parts	F19
SM6RV	Parts	F19
SM8RV	Parts	F19
SNG	Insert	E13, E14, E40, I11, I13, I15
SNGA	Insert	E14, E25
SNGF	Insert	I11, I13, I15
SNGG	Insert	E40
SNGX	Insert	E15
SNMA	Insert	E25
SNMG	Insert	E40
SPC	Insert	E41
SPCE	Insert	E41
SPEB	Insert	E41
SPG	Insert	E15, E25, E41
SPGR	Insert	E41
SPKN	Insert	E41
SPM	Insert	E41
SPME	Insert	E41
SPMH	Insert	E41
SPMR	Insert	E41
SS04	Parts	V9,V11,V14,V15,W7,W8,W9,W10
SS05	Parts	V14,V15,W7,W10
SS06	Parts	V9,W7
SS08	Parts	V9,V11,W7,W8
SS-DSU	DS Sleeve	O26
SSP	Insert	W2
STAC	Toolholder	Q33
STTN	Toolholder	U14
SVAC	Toolholder	Q25, Q26, R13
SVJB	Toolholder	O5, Q24
SVJC	Toolholder	O5, Q26
SVQC	Toolholder	Q27
SVQP	Toolholder	Q30
SVVC	Toolholder	Q27
SVXC	Toolholder	Q26
SVXP	Toolholder	Q31
T-15A	Wrench	I10, I12, I14
T-20	Wrench	I17, I18, I19
TB	Toolholder	R16
TB	Insert	R16
TBDP	Toolholder	R12
TBDP	Insert	R12
TBGE	Insert	E16, E42
TBMH	Insert	R19
TBP	Toolholder	O6, R8
TBP	Insert	O6, R8
TBPA	Insert	O6, R10
TBPS	Insert	O31, R7
TBT	Toolholder	R16

Item number	Description	Page number
TBVC	Toolholder	R14
TBVC	Insert	R14
TC5TN	Parts	F14
TC6CN	Parts	F6, F7, F11, G5, G6
TCGD	Insert	E43, K179
TCGH	Insert	E42, E43, V31
TCGP	Insert	E42, V31
TCGT	Insert	E42, O33, Q33
TCGW	Insert	E43, Q33
TCMT	Insert	E42
TEEN	Insert	E43
TF	Insert	Q32
TFT	Toolholder	Q32
TGC	Toolholder	V22
TMG	Insert	T15
TMN	Insert	V22
TNEG	Insert	E43
TNG	Insert	E16, E17
TNGA	Insert	E18, E26, E43, Q36
TNGG	Insert	E18, E43, E44, Q36
TNMA	Insert	E26, E43, Q36
TNMG	Insert	E45
TNMP	Insert	E45
TNMX	Insert	E26, Q36
TP	Insert	E19, E46
TPC	Insert	E46
TPG	Insert	E19, E26, E46
TPGD	Insert	E46
TPGE	Insert	E19, E46
TPGH	Insert	E46, E47, V31
TPGP	Insert	E47, V31
TPGR	Insert	E47
TPGW	Insert	E26, V30
TPKN	Insert	E47
TPM	Insert	E47
TPMR	Insert	E47
TPMT	Insert	E26, E39, V30
TTMH	Insert	U14
TTP	Toolholder	U10
TTP	Insert	U10
TTPS	Insert	O32, U8
TW5835	Insert	U20
TW9268	Insert	U20
TWC	TW CUTTER	U18, U19
TWG	Toolholder	T17
TWG	Insert	T17
U104-40	Wrench	I23
U107T10	Wrench	I23
US6000926	Parts	I6
US6000927	Parts	I6
VBGT	Insert	E48, Q24
VBGW	Insert	E27, Q24
VBMT	Insert	E48
VCET	Insert	E49, Q29, R15

Item number	Description	Page number
VCGT	Insert	E49, O33, Q25, Q29, Q31, R13, R15
VCGW	Insert	E27, E49, Q29, R15
VCMT	Insert	E49, Q29
VCMW	Insert	E27, Q29, R15
VDB	Insert	H10
VGE	Insert	H8
VGT	Toolholder	H18
VGW	Insert	H7
VNG	Insert	E20
VNGA	Insert	E20, E27, E50
VNGG	Insert	E50
VNMG	Insert	E50
VNMP	Insert	E50
VPET	Insert	E50, Q30, Q31
VPGT	Insert	E50, Q31
VRAO	Toolholder	F18, F19
W106	Parts	F20
W107	Parts	F20
W110	Parts	F20
W120	Parts	F20
WCBN	Toolholder	F7
WCGT	Insert	E51
WCLN	Toolholder	F6
WDHN	Toolholder	F8
WDJN	Toolholder	F8
WDNNN	Toolholder	F9
WNGA	Insert	E21
WNGG	Insert	E51
WNMG	Insert	E51
WNX	Insert	I16
WPGT	Insert	E51
WS0616-T15	Parts	I10, I12, I14
WSDNN	Toolholder	F11
WSSN	Toolholder	F11
WTFN	Toolholder	F14
WTGN	Toolholder	F14
WVJN	Toolholder	F12
WVPN	Toolholder	F12
WVVNN	Toolholder	F13
WWLN	Toolholder	F15
XNS-36	Parts	G4
XX2815	Wrench	I8, Y16
Y-CTPA	Toolholder	O14, R10
Y-GTPA	Toolholder	O7, O15, T24
Y-GTT	Toolholder	O7, O15, R18, T10
Y-SDJC	Toolholder	O4, O13, Q18
Y-SDNC	Toolholder	O13, Q18
Y-SVJC	Toolholder	O5, O13, Q28
Y-TBDP	Toolholder	O14, R12
Y-TBP	Toolholder	O6, O14, R8

MEMO

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Metalcutting Safety

Applicable Products	Possible Risks	Safety Measures
General Cutting Tools	◎Contact with a sharp cutting edge with bare hands may result in injury.	＊Use protective gear such as protective gloves when taking the tool out of packaging and installing into the machine.
	◎Misuse or using under inappropriate conditions may cause the cutting tool to break and/or shatter into pieces, resulting in personal injury.	＊Use protective equipment, machine guarding and/or protective glasses. ＊Use within the range of recommended conditions. Please refer to the instruction manual and catalog.
	◎Sudden increase in cutting resistance due to sudden impact load or excessive wear may cause the cutting tool to break and/or shatter into pieces, resulting in personal injury.	＊Use protective gear such as protective gloves when taking the tool out of packaging and installing into the machine.
	◎High-temperature chips may be produced and long chips may be ejected, resulting in injury and/or burns.	＊Use protective equipment, machine guarding and/or protective glasses. ＊Before removing chips, always stop the machine. Wear protective gloves and use proper equipment for chip removal.
	◎The tool and material/work being cut can become very hot. Touching them immediately after use may cause burns.	＊Use protective gear such as protective gloves.
	◎Sparks, heat generation due to breakage and/or chips during cutting may cause fire.	＊Do not use the machine and tools in locations where there are risks of ignition or explosion. ＊When using water-insoluble cutting oil, fire prevention measures must be implemented.
	◎Out of balance machine set ups when used at a high-speed, may cause insert breakage due to excess vibration or chatter, resulting in injury.	＊Use protective equipment, machine guarding and/or protective glasses. ＊Perform a trial-run beforehand to make sure the setup is stable, free of chatter, vibration and abnormal noise.
	◎Touching burrs and flashes on machined work may result in personal injury.	＊Use adequate hand protection.
Throw-Away Type Tools (With indexable insert)	◎Inappropriately clamped inserts and/or components may become detached from the machine during cutting, resulting in injury.	＊Before installing the insert, clean the seating surface and clamping components so that they are free of debris. ＊Use the wrench supplied to install the insert and check that the insert and components are securely clamped. Do not use any inserts or components other than the items specified.
	◎Excessively tightening with a device such as a pipe extension may cause the insert and/or components to break or detach due to over clamping.	＊Do not use tightening devices such as pipe extensions to obtain further torque. Always use the supplied wrench.
	◎At high speeds, inserts and/or components may lose clamping pressure due to the loosening effect of centrifugal force. This is very dangerous. Always ensure secure clamping systems and check regularly.	＊Use within the range of recommended conditions. Please refer to the instruction manual and catalog.
Cutters and Rotational Tools	◎As cutters have sharp cutting edges, contact with bare hands may result in injury.	＊Use protective equipment such as protective gloves.
	◎Imbalance or excessive rotation may cause the tool to break due to vibration or chatter, resulting in potential injury.	＊Use at a rotational speed within the recommended conditions. ＊To prevent excessive rotation and vibration due to worn bearings, regularly check the machine rotor/rotating parts for the accuracy and balance and adjust as required.
Brazed Inserts / Tools	◎Inserts may break or become, detached due to incorrect brazing.	＊Use protective equipment such as machine guards and/or protective glasses. Additional guarding around the chuck and drill may be advisable.
Others	◎It is not advisable to use brazed inserts repeatedly as the braze may progressively weaken.	＊Do not use brazed inserts repeatedly as the strength of such inserts is lowered.
	◎Use only for the original and intended purpose. Using outside recommended parameters is very dangerous, causing damages to machines and/or tools.	＊Always use and operate as specified, observing the required safety rules and conditions.

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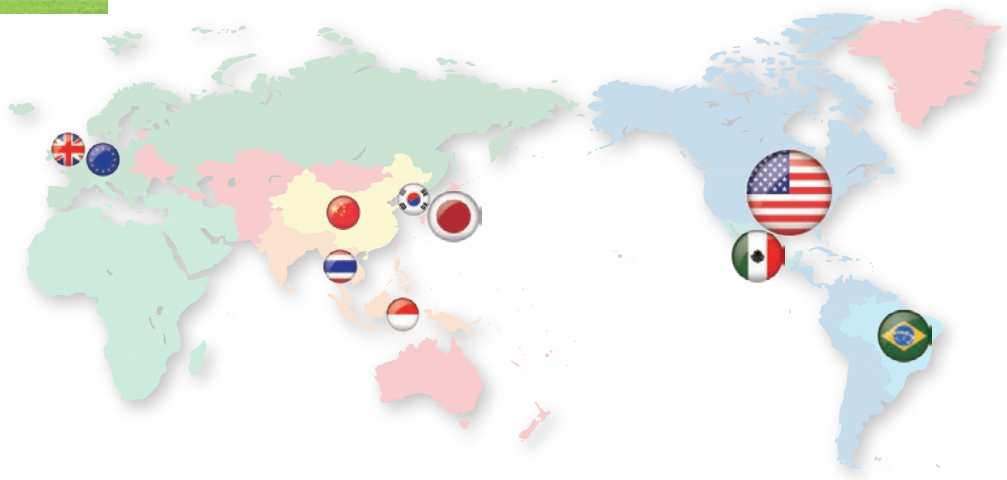

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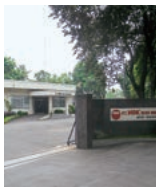

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