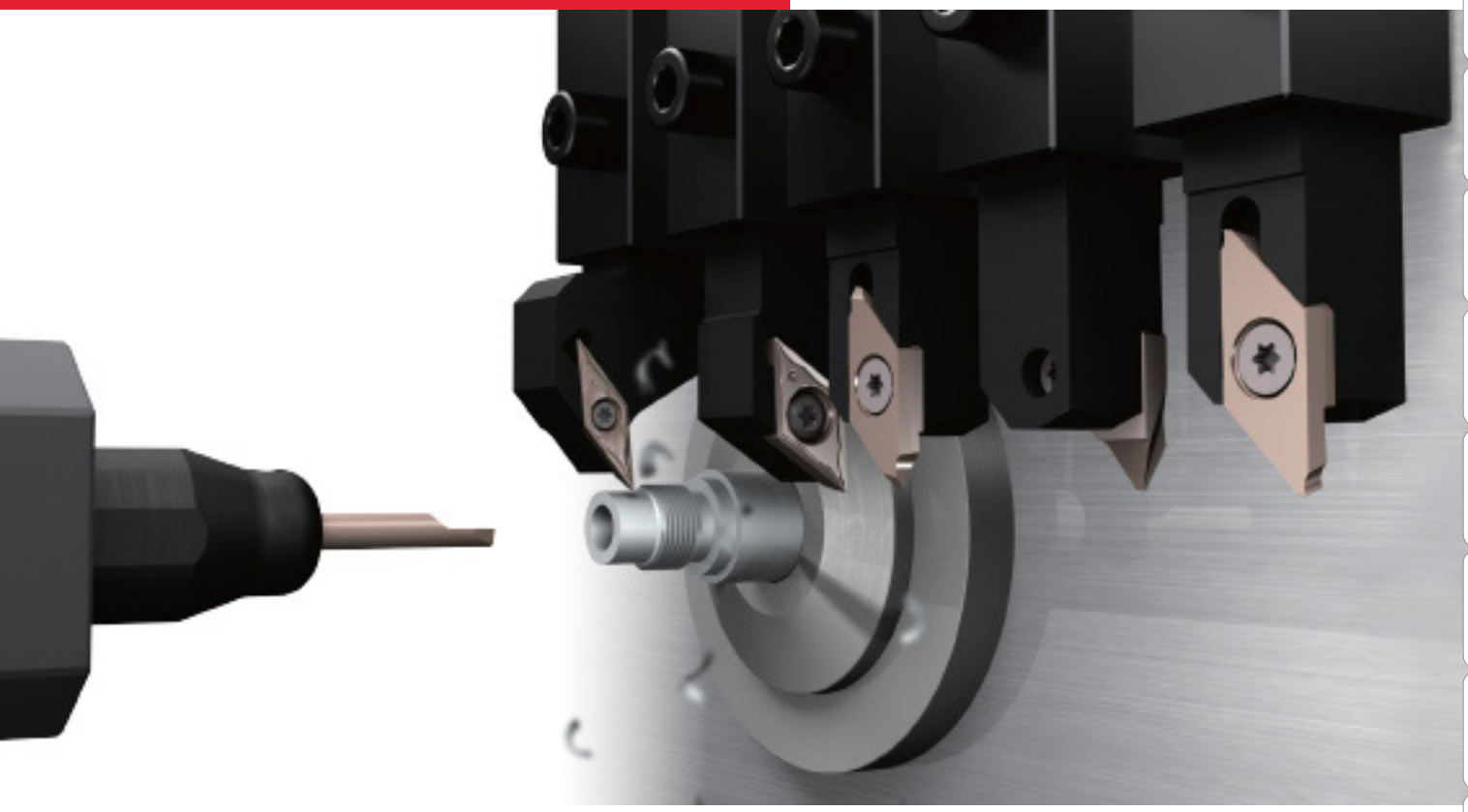
THE NEW VALUE FRONTIER

KYOCERA

PROTOOL

SZERSZÁMIPARI Kft. BUDAPEST

SMALL TOOLS CATALOG



WIDE RANGE OF HIGH PRECISION CUTTING TOOLS

FOR SMALL PARTS MACHINING

ADVANCING PRODUCTIVITY

THE NEW VALUE FRONTIER

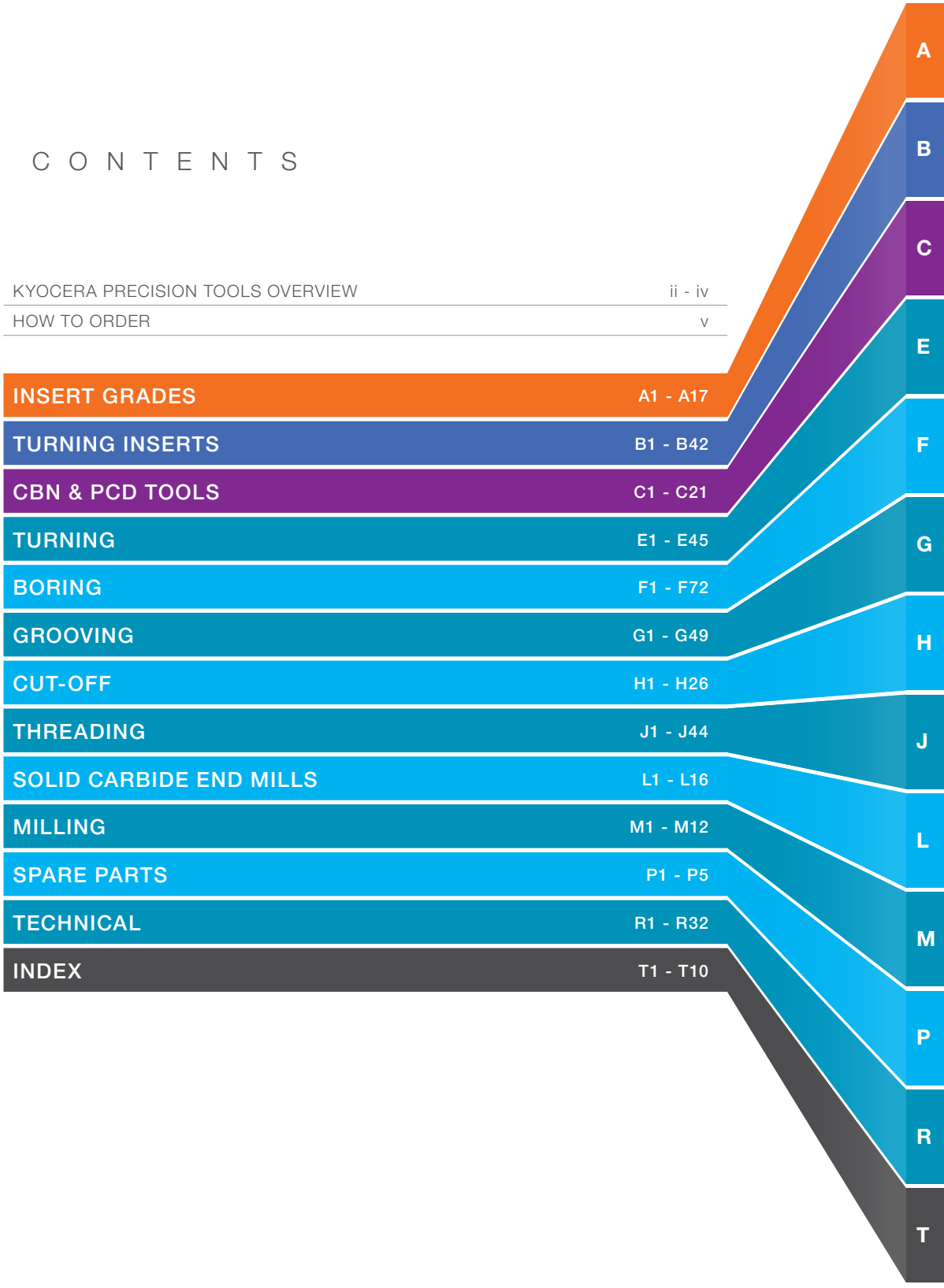
KYOCERA

Continuously Create New Value
at the Cutting Edge of Technology

ADVANCING PRODUCTIVITY

Contributing to the betterment of world-wide manufacturing and our customers' productivity by providing efficient cutting tool products and high-precision machining solutions

CONTENTS



KYOCERA CUTTING TOOLS

GLOBAL FACILITIES NETWORK

NORTH AMERICA

Manufacturing Facilities

North Carolina Facility (USA)

Ohio Facility (USA)

California Facility (USA)

GLOBAL

Manufacturing Facilities

Okaya Facility (JAPAN)

Yokaichi Facility (JAPAN)

Sendai Facility (JAPAN)

Silong Facility (CHINA)

Incheon Facility (KOREA)

KYOCERA CUTTING TOOLS

GLOBAL TECHNICAL CENTERS

North American Technical Center (NC)

Sales & Technical Center (Germany)

Technical Center (BRAZIL)

Technical Center (SINGAPORE)

Technical Center (JAPAN)

Technical Center (CHINA)

Technical Center (JAPAN)

Technical Center (KOREA)

Technical Center (JAPAN)

KPTI Company Overview

Established in April 2014, KPTI unifies two of the world's leading cutting tool manufacturers, Kyocera Tycom Corporation (KTC) and the Cutting Tool Division of Kyocera Industrial Ceramics Corporation (KICC-CT).

The new company creates a combined enterprise that optimizes the strengths of both organizations and facilitates expansion of Kyocera's overall cutting tool-related business in North America. The new combined entity will unify cutting tool resources to create greater efficiencies while positioning the new organization for continued success.

Customers will benefit from a unified sales and support team offering improved customer service and an expanded portfolio of cutting tool products and solutions for the automotive, aerospace, general machining, medical, power generation, printed circuit board and steel markets.

KPTI North American Operations

Costa Mesa, CA

Administration & Manufacturing

- Administration & Accounting Center
- Micro Tools & Round Tools Manufacturing
- Printed Circuit Board Drill Manufacturing
- Micro Tools & PCB Sales & Customer Service Center

Wapakoneta, OH

Steel Tool Holder Manufacturing

- Indexable Drills
- Milling End Mills & Face Mills
- Boring Bars
- Turning and Grooving Holders
- API Ring Groovers

Hendersonville, NC

KPTI North American HQ

- Indexable Insert Manufacturing
- North American Tech Center
- North American Sales, Marketing & Customer Service Center

KPTI Manufactured Products

Steel Toolholders for Milling, Turning, Grooving, Threading and Drilling Metal

Indexable metal cutting inserts made of carbide, ceramic, cermet, Cubic Boron Nitride, and Polycrystaline diamond

Solid carbide cutting tools for tight tolerance and micro-diameter metal cutting applications

KPTI Markets Served

Automotive

Aerospace

Medical

Printed Circuit Board

Power Generation

How to Order

Kyocera Precision Tools' products are sold exclusively through our North American line of authorized distributors.

Locate a Distributor

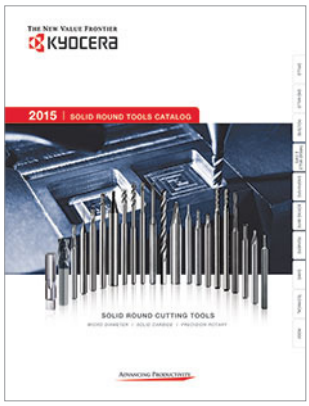
Use our ***Locate a Distributor*** map at:
www.KyoceraPrecisionTools.com/locate

OR

CUSTOMER SERVICE
1.800.823.7284
(OPTION 1)
Monday - Friday
5:00AM - 4:30PM (PST)
8:00AM - 7:30PM (EST)

Using the Kyocera Product Catalogs

All standard Kyocera Precision Tools Products are located in one of these four General Catalogs.



Stock Status Symbols

- ● Indicates that an item is **Stock Standard** and available at our North American Headquarters in North Carolina. Stock Standard items will ship the same day if ordered by 4:30pm (EST).
- ○ Indicates that an item is a World Express and available at our Worldwide Headquarters in Japan. Please allow 7-10 business days for World Express items to arrive.

*All Stock Standard and World Express items are subject to availability.

Authorized Distributor Ordering Guide

TO PLACE ORDERS ONLINE VISIT - http://mykpti.kyocera.com
In addition to placing orders, the MyKPTI distributor website allows you to view real-time product availability, check pricing, view and download product and promotional literature, watch product training videos, and more.

CUSTOMER SERVICE
1.800.823.7284
(OPTION 1)
Monday - Friday
5:00AM - 4:30PM (PST)
8:00AM - 7:30PM (EST)

TECHNICAL SUPPORT
1.800.823.7284
(OPTION 2)
Monday - Friday
4:00AM - 2:00PM (PST)
7:00AM - 5:00PM (EST)

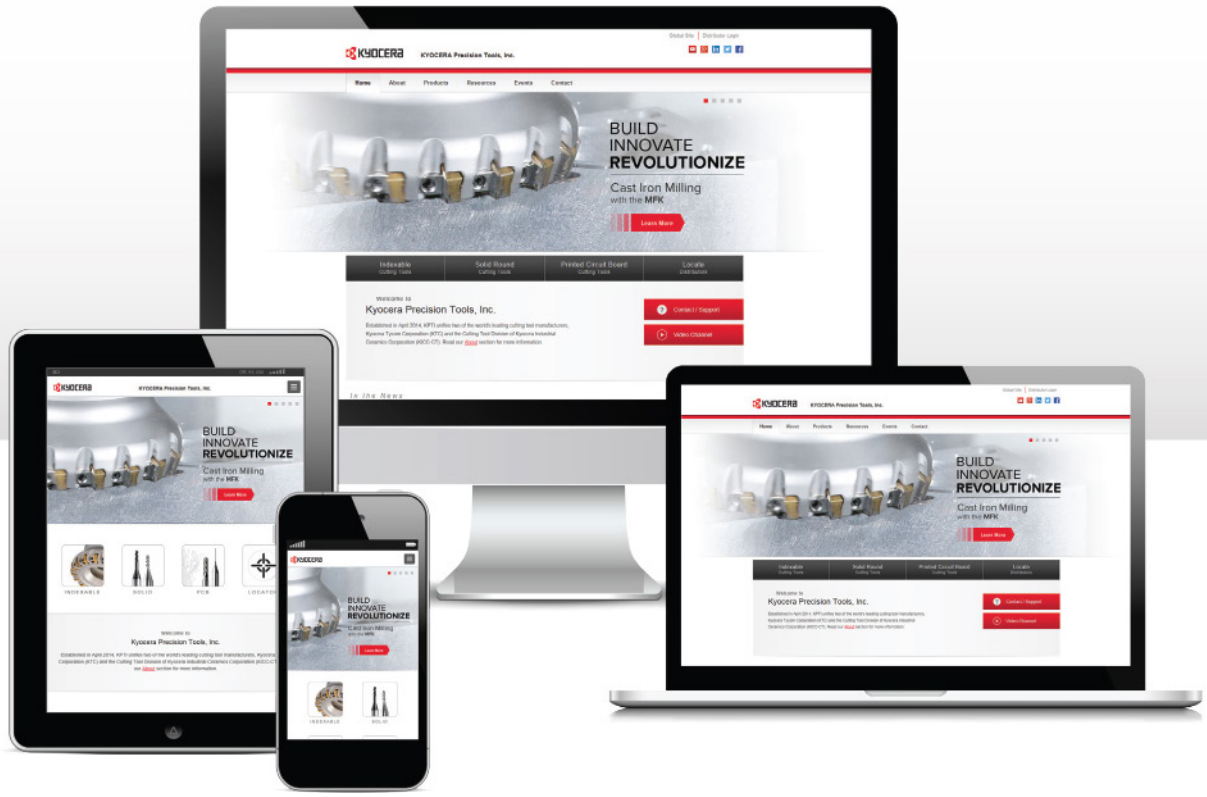
GENERAL INQUIRIES
cuttingtools@kyocera.com

CUSTOMER SERVICE
ctsales@kyocera.com

TECHNICAL CENTER
cttechs@kyocera.com

VISIT US ONLINE

WWW.KYOCERAPRECISIONTOOLS.COM



INTRODUCING

A NEW RESPONSIVE DESIGN

NEW

- *Easy to navigate, sliding mobile menus*
- *Find the information you need faster than ever*
- *Easier to read articles transformed on mobile devices*
- *Faster load times allow you to browse products without waiting*
- *Easy to see icons allow fast access to hundreds of tooling solutions*
- *Locate distributors in your area on-the-go through an updated distributor map*

INSERT GRADES

A1 - A17

TURNING

Workpiece Material		Steel (Carbon Steel / Alloy Steel)					Stainless Steel & Cast Steel					Cast Iron (Gray Cast Iron / Nodular Cast Iron)			
Cutting Range		Finishing ↔ Roughing					Finishing ↔ Roughing					Finishing ↔ Roughing			
Classification		P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30
Cermet	TN Series	TN6010, TN620, TN6020, TN60, TN90					TN6010, TN6020, TN60, TN90					TN60			
	MEGACOAT (PV Series)	PV7010, PV7025					PV7010, PV7025					PV7005			
	MEGACOAT NANO (PV Series)	PV720													
Coated Carbide	CA Series	CA510, CA515, CA525, CA530, CA5505, CA5515, CA5525, CA5535						CA6515, CA6525				CA4505, CA4515			
	PR Series	PR930, PR1005, PR1025, PR1115						PR930, PR1025, PR1125							
	MEGACOAT (PR Series)	PR1225							PR1225						
	MEGACOAT NANO (PR Series)	PR1425, PR1535						PR1425	PR1535						
Carbide													KW10		
CBN												KBN60M			

Workpiece Material		Non-Ferrous (Aluminum / Non-Ferrous Metals / Non-Metals)				Heat Resistant Alloys (Inconel / Titanium)				Hard Materials (Hardened Steel / Chilled Cast Iron)				Powdered Steel			
Cutting Range		Finishing ↔ Roughing				Finishing ↔ Roughing				Finishing ↔ Roughing				Finishing ↔ Roughing			
Classification		N01	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20	H30	01	10	20	30
Coated Carbide	CA Series						CA6515, CA6525										
	PR Series							PR1125							PR930		
	MEGACOAT (PR Series)					PR1305	PR1310	PR1325									
	MEGACOAT NANO (PR Series)							PR1535									
Cermet														TN6010, TN60			
CBN										KBN510, KBN525							
MEGACOAT										KBN05M, KBN10M, KBN25M, KBN30M, KBN35M					KBN65M, KBN70M		
Carbide			KW10			SW05	SW10	SW25									
PCD		KPD001, KPD010				KPD001, KPD010											

GROOVING / CUT-OFF / THREADING

Workpiece Material		Steel (Carbon Steel / Alloy Steel)					Stainless Steel & Cast Steel					Cast Iron (Gray Cast Iron / Nodular Cast Iron)			
Cutting Range		Finishing ⟷ Roughing					Finishing ⟷ Roughing					Finishing ⟷ Roughing			
Classification		P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30
Cermet	MEGACOAT (PV Series)	PV7040										PV7040			
	TN Series	TN6020					TN6020								
		TN90					TN90								
	TC Series	TC40N										TC40N			
			TC60M					TC60M							
Coated Carbide	CR Series		CR9025					CR9025							
	PR Series			PR660					PR660						
		PR915					PR915					PR905			
			PR930					PR930							
			PR1025					PR1025							
			PR1115					PR1115							
	MEGACOAT (PR Series)		PR1215					PR1215					PR1215		
			PR1225					PR1225							
	MEGACOAT NANO (PR Series)		PR1425					PR1425							
Carbide													KW10		
													GW15		

Workpiece Material		Non-Ferrous (Aluminum / Non-Ferrous Metals / Non-Metals)				Heat Resistant Alloys (Inconel / Titanium)				Hard Materials (Hardened Steel / Chilled Cast Iron)				Powdered Steel			
Cutting Range		Finishing ⟷ Roughing				Finishing ⟷ Roughing				Finishing ⟷ Roughing				Finishing ⟷ Roughing			
Classification		N01	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20	H30	01	10	20	30
Coated Carbide	PR Series														PR930		
	MEGACOAT (PR Series)							PR1535							PR1215		
															PR1225		
Carbide			KW10				KW10										
			GW15				GW15										
CBN										KBN510					KBN570		
										KBN525							
PCD		KPD001				KPD001											
		KPD010				KPD010											

DRILLING

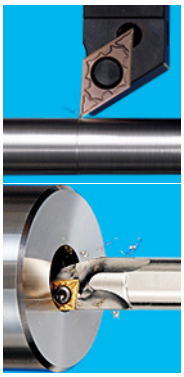
Workpiece Material	Steel (Carbon Steel / Alloy Steel)					Stainless Steel & HRA Nickel-based Alloys					Cast Iron (Gray Cast Iron / Nodular Cast Iron)			
Cutting Range	Finishing ↔ Roughing					Finishing ↔ Roughing					Finishing ↔ Roughing			
Classification	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30
Cermet – PR Series				PR660					PR660			PR905		
Cermet – MEGACOAT (PV Series)		PR1225						PR1225				PR1210		
		PR1230												
Carbide														

Workpiece Material	Non-Ferrous (Aluminum / Non-Ferrous Metals / Non-Metals)				Heat Resistant Alloys (Titanium / Titanium Alloys)				Hard Materials (Hardened Steel / Chilled Cast Iron)			
Cutting Range	Finishing ↔ Roughing				Finishing ↔ Roughing				Finishing ↔ Roughing			
Classification	N01	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20	H30
Coated Carbide – PR Series						PR905						
Coated Carbide – MEGACOAT (PR Series)							PR1210			PR1230		
Carbide		GW15				GW15						

MILLING

Workpiece Material	Steel (Carbon Steel / Alloy Steel)					Stainless Steel & Cast Steel					Cast Iron (Gray Cast Iron / Nodular Cast Iron)			
Cutting Range	Finishing ↔ Roughing					Finishing ↔ Roughing					Finishing ↔ Roughing			
Classification	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30
Cermet – TN Series		TN100M					TN100M							
Carbide – CA Series								CA6535						
Carbide – PR Series			PR830					PR830				PR905		
								PR1025						
Carbide – MEGACOAT (PR Series)		PR1225						PR1225				PR1210		
		PR1230												
Carbide – MEGACOAT NANO (PR Series)		PR1525						PR1525				PR1510		
Carbide														

Workpiece Material	Non-Ferrous (Aluminum / Non-Ferrous Metals / Non-Metals)				Heat Resistant Alloys (Ni-Base)				Heat Resistant Alloys (Titanium / Titanium Alloys)				Hard Materials (Hardened Steel / Chilled Cast Iron)			
Cutting Range	Finishing ↔ Roughing				Finishing ↔ Roughing				Finishing ↔ Roughing				Finishing ↔ Roughing			
Classification	N01	N10	N20	N30	S01	S10	S20	S30	S01	S10	S20	S30	H01	H10	H20	H30
CA Series						CA6535										
Coated Carbide – PR Series										PR905						
Coated Carbide – MEGACOAT (PR Series)										PR1210						
Coated Carbide – MEGACOAT NANO (PR Series)						PR1535				PR1535						
Carbide		KW10								KW10						
		GW25								GW25						
PCD	KPD001								KPD001							
	KPD230								KPD230							

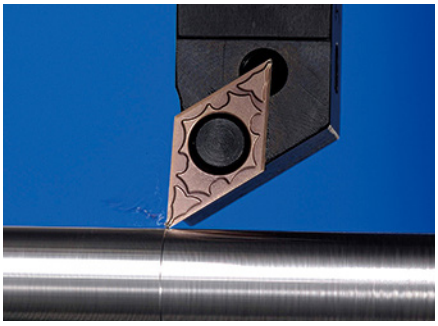
Applications		Cutting Range	P Steel	M Stainless Steel	K Cast Iron	N Non-ferrous Metals	S Heat-Resistant Alloys	S Titanium Alloys	H Hard Materials	Powdered Metal
Back Turning		Large Cutting Dia. Small	TC60M PR1005 PR1025 PR1225 PR1425 PR930	PR1025 PR1225 PR930	KW10	KPD001 KW10	PR1025 PR1225	KPD001 KW10	-	PR1425 PR930
External and Internal Turning		Large Cutting Dia. Small	TN6010 TN6020 TN60 PV7010 PV720 PV7025 CA5515 CA5525 PR1005 PR1025 PR1425 PR1225 PR930	TN620 TN60 PV720 PV7025 CA6515 CA6525 PR1025 PR1225 PR1125 PR930	KBN60M CA4505 CA4515 KW10	KPD001 KPD010 KW10	CA6515 CA6525 PR1125 PR1305 PR1310 PR1325	KPD001 KPD010 KW10 SW05 SW10 SW25	KBN05M KBN10M KBN25M KBN30M KBN35M	TN6010 TN60 KBN65M KBN70M PR930
Cut-Off		Depends on workpiece material	PR1025 PR1225	PR1025 PR1225	KW10	KW10	KW10 PR1025	KW10	-	-
Grooving		Glossy Finish Stable Cutting	TC40N TN90 PR930 CR9025 PR1115 PR1025 PR1215 PR1225	TC40N TN90 PR915 CR9025 PR1115 PR1025 PR1215 PR1225	PR905 PR1215 KW10 GW15	KPD001 KW10 GW15	PR915 KW10 PR1115 PR1225	KPD001 KW10	KBN510 KBN525	TC40N PR930
Threading		Glossy Finish Stable Cutting	TC60M PR930 PR1115 PR1425	TC60M PR930 PR1025 PR1115 PR1225	KW10 GW15	KW10 GW15	KW10 GW15 PR1115	KW10 GW15	-	PR1425 PR930
Drilling		Wear Resistance Toughness	PR1025 PR1225 PR1230 PR660	PR1025 PR1225 PR660	PR905 PR1210	KW10 GW15	PR1025 PR1225 PR660	KW10 GW15	-	-
Milling		Finishing Roughing	TN100M PR830 PR1225 PR1230 PR1525	CA6535 PR830 PR1225 PR1525 PR1535	PR1210 PR1510 KW10	KPD230 KPD001 KPD010 KW10 GW25	CA6535 PR830 PR660 PR1225 PR1525	KPD230 KPD001 KW10 PR905 PR1210 PR1535	-	-

Highlighted items are recommended choice

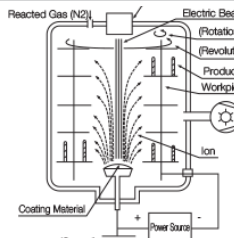
PVD COATED CARBIDE FOR TURNING

PVD COATED CARBIDE (MEGACOAT / MEGACOAT NANO)

KYOCERA's PVD coated carbides for milling and drilling utilize very tough carbide substrates. The low processing temperature, compared with CVD, leads to improved bending strength, less deterioration of the coating and superior tool life with stable machining.



PVD (Physical Vapor Deposition)



Features
① No Deterioration
② No Loss of Bending Strength
③ Excellent Chipping Resistance

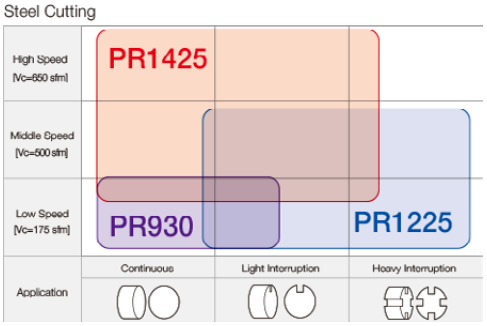
Processing Temperature: 400° ~ 600°C

FEATURES OF PVD COATED CARBIDE FOR TURNING

Material	Description	Color	Main Component (Coating Composition)	Advantages
P Steel	**PR915** (Super Micro-Grain)	Bluish Violet	TiAlN	· TiAlN base PVD coated super micro-grain carbide, superior wear and oxidation resistance · Application: Stable and reliable high precision cutting of steel
	PR930 (Super Micro-Grain)	Reddish Gray	TiCN	· Hard TiCN base PVD coated super micro-grain carbide · Application: Low cutting speed, precise cutting with sharp edge
	PR1005	Reddish Gray	TiCN	· TiCN base PVD coated hard micro-grain carbide · Application: Turning of free-cutting steel, long tool life achieved through anti-adhesion performance
	PR1025	Reddish Gray	TiCN	· TiCN base PVD coated micro-grain carbide · Application: General purpose cutting of steel and stainless steel, stable and long tool life
	PR1115	Purple Red	TiAlN	· Hard TiAlN base PVD coated super micro-grain carbide · Application: Superior anti-oxidation performance with well balanced wear resistance and toughness
	PR1215	Blackish Red	MEGACOAT	· Superior wear and oxidation-resistant MEGACOAT on micro-grain carbide substrate · Application: Superior adhesion-resistant and long tool life for steel and stainless steel cutting
	PR1425	Blackish Red	MEGACOAT NANO	· Nano thin multi-layer coating performs with superior wear resistance and high oxidation resistance. · Application: various applications of steel cutting, High speed stainless steel cutting, extended tool life
M Stainless Steel	**PR1125**	Purple Red	TiAlN	· Hard TiAlN base PVD coated super micro-grain carbide, superior toughness and heat resistance · Application: Finishing and light interrupted cutting of stainless steel
	PR1225	Blackish Red	MEGACOAT	· Superior wear and oxidation resistant MEGACOAT on micro grain carbide substrate · Application: Light interrupted to interrupted cutting of stainless steel
K Cast Iron	**PR905**	Bluish Violet	TiAlN	· Smooth fine surface PVD coated hard carbide with plastic deformation resistance · Application: Suitable for milling of gray and nodular cast iron
S Heat-Resistant Alloys	**PR1305**	Blackish Red	MEGACOAT	· MEGACOAT on hard and superior heat resistant carbide, superior wear resistance · Application: Finishing of heat-resistant alloys
	PR1310	Blackish Red	MEGACOAT	· MEGACOAT on hard and superior heat resistant carbide, superior wear and oxidation resistance · Application: First choice for continuous and light interrupted cutting and finishing of heat-resistant alloys
	PR1325	Blackish Red	MEGACOAT	· MEGACOAT on tough carbide · Application: Light interrupted cutting and roughing of heat-resistant alloys
	PR1535	Blackish Red	MEGACOAT NANO	· Stabilized turning operations and long tool life with MEGACOAT NANO coating technology · Application: PVD for titanium alloy and precipitation hardened stainless steel

Application Maps

Steel Cutting



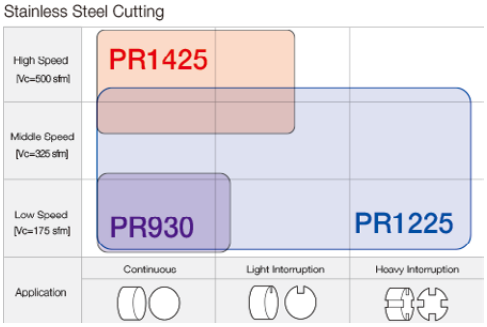
PR1425
1st choice grade

PR1225
High reliability in interrupted cutting

PR1225
Stable cutting at low to middle speed

PR930
Stable cutting at low speed

Stainless Steel Cutting



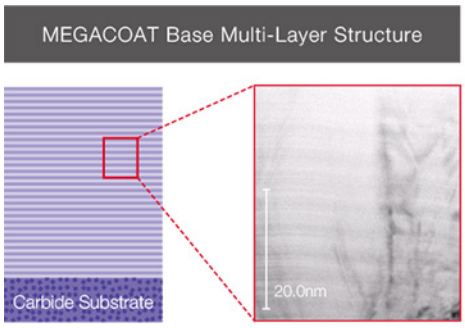
PR1225
1st choice grade

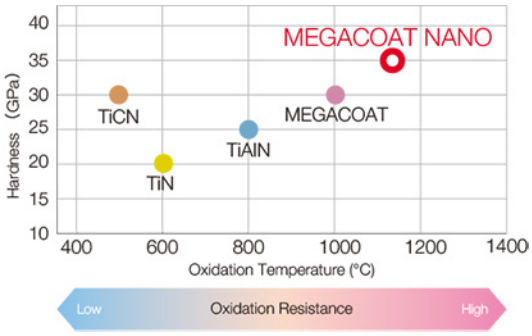
PR1425
Extended tool life in high speed cutting

PR930
Extended tool life in low speed cutting

800.823.7284
Visit us online at KyoceraPrecisionTools.com

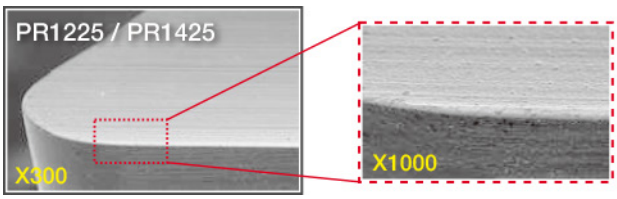
MEGACOAT NANO PR1425 (Grade Properties)



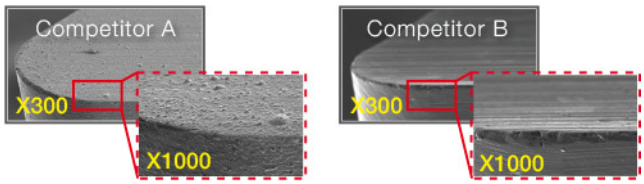


Prevents wear and fracture with high hardness (35GPa) and superior oxidation resistance (oxidation temperature: 1,150°C)

Cutting Edge Quality (Sharp Edge Insert)



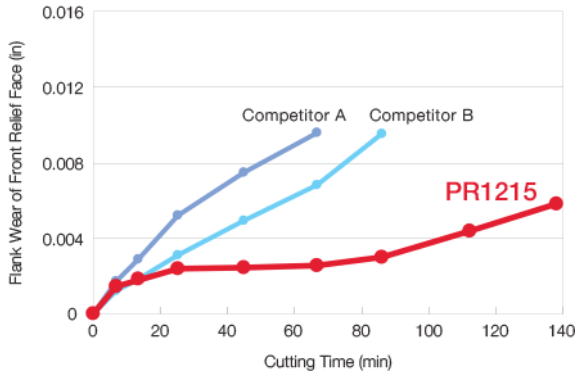
Superior edge-sharpening performance and smooth surface



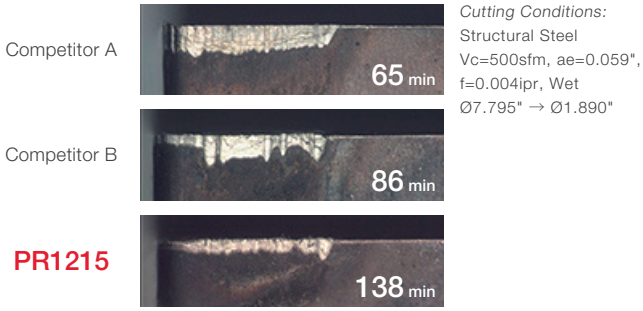
Delamination (coating peeling) and rough surface

MEGACOAT Series (PR1225/PR1425) - high edge sharpening performance and adhesion resistance.

PR1215 Wear Resistance Comparison
(Off-Centered Grooving)



Flank Wear of Front Relief Face



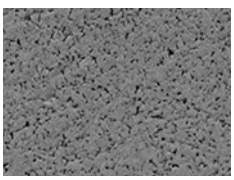
Cutting Conditions:
Structural Steel
Vc=500sfm, ae=0.059",
f=0.004ipr, Wet
Ø7.795" → Ø1.890"

PR13-Series Advantages

Superior wear and fracture resistance attained with uniform grain size and MEGACOAT on superior thermal shock resistant carbide

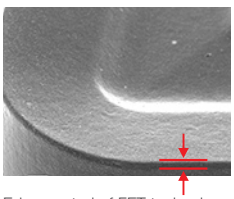
New edge preparation technology (FET: Fine Edge Treatment) controls and minimizes R horning and realizes large tip rake angle, and thus prevents burrs and notching. It provides good finished surface

Special Carbide Substrate



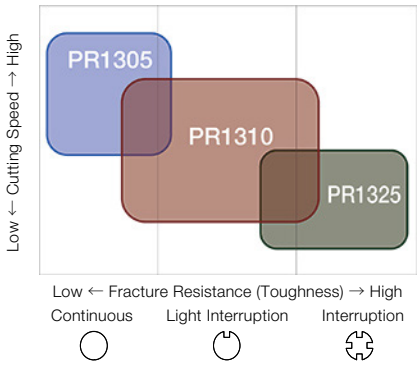
Uniform grain size enables superior thermal shock resistance and constant hardness

New Edge Preparation Technology

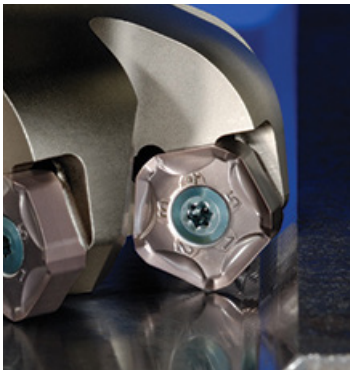


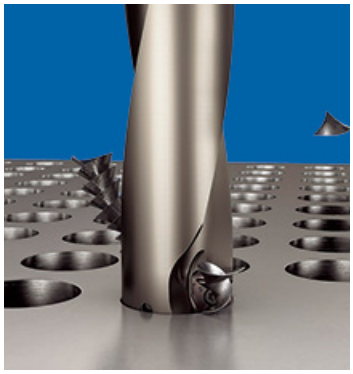
Edge control of FET technology (FET: Fine Edge Treatment)

Heat-Resistant Alloys (Ni-based)



PVD & CVD COATED CARBIDE FOR MILLING & DRILLING





MEGACOAT / MEGACOAT NANO

KYOCERA's PVD coated carbides for milling and drilling utilize very tough carbide substrates.

The low processing temperature, compared with CVD, leads to improved bending strength, less deterioration of the coating and superior tool life with stable machining.

FEATURES OF PVD COATED CARBIDE FOR MILLING & DRILLING

Material	*Description*	*Color*	*Main Component (Coating Composition)*	*Advantages*
P Steel	**PR830**	Gold	TiAlN+TiN	· Improved high temperature stability and wear resistance by TiAlN base PVD coating · Application: Stable and long tool life for milling of steel
	PR1230	Blackish Red	MEGACOAT	· Superior wear and oxidation resistant MEGACOAT on a special tough carbide substrate · Application: Stable and high feed rate milling and drilling of steel
	PR1525	Blackish Red	MEGACOAT NANO	· New coating technology [MEGACOAT NANO] is applied. Nano thin multi-layer coating performs superior wear resistance and high oxidation resistance. · Application: Stable and long tool life milling of Steel and Stainless Steel
M Stainless Steel	**PR1025**	Reddish Gray	TiCN	· TiCN base PVD coated on micro-grain carbide · Application: Stable and long tool life milling of stainless steel
	PR1225	Blackish Red	MEGACOAT	· Superior wear and oxidation-resistant MEGACOAT on micro-grain carbide substrate · Application: General and high feed drilling of steel and stainless steel
K Cast Iron	**PR1210**	Blackish Red	MEGACOAT	· Superior wear and oxidation resistant MEGACOAT on special carbide substrate for cast iron · Application: Highly efficient stable milling and drilling of gray and nodular cast iron and titanium alloys
	PR1510	Blackish Red	MEGACOAT NANO	· New coating technology [MEGACOAT NANO] is applied. Nano thin multi-layer coating performs superior wear resistance and high oxidation resistance. · Application: For gray and nodular cast iron, stable wear resistance and toughness
	CA420M	Blackish Red	MEGACOAT NANO	· New coating technology [MEGACOAT NANO] is applied. Nano thin multi-layer coating performs superior wear resistance and high oxidation resistance. · Application: For gray and nodular cast iron, stable wear resistance and toughness
S Heat-Resistant Alloys	**PR1535**	Blackish Red	MEGACOAT NANO	· Stabilized milling operation and long tool life with MEGACOAT NANO coating technology · Application: PVD for titanium alloy and precipitation hardened stainless steel
	CA6535	Gold	TiCN+Al_2O_3+TiN (CVD)	· High heat resistance and wear resistance with CVD coating with improved stability due to thin film coating · Application: CVD for Ni-base heat resistant alloy and martensitic stainless steel

2 New Grades for Extending Tool Life

when machining heat resistant alloys and difficult-to-cut materials

CA6535 (CVD) NEW

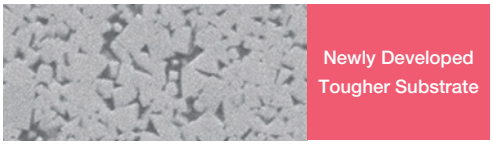
for Ni-base heat resistant alloy and martensitic stainless steel

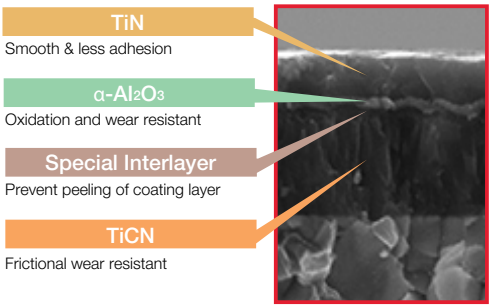
PR1535 (PVD) NEW

for titanium alloy and precipitation hardened stainless steel

New grades for difficult-to-cut material

- Stable cutting prevents insert fracturing
- Good for high efficiency machining





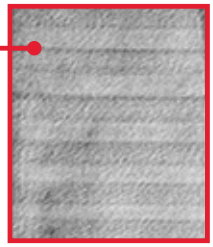
CA6535

Ni-base heat resistant alloy and martensitic stainless steel
ı heat resistance and wear resistance with CVD coating
roved stability due to thin film coating technology

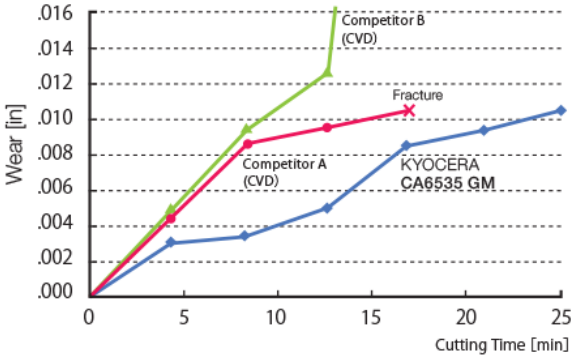
PR1535

titanium alloy and precipitation hardened stainless steel
ɔilized milling operation and long tool life with Kyocera's MEGACOAT NANO coating technology
roved stability due to thin film coating technology

MEGACOAT
Layer structure



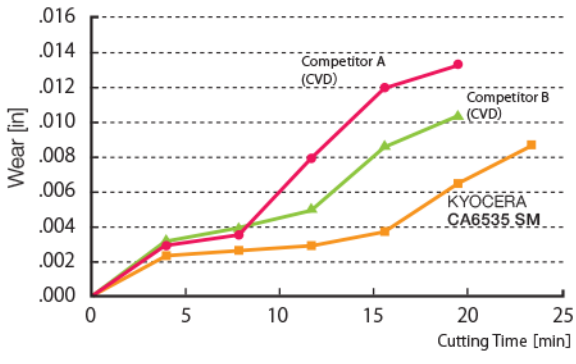
• Ni-base Heat Resistant Alloy



< Cutting Condition > Vc=175sfm, ap=0.039", fz=0.006ipt, WET

1st recommendation GM chipbreaker

• Martensitic Stainless Steel

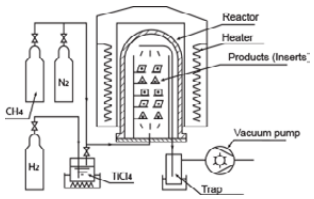


< Cutting Condition > Vc=975sfm, ap=0.079", fz=0.008ipt, WET

1st recommendation SM chipbreaker

CVD COATED CARBIDE

CVD (Chemical Vapor Deposition)



Features
① Equally deposited on face
② Easy application for multilayer deposition
③ Enabling thick coating

Processing Temperature: 900° ~ 1100°C

CVD COATED CARBIDE

KYOCERA's CVD coated carbide grades are based on ceramic thin film technology and provide stable, efficient cutting at high speeds or heavily interrupted applications.

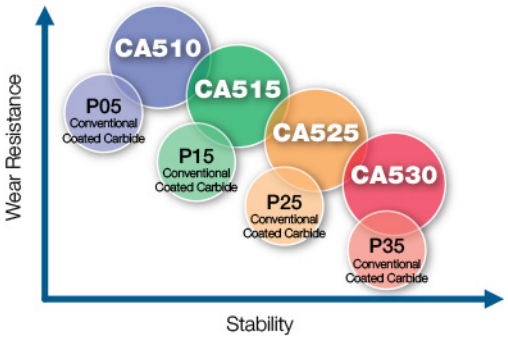
- Applicable from low to high speed cutting and from finishing to roughing
- Stable cutting is achieved due to the superior toughness and crack resistance
- Cutting times are reduced due to good chip control from effective chipbreakers

FEATURES OF CVD COATED CARBIDE

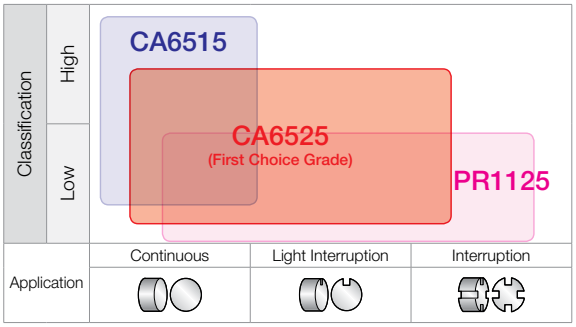
Material	*Description*	*Color*	*Main Component (Coating Composition)*	*Advantages*
P Steel	**CA510**	Gold	Micro Columnar TiCN+Al_2O_3+TiN	· Special substrate with thermal deformation resistance along with a thick and tough film coating for wear resistance · Application: High speed and high efficiency steel machining
	CA515	Gold	Micro Columnar TiCN+Al_2O_3+TiN	· Special substrate and tough coating film provides thermal deformation and high wear resistance · Application: Continuous to light interrupted steel machining (general use)
	CA525	Gold	Micro Columnar TiCN+Al_2O_3+TiN	· Special substrate and tough coating film provides high wear and fracture resistance · Application: 1st choice for steel machining
	CA530	Gold	Micro Columnar TiCN+Al_2O_3+TiN	· Special tough substrate and tough coating film provides high stability and wear resistance · Application: General to heavy interrupted machining (stability oriented)
	CA5505	Gold	Micro Columnar TiCN+Al_2O_3+TiN	· Improved wear resistance due to hard carbide substrate and micro columnar structure of coated composition · Application: High speed continuous cutting of steel, continuous to light interrupted cutting of cast iron
	CA5515	Gold	Micro Columnar TiCN+Al_2O_3+TiN	· Improved wear resistance and longer tool life due to micro columnar structure of coated composition · Application: High speed cutting of steel, continuous to light interruption
	CA5525	Gold	Micro Columnar TiCN+Al_2O_3+TiN	· Improved toughness and wear resistance due to tougher carbide substrate and micro columnar structure of coated composition · Application: First choice for general cutting of steel, roughing to interruption
	CA5535	Gold	Micro Columnar TiCN+Al_2O_3+TiN	· Improved toughness due to tougher carbide substrate · Application: Roughing to heavy interrupted cutting of steel
	CR9025	Gold	Columnar TiCN+TiN	· Improved toughness and stability due to specialized carbide substrate with plastic deformation resistance · Application: Cut-off, grooving and multi-function cutting of steel
M Stainless Steel	**CA6515**	Gold	Micro Columnar TiCN+Al_2O_3+TiN	· Specialized carbide substrate for stainless steel cutting, excellent wear resistance · Application: Continuous to light interrupted cutting of stainless steel
	CA6525	Gold	Micro Columnar TiCN+Al_2O_3+TiN	· Specialized carbide substrate for stainless steel cutting, excellent notching resistance and toughness · Application: First choice for general cutting of stainless steel, from finishing to roughing, continuous to interruption
K Cast Iron	**CA4010**	Gold	Columnar TiCN+Al_2O_3+TiN	· Excellent high temperature stability due to plastic deformation and oxidation wear resistance · Application: Continuous to light interrupted high speed cutting of cast iron
	CA4115	Gold	Micro Columnar TiCN+Al_2O_3+TiN	· Improved wear resistance due to micro columnar structure of coated composition · Application: Nodular cast iron cutting, continuous to light interruption
	CA4120	Gold	Micro Columnar TiCN+Al_2O_3+TiN	· Improved toughness and wear resistance due to tougher carbide substrate and micro columnar structure of coated composition · Application: Roughing to heavy interrupted cutting of nodular cast iron
	CA4505	Blackish gray	Micro Columnar TiCN+Al_2O_3	· Stable, long tool life due to improved bounding force of coated layers and special treatment on the surface of top coated layer · Application: For gray cast iron and nodular cast iron at high speed in continuous to light interrupted cutting
	CA4515	Blackish gray	Micro Columnar TiCN+Al_2O_3	· Stable, long tool life due to improved bounding force of coated layers and special treatment on the surface of top coated layer · Application: First choice for gray cast iron and nodular cast iron in light to heavy interrupted cutting

Application Map

Steel



Stainless Steel



KYOCERA

CA5-Series NEW

CVD COATED CARBIDE GRADE FOR STEEL

New Innovations in Steel Machining

with **CA5** Series **Grades** &
P Series **Chipbreakers**

CA510

Special substrate with thermal deformation resistance along with a thick and tough film coating for wear resistance

Application: High speed and high efficiency steel machining

CA515

Special substrate and tough coating film provides thermal deformation and high wear resistance

Application: Continuous to light interrupted steel machining (general use)

CA525

Special substrate and tough coating film provides high wear and fracture resistance

Application: 1st Choice for steel machining

CA530

Special tough substrate and tough coating film provides high stability and wear resistance

Application: General to heavy interrupted machining (stability oriented)

High Adhesion Strength Coating Layer with Ultra Fine Interface

Long tool life and stable machining with **40%** improved adhesion strength!

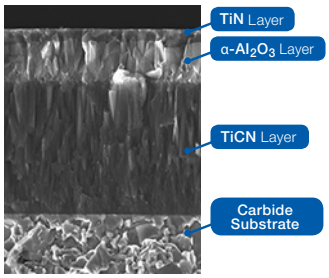
Smooth and Flat Surface Reduces Cutting Forces

Sharp cutting and stable machining with a smooth, flat surface preventing sudden breakage caused by material welding onto the cutting edge

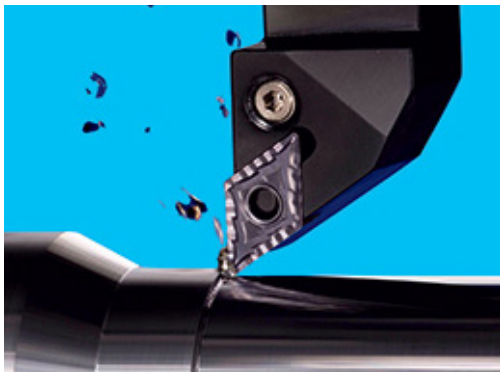
Innovative Coating Layers Produce Superior Hardness and Toughness

Special crystal control technology

Long tool life with the high aspect ratio of α-Al_2O_3 layer



CERMET



CERMET

KYOCERA is known as the leading manufacturer of cermets. Cermet is a composite material combining Ceramic and Metal. Typical materials used in cermets are TiC, TiN, TiCN and NbC. Designed to provide long tool life and excellent surface finishes, cermets combine toughness with superior wear resistance.

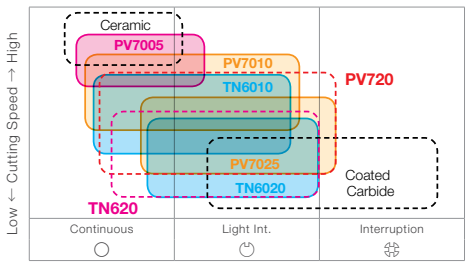
PVD COATED CERMET

PVD Coated Cermet is coated on cermet substrate with a thin layer of high wear resistance and high adhesion resistance by PVD (Physical Vapor Deposition) technology. Generally because of the low processing temperature of PVD compared with CVD, PVD Coated Cermet features less deterioration and more bending strength.

FEATURES OF CERMET & PVD COATED CERMET

Material		Description	Color	Main Component (Coating Composition)	Advantages
P Steel	Cermet	**TN620**	Gray	TiCN	· Inner structure has high toughness and chipping resistance along with thermal shock resistance. · Application: Recommended cermet for stable steel machining and high quality surface finish
		TN6010 (Super Micro-Grain)	Gray	TiCN	· Improved surface cermet with superior wear resistance and toughness · Application: Economical uncoated cermet for steel
		TN60	Gray	TiCN+NbC	· Typical choice cermet with superior wear resistance and toughness · Application: Cutting of steel and stainless steel
		TN6020 (Super Micro-Grain)	Gray	TiCN	· Super micro-grain cermet with superior wear resistance and toughness · Application: First choice cermet for steel and stainless steel cutting
		TN100M	Gray	TiCN+NbC	· Tough cermet with improved oxidation resistance and thermal shock resistance · Application: Milling of steel at high speed
		TC40	Gray	TiC+TiN	· Good balance of wear resistance and toughness · Application: Grooving and threading of steel
	PVD	**PV720**	Blackish Red	TiCN (MEGACOAT NANO)	· MEGACOAT NANO efficient machining with high quality surface finishes and superior wear and adhesion resistance. · Application: Recommended cermet for stable steel machining and high quality surface finish
		PV7010 (Super Micro-Grain)	Blackish Red	TiCN (MEGACOAT)	· Heat-resistant MEGACOAT on improved surface cermet with excellent wear resistance and toughness · Application: Stable and improved tool life in steel cutting, excellent surface finish
		PV7025 (Super Micro-Grain)	Blackish Red	TiCN (MEGACOAT)	· MEGACOAT on the super micro-grain cermet · Application: High strength and long life given by MEGACOAT.
		PV7040	Blackish Red	TiC+TiN (MEGACOAT)	· MEGACOAT on the super micro-grain cermet · Application: High strength and long life given by MEGACOAT.
K Cast Iron		**PV7005**	Blackish Red	TiC+TiN (MEGACOAT)	· Heat-resistant MEGACOAT on cermet with excellent wear resistance · Application: High speed finishing of gray and nodular cast iron

Application Map



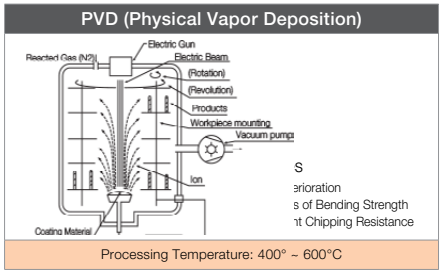
PV-Series (MEGACOAT / MEGACOAT NANO)

PV720: MEGACOAT NANO for Steel
PV7010: MEGACOAT for Steel

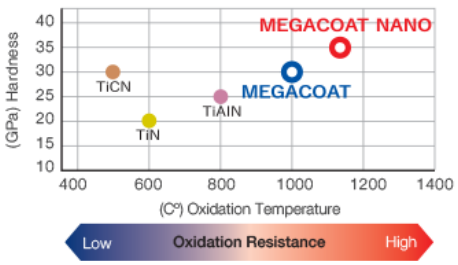
TN-Series (Uncoated Cermet)

TN620: Uncoated Cermet for Steel
TN6010: Uncoated Cermet for Steel

PVD (Coating)



PVD (Properties)

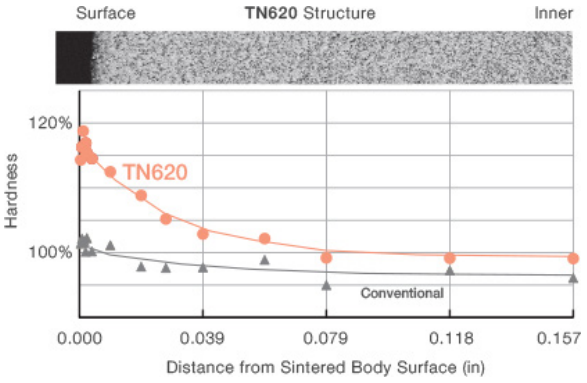


TN620 (CERMET) NEW
for steel machining

PV720 (MEGACOAT NANO CERMET) NEW
for steel machining

SURFACE HARDENED *"HYBRID STRUCTURE"*

Surface-Hardened Hybrid Structure



Surface Structure
(High Hardness Cermet)
- High wear resistance

Inner Structure
(High Toughness Cermet)
- Chipping and thermal shock resistance

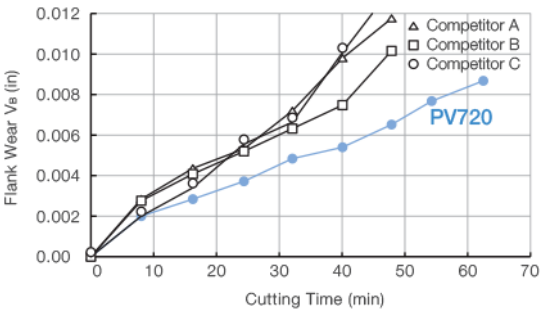
(Internal Evaluation)

TN620's inner structure has high toughness and chipping resistance along with thermal shock resistance. TN620 has a higher hardness and greater wear resistance than that of the conventional micro grain cermet.

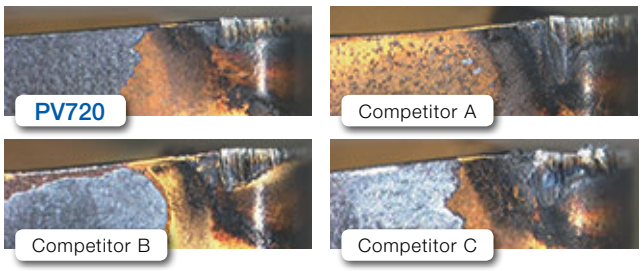
EASY TO VIEW CUTTING EDGE WEAR

PV720 improves performance by adopting composite lamination of MEGACOAT NANO and special TiN to combine high adhesion resistance and great visibility of the used cutting edge even in dim light.

Wear Resistance Comparison



Cutting Conditions
Workpiece : 4137 Steel
Vc = 820sfm
D.O.C. = 0.039"
f = 0.008ipr : Wet
Insert: CNMG432PQ



Flank wear condition after machining 48 minutes.

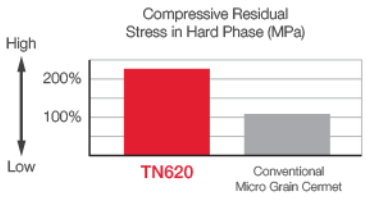
(Internal Evaluation)

EASY TO VIEW CUTTING EDGE WEAR

Improved strength with uniform micro grain hard phase and superior compressive stress with high melting point bonded phase. This combination yields greater fracture resistance.

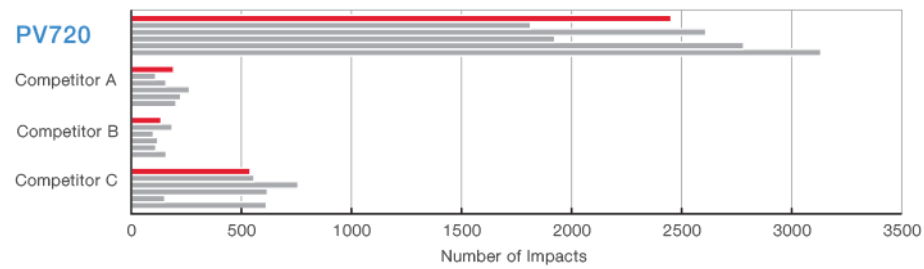
TN620 Structure

Surface Structure *Inner Structure*



(Internal Evaluation)

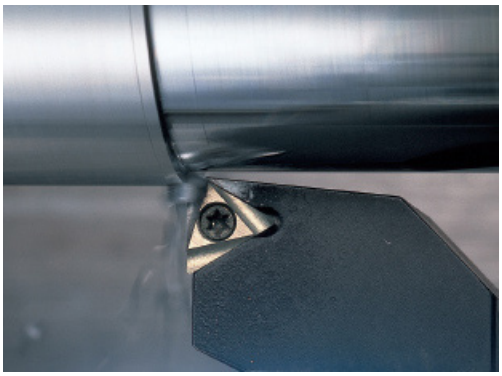
Fracture Resistance Comparison



Cutting Conditions
Workpiece : 1045 Structural Steel
Vc = 820sfm
D.O.C. = 0.039"
f = 0.008ipr : Wet
Insert: CNMG432PQ

(Internal Evaluation)

CARBIDE



CARBIDE

Due to its superior mechanical features carbide is used in a variety of applications. KYOCERA produces a variety of carbides, including KW10 for non-ferrous materials and micro-grain carbides for precision cutting.

FEATURES

- Tough and hard
- Good thermal conductivity
- Suitable for cutting non-ferrous metals and non-metals
- Stable cutting at low cutting speeds, including milling operations

FEATURES OF CARBIDE

Material	*Description*	*Color*	*Main Component (Coating Composition)*	*Advantages*
P Steel	**PW30**	Gray	WC+Co+TiC+TaC	· ISO identification symbol P carbide (K10 relevant) · Application: Milling of steel, stable wear resistance and toughness
N Non-Ferrous Materials	**KW10**	Gray	WC+Co	· ISO identification symbol K carbide (K10 relevant) · Application: Stable cutting of cast iron, non-ferrous materials, non-metals, and titanium alloys
	GW15	Gray	WC+Co	· ISO identification symbol K carbide (equivalent to K10), tough micro-grain carbide · Application: High wear resistance and toughness for non-ferrous materials, and non-metals, and titanium alloys
	GW25	Gray	WC+Co	· ISO identification symbol K carbide (K30 relevant) · Application: Stable wear resistance and anti-chipping performance for milling operations of aluminum
S Heat-Resistant Alloys	**SW05**	Gray	WC+Co	· ISO identification symbol K carbide (K05 relevant) · Application: Continuous cutting and finishing of titanium alloys maintaining superior wear resistance
	SW10 (Made to order)	Gray	WC+Co	· ISO identification symbol K carbide (K10 relevant) · Application: Continuous and light interrupted cutting of titanium alloys maintaining superior wear resistance and stable result
	SW25 (Made to order)	Gray	WC+Co	· ISO identification symbol K carbide (K25 relevant) · Application: Interrupted and light interrupted cutting of titanium alloys maintaining stable result

SW Series Cutting Performance Evaluation

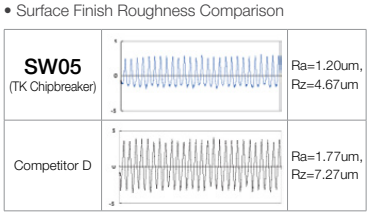
High Wear Resistance

In-house Cutting Test (Ti-6Al-4V)

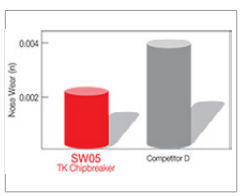
<Cutting Conditions>
Vc=200sfm, D.O.C.=0.020",f=0.006ipr, wet
Ti-6Al-4V
Continuous (External)
CNMG432

Workpiece Surface Roughness and
Insert Wear after cutting for 153 minutes

• Surface Finish Roughness Comparison



• Insert Wear

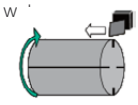


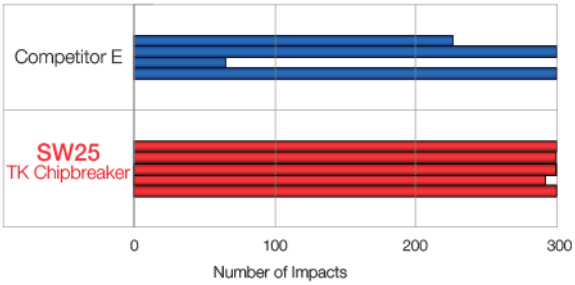
Internal Evaluation

Improved Fracture Resistance

In-house Cutting Test (Ti-6Al-4V)

<Cutting Conditions>
Vc=200sfm, D.O.C.=0.020", f=0.012ipr, w
Ti-6Al-4V(4 grooves)
Interrupted (External),
CNMG432





Internal Evaluation

CBN

CBN

KYOCERA CBN is second only to diamond in hardness. CBN (Cubic Boron Nitride) is a synthetically produced material with high thermal conductivity which provides stable cutting.

FEATURES

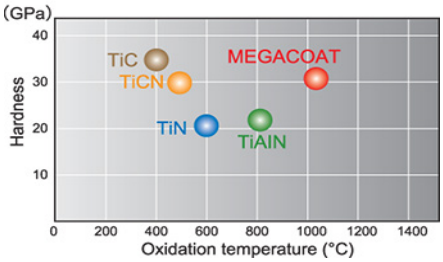
- Superior wear resistance when cutting hardened materials
- Suitable for high speed cutting of cast iron and sintered steel
- High thermal conductivity provides stable cutting

FEATURES OF CBN

Material	Description	Color	Av. Grain Size (μm)	CBN Content Rate (%)	Hardness of Substrate (GPa)	Transverse Strength (MPa)	Advantages
H Hardened Materials	**KBN510**	Black	2	50	28	1,000	· Excellent wear resistance and crack resistance, non-coated CBN · Application: Finishing and continuous cutting of hardened die steel
	KBN525	Black	1 and Under	45	25	1,250	· Good balance of toughness and wear resistance, non-coated CBN · Application: General grade for hardened steel, high stability at high speed and high feed cutting
	KBN05M (MEGACOAT)	Blackish Red	0.5-1.5	55	27	1,000	· Heat-resistant MEGACOAT on highly heat-resistant CBN substrate · Application: High speed finishing of hardened steel
	KBN10M (MEGACOAT)	Blackish Red	2	50	28	1,000	· Heat-resistant MEGACOAT on CBN with hard binder phase, superior anti-crater wear resistance · Application: High speed finishing of hardened die steel
	KBN25M (MEGACOAT)	Blackish Red	1 and Under	45	25	1,250	· Heat-resistant MEGACOAT on micro-grain CBN with heat resistant binder phase · Application: Stable cutting of hardened steel at high speed
	KBN30M (MEGACOAT)	Blackish Red	1-4	65	30	1,350	· Heat-resistant MEGACOAT on tougher CBN · Application: Stable cutting of hardened steel for continuous to interrupted cutting
Sintered Steel	**KBN65B**	Black	2	85	32	1,150	· Excellent wear resistance due to CBN with heat-resistant binder phase, non-coated CBN · Application: Stable cutting of sintered steel (ferrous sintered alloy) at low speed
	KBN65M (MEGACOAT)	Blackish Red	2	85	32	1,150	· Heat-resistant MEGACOAT on CBN with heat-resistant binder phase · Application: Stable cutting of sintered steel (ferrous sintered alloy) at low speed
	KBN70M (MEGACOAT)	Blackish Red	2-4	90	34	1,350	· Heat-resistant MEGACOAT on CBN rich substrate · Application: General cutting of sintered steel (ferrous sintered alloy) at high speed
K Cast Iron	**KBN60M** (MEGACOAT)	Blackish Red	0.5-6	80	33	1,250	· Heat-resistant MEGACOAT on CBN rich substrate with hard binder phase · Application: High speed finishing of gray cast iron
	KBN900 (TiN COAT)	Gold	9	90	31	1,050	· TiN coated solid CBN · Application: Heavy duty, interrupted cutting and finishing of hardened steel, hardened roll steel and cast iron

MEGACOAT CBN

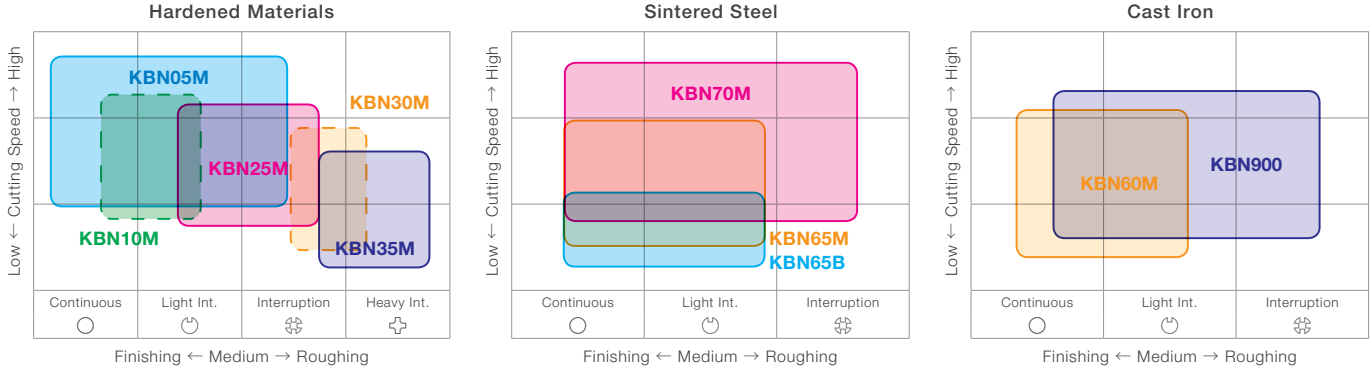
Properties of PVD Coated Layer



Advantages of MEGACOAT

- Long tool life and stable cutting due to superior heat-resistance and hardness
- Improvement of crater wear (oxidation, diffusional wear) resistance
- High thermal stability and surface smoothness provde excellent surface finish

Application Map



PCD

PCD

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

FEATURES

- Applicable for non-ferrous metals, non-metals turning, milling and other various type of cutting
- Long tool life due to extreme hardness
- Capable of high cutting speeds which increases cutting productivity
- Reduced edge build-up allows for high precision cutting
- Diversified applications for cutting of non-ferrous materials and non-metals
- Finished surface will be rainbow colored.
  (a mirror-like finished surface will not be obtained when single crystal diamond is used.)

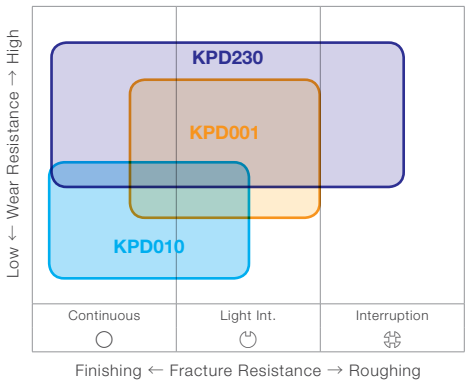
FEATURES OF PCD

Material	Description	Av. Grain Size (μm)	Advantages
N Non-Ferrous Materials	KPD001	0.5	· Super Micro-Grain PCD features cutting edge strength, wear resistance, fracture resistance, good edge-sharpening performance and long, stable tool life. · Application: High speed cutting of aluminum alloys, brass, non-ferrous metals and non-metals including plastics, fiberglass, carbide and ceramics.
	KPD010	10	· Good wear resistance and toughness, good grindability · Application: General purpose, high speed cutting of aluminum alloys, non-ferrous metals and non-metals including plastics, fiberglass, carbide and ceramics.
	KPD230	2-30	· Superior abrasive wear resistance and toughness due to high density PCD with mixed rough and fine grains · Application: High speed milling of aluminum alloys, non-ferrous metals, plastics and fiberglass

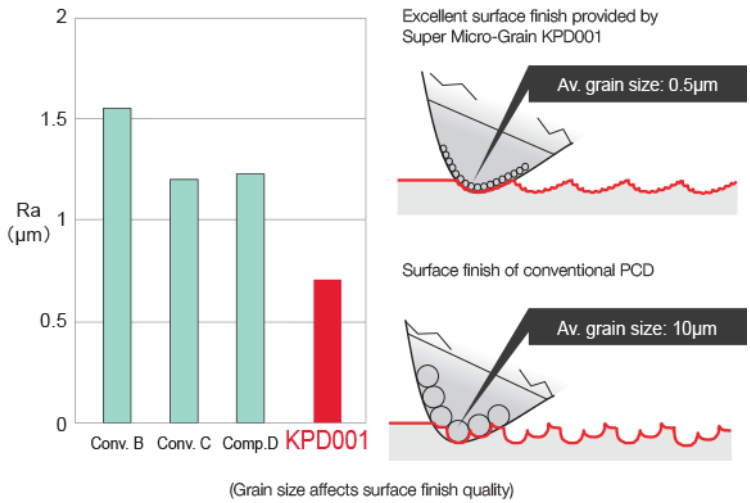
Applications

Workpiece Material		Non-ferrous materials (Aluminum / Non-ferrous metals / Non-metals)				Titanium / Titanium alloys			
Cutting Range		Finishing ← → Roughing				Finishing ← → Roughing			
Classification		N01	N10	N20	N30	S01	S10	S20	S30
Turning Milling	PCD	KPD001 KPD010 KPD230				KPD001 KPD010 KPD230			

Application Map



Surface Finish Roughness Comparison of Aluminum Cutting



(Grain size affects surface finish quality)

Grade Name	Color	Main Component	Coating Layer	Density	Hardness of Substrate (HV)	Hardness of Substrate (GPa)	Fracture Toughness ($MPam^{1/2}$)	Flexural Toughness (MPa)
Cermet								
TN620	Gray	TiCN	-	6.9	1,550	15.2	9.0	2,500
TN6010	Gray	TiCN	-	6.5	1,700	16.7	7.0	2,000
TN6020	Gray	TiCN	-	6.4	1,500	14.7	10.0	2,500
TN60	Gray	TiCN+NbC	-	6.6	1,600	15.7	9.0	1,760
TN90	Gray	TiCN+NbC	-	6.4	1,450	14.2	10.0	1,960
TN100M	Gray	TiCN+NbC	-	6.7	1,520	14.9	10.5	1,860
TC40	Gray	TiC+TiN	-	6.0	1,650	16.2	9.0	1,570
TC60	Gray	NbC	-	8.1	1,500	14.7	10.5	1,670
PVD Coated Cermet								
PV720	Gold	MEGACOAT NANO	Thin coating	6.9	1,550	15.2	9.0	2,500
PV7005	Blackish red	MEGACOAT	Thin coating	6.0	1,650	16.2	8.5	1,470
PV7010	Blackish red	MEGACOAT	Thin coating	6.5	1,700	16.7	7.0	2,000
PV7025	Blackish red	MEGACOAT	Thin coating	6.4	1,500	14.7	10.0	2,500
PV7040	Blackish red	MEGACOAT	Thin coating	6.0	1,650	16.2	9.0	1,570
PV60	Gold	TiN	Thin coating	6.6	1,600	15.7	9.0	1,760
PV90	Gold	TiN	Thin coating	6.4	1,450	14.2	10.0	1,960
CVD Coated Carbide								
CA420M	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thick Coating	14.5	1,600	15.8	13.0	3,400
CA4010	Gold	Columnar TiCN+Al_2O_3+TiN	Thick coating	14.8	1,670	16.4	10.0	3,000
CA4115	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thick coating	14.7	1,550	15.2	12.0	2,750
CA4120	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thick coating	14.7	1,550	15.2	12.0	2,750
CA4505	Blackish gray	Micro columnar TiCN+Al_2O_3	Thick coating	14.9	1,780	17.4	9.5	2,350
CA4515	Blackish gray	Micro columnar TiCN+Al_2O_3	Thick coating	14.9	1,570	15.4	12.0	2,780
CA510	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thick coating	14.5	1,470	14.4	11.5	2,500
CA515	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thick coating	14.4	1,440	14.1	12.5	2,650
CA525	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thick coating	14.2	1,360	13.3	13.5	2,750
CA530	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thick coating	13.9	1,340	13.1	14.5	2,850
CA5505	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thick coating	14.7	1,730	17.0	10.0	2,540
CA5515	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thick coating	14.7	1,550	15.2	12.0	2,750
CA5525	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thick coating	14.5	1,400	13.7	12.0	2,780
CA5535	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thick coating	14.1	1,340	13.1	16.5	2,970
CA6515	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thin coating	14.7	1,530	15.0	12.0	2,780
CA6525	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thin coating	14.7	1,370	13.4	16.0	3,100
CA6535	Gold	Micro columnar TiCN+Al_2O_3+TiN	Thin coating	14.3	1,320	12.9	16.0	3,700
CR9025	Gold	Columnar TiCN+TiN	Thick coating	14.5	1,400	13.7	12.0	2,780
PVD Coated Carbide								
PR630	Gold	TiN	Thin coating	12.5	1,500	14.7	11.0	2,160
PR660	Gold	TiN	Thin coating	13.7	1,450	14.2	12.0	2,250
PR730	Gold	TiAlN+TiN	Thin coating	13.7	1,450	14.2	12.0	2,250
PR830	Gold	TiAlN+TiN	Thin coating	13.7	1,450	14.2	12.0	2,250
PR905	Bluish violet	TiAlN	Thin coating	14.8	1,670	16.4	10.0	3,000
PR915	Bluish violet	TiAlN	Thin coating	14.1	1,700	16.7	11.0	4,140
PR930	Reddish gray	TiCN	Thin coating	14.1	1,700	16.7	11.0	4,140
PR1005	Reddish gray	TiCN	Thin coating	14.9	1,800	17.6	10.0	3,300
PR1025	Reddish gray	TiCN	Thin coating	14.5	1,600	15.8	13.0	3,400
PR1115	Purple red	TiAlN	Thin coating	14.7	1,700	16.7	11.0	3,000
PR1125	Purple red	TiAlN	Thin coating	14.5	1,600	15.8	13.0	3,400
PR1210	Blackish red	MEGACOAT	Thin coating	14.8	1,670	16.4	10.0	3,000
PR1215	Blackish red	MEGACOAT	Thin coating	14.7	1,700	16.7	11.0	3,000
PR1225	Blackish red	MEGACOAT	Thin coating	14.5	1,600	15.8	13.0	3,400
PR1230	Blackish red	MEGACOAT	Thin coating	13.7	1,450	14.2	12.0	2,250
PR1305	Blackish red	MEGACOAT	Thin coating	15.0	1,790	17.5	9.5	2,350
PR1310	Blackish red	MEGACOAT	Thin coating	14.8	1,670	16.4	10.0	3,000
PR1325	Blackish red	MEGACOAT	Thin coating	14.7	1,370	13.4	16.0	3,100
PR1425	Blackish red	MEGACOAT	Thin coating	14.5	1,600	15.8	13.0	3,400
PR1510	Blackish red	MEGACOAT	Thin coating	14.8	1,720	16.8	9.0	2,450
PR1525	Blackish red	MEGACOAT	Thin coating	14.5	1,600	15.8	13.0	3,400
Carbide								
PW30	Gray	WC+Co+TiC+TaC	-	12.5	1,500	14.7	12.0	2,160
KW10	Gray	WC+Co	-	15.0	1,650	16.2	10.0	1,470
GW15	Gray	WC+Co	-	14.7	1,700	16.7	11.0	3,000
GW25	Gray	WC+Co	-	14.5	1,600	15.8	13.0	3,400
SW05	Gray	WC+Co	-	15.0	1,790	17.5	9.5	2,350
SW10	Gray	WC+Co	-	14.8	1,670	16.4	10.0	3,000
SW25	Gray	WC+Co	-	14.7	1,370	13.4	16.0	3,100

TURNING INSERTS

B

B1 - B42

Symbol	Insert
T	Triangle
C	80° Rhombic
D	55° Rhombic
J	70° Rhombic
V	35° Rhombic
W	80° Trigon

Shown angle stands for acute angle for rhombic and parallelogram inserts.

① Shape Symbol

Symbol	Relief Angle
B	5°
C	7°
N	0°
P	11°

② Relief Angle Symbol

Symbol (Class)	Tolerance					
	Corner Height		Thickness		I.C. Size	
	ANSI (±inch)	ISO (±mm)	ANSI (±inch)	ISO (±mm)	ANSI (±inch)	ISO (±mm)
E	0.0010	0.025	0.0010	0.025	0.0010	0.025
G			0.0005	0.130		
K※	0.0005	0.013	0.0010	0.025	0.002~0.006	0.05~0.15
M※	0.003~0.007	0.080~0.180	0.0005	0.130		

※ Insert's periphery is as fired.
Tolerance difference depends on size and shape of insert

③ Tolerance Symbol

Symbol	Hole	Hole Shape	Chipbreaker	Insert
A	Yes	With Hole	No	
M			One Side	
G			Two Sides	
W		With Hole and One Countersink 40°~60° One Side	No	
T			One Side	
U		With Hole and One Countersink 40°~60° Two Sides	Two Sides	
B		With Hole and One Countersink 70°~90° One Side	No	
H			One Side	

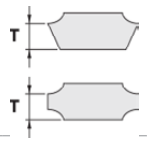
④ Hole / Chipbreaker Symbol

	①	②	③	④	⑤	⑥	⑦	⑧
ISO (metric)	C	C	M	T	06	02	02	GK
ANSI (inch)	C	C	M	T	2	15	05	GK

⑤ Edge Length Symbol (ISO)					I.C. Size (mm)	I.C. Size (ANSI)	
C	D	T	V	W		I.C. Size (inch)	Symbol
03	04	06			3.97	5/32	12
04	05	08	08		4.76	3/16	15
05	06	09		03	5.56	7/32	18
06	07	11	11	04	6.35	1/4	2
08	09	13		05	7.94	5/16	25
09	11	16	16	06	9.525	3/8	3
12	15	22	22	08	12.7	1/2	4

• Expressed as edge length for ISO.
• ANSI expresses the inscribed circle diameter in inches.

⑥ Thickness Symbol			
ISO		ANSI	
Thickness (mm)	Symbol	Thickness (inch)	Symbol
1.59	01	1/16	1
1.98	T1	5/64	1.2
2.38	02	3/32	1.5
2.78	T2	-	-
3.18	03	1/8	2
3.97	T3	5/32	2.5
4.76	04	3/16	3



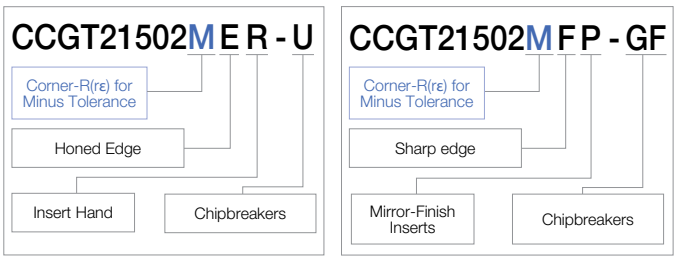
Thickness displayed as the distance between bottom surface and highest point on cutting edge.

⑦ Corner-R(rε) Symbol			
ISO		ANSI	
Corner-R(rε) (mm)	Symbol	Corner-R(rε) (inch)	Symbol
Sharp Corner	00	0.000	00
0.03	003	0.001	0.1
0.05	005	0.002	0.13
0.1	01	0.004	0.2
0.2	02	0.008	0.5
0.4	04	1/64	1
0.8	08	1/32	2
1.2	12	3/64	3

⑧ Manufacturer's Option
Hand Symbol, Chipbreaker, Symbol, Etc

● Positive Insert Identification System

(e.g. of (8) Manufacturer's Option)



● When a minus tolerance is specified for the corner-R(rε)

• If a minus tolerance is specified for the corner-R(rε) as shown in the Fig.1, using an insert with corner-R(rε) = 0.008" may result in larger radius than specified.

• Use an insert the corner of which R(rε) has a minus tolerance.

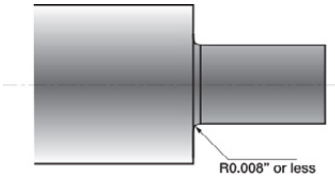


Fig.1 Example of a specified corner-R in the drawing

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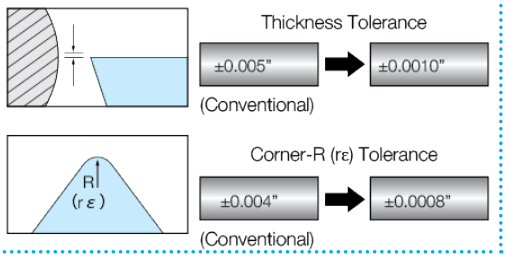
Features of Insert

with tolerance symbol "E" Class

• Same edge position and height after changing inserts



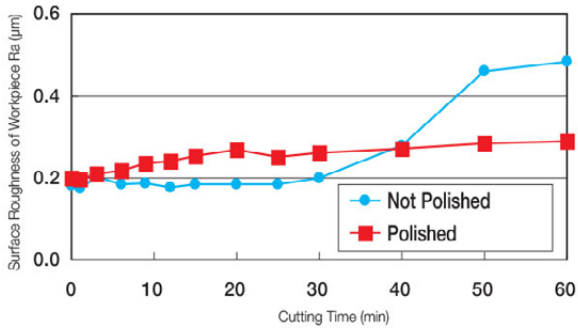
Polish (Insert Rake Face) Effects

1) Improved Smoothness

- Better adhesion resistance due to smooth chip flow.
- Polished inserts achieve high performance especially in stainless steel and aluminum cutting.

2) Polished inserts improve surface smoothness

● Surface Finish Comparison of Workpiece

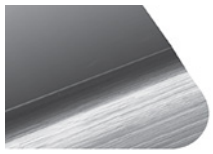


Cutting Condition
Workpiece Material: 304 Steel (Ø6 Bar material)
Vc=175sfm, D.O.C.=0.012, f =0.0012ipr, **Wet**
• DCGT32505MF-GF **(Non-Polished)**
• DCGT32505MFP-GF **(Polished)**

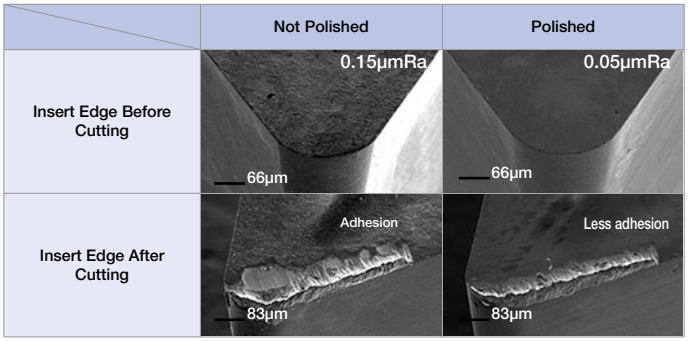
Advantages of "Super Fine"

● **High Quality Ground + "E" Class High Precision (Insert descriptions ending with "SF")**

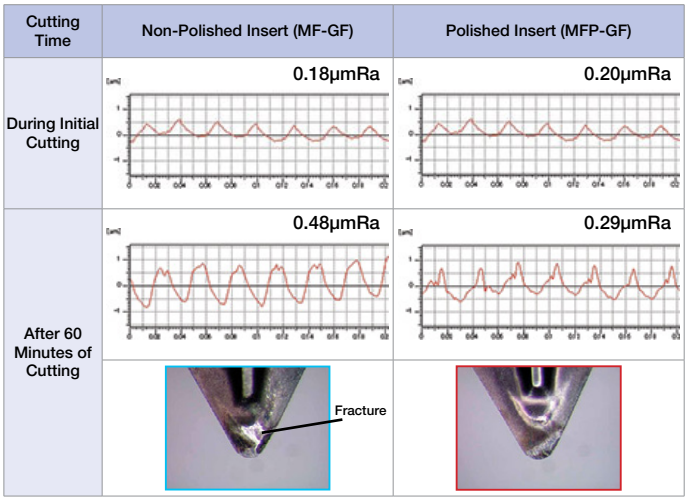
- Reduced micro chipping during edge grounding
- Less adhesion
- Long tool life



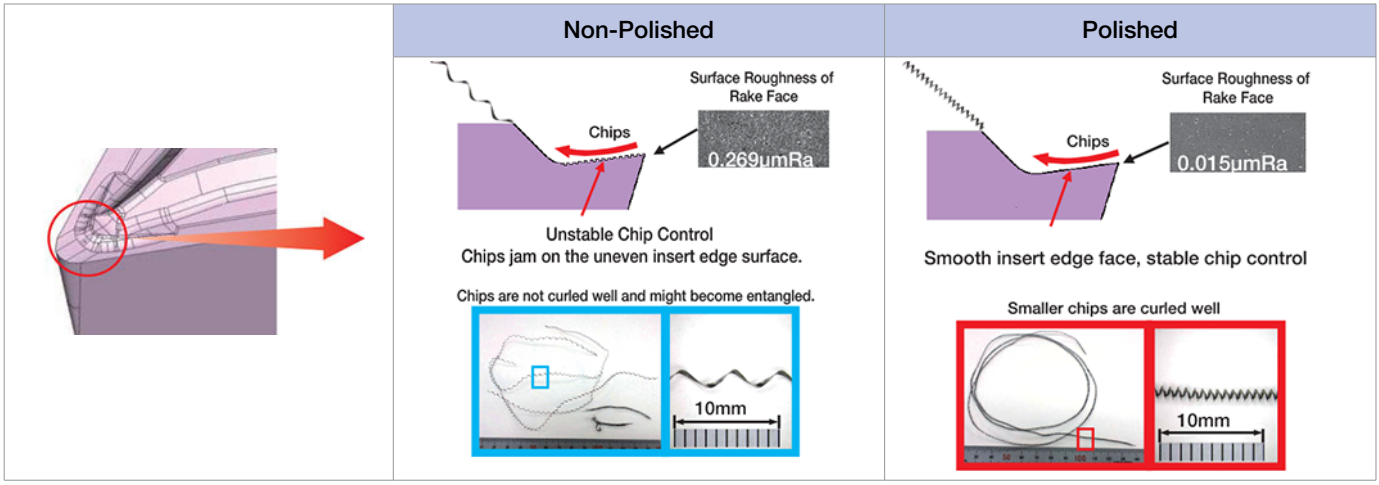
● Surface Finish of Workpiece



● Surface Finish of Workpiece

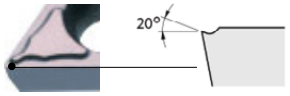
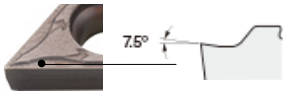
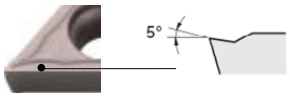
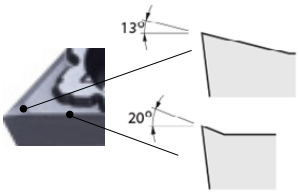
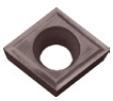
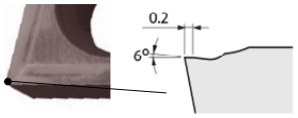
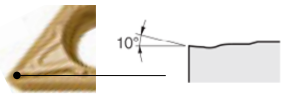


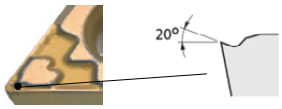
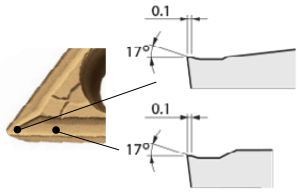
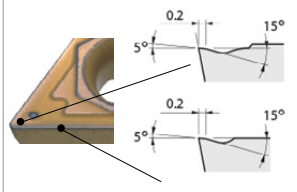
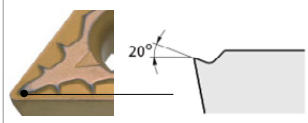
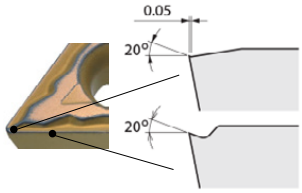
3) Chip Shape Comparison of Polished Vs. Non-Polished



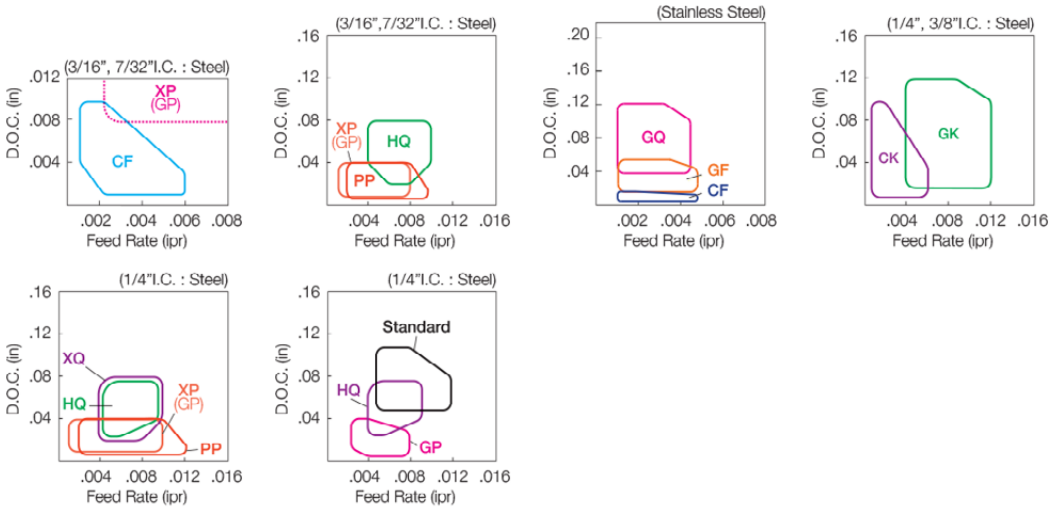
Steel

1 *Molded Chipbreaker*

Minute D.O.C.	CF			Available for minute D.O.C. (0.02 to 0.2mm) finishing.
Finishing	GF			Dot located close to ridge line of cutting edge on corner. Chips fragmented in small pieces in cutting of small D.O.C..
Finishing-Medium	GQ			Enables cutting over a wide range of conditions by using the optimum chipbreaker width according to the cutting depth.
Finishing	CK			Good cutting performance. Applicable without hand for two direction cutting on automatic lathe.
Medium	Standard (without Symbol)			Strong edge chipbreaker for medium cutting range.
Finishing	PP			3-step Smart Dot structure is applicable to a wide range of feed rates in steel finishing. Smooth taper cutting edge reduces cutting forces.

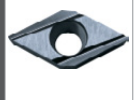
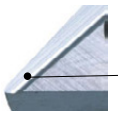
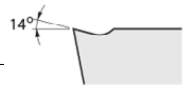
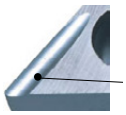
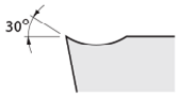
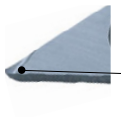
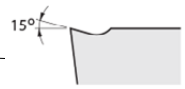
Finishing	GP			Good chip control at finishing. Applicable to sticky material like low carbon steel, pipe material.
Finishing-Medium	GK			Good chip evacuation at wide range by breaker dot and wide chip pocket.
Finishing-Medium	HQ			General purpose chipbreaker for medium cutting.
Finishing	XP			Wide chip control range and sharp cutting performance. Suitable for low carbon steel and sticky material.
Finishing-Medium	XQ			Wide chip control range and sharp cutting performance. Suitable for low carbon steel and sticky material.

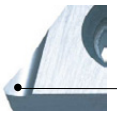
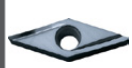
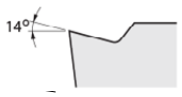
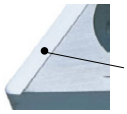
Applicable Chipbreaker Range (D.O.C. indicates radial depth per side of the workpiece)



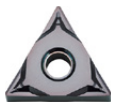
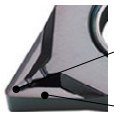
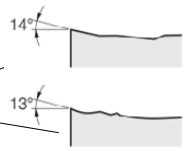
Steel

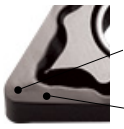
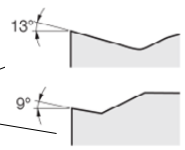
1 *Ground Chipbreaker - Positive*

Low Feed	J		 	Slant chipbreaker width and chip control at various D.O.C..
Low Feed	U		 	Good chip control at low feed rate and varied D.O.C. with low cutting force. Suitable for automatic lathes.
Finishing	F		 	Good chip control at finishing to light cutting with low cutting force.

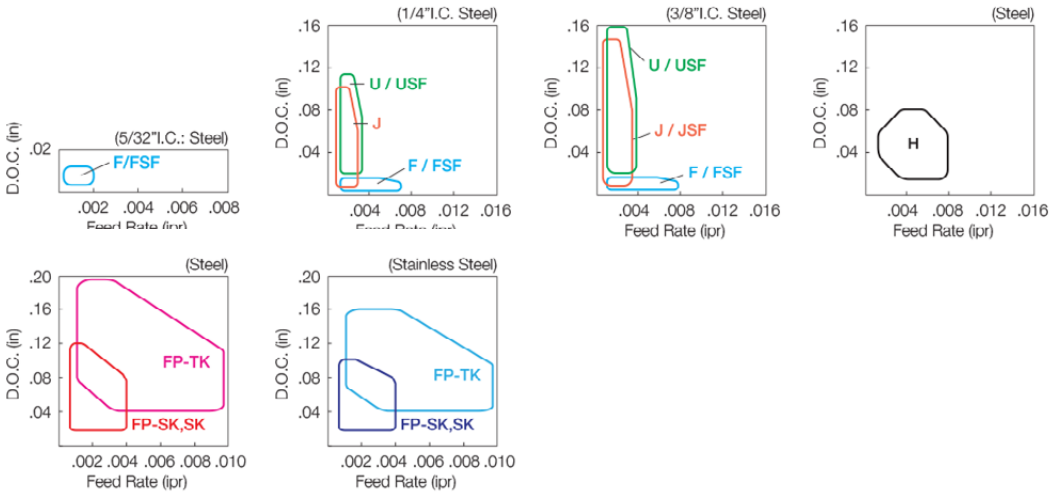
Finishing	Land (Without Indication)		 	Good chip control at finishing to light cutting with low cutting force.
Finishing-Medium	Y		 	Sharp cutting performance and good surface finish.
Finishing-Medium	H		 	Sharp cutting performance and small curled chips.

Steel / Stainless Steel (for Negative Small Parts Machining)

Finishing-Medium	SK	 FP-SK: Mirror Finish -SK: Honing	 	For finishing to medium machining with automatic lathes. Sharp Edge / Polished: Sharp Cutting. Smooth chipbreaker geometry improves chip flow with less adhesion. Large curled chips.

Medium-Roughing	FP -TK		 	For medium to high feed with automatic lathes (when cutting medium to large diameter workpieces). Sharp Edge / Polished: Sharp Cutting. Smooth chipbreaker geometry improves chip flow with less adhesion. Large curled chips.

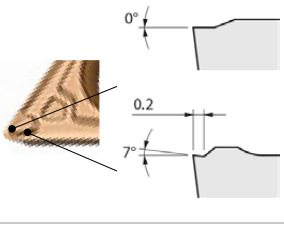
Applicable Chipbreaker Range (D.O.C. indicates radius)



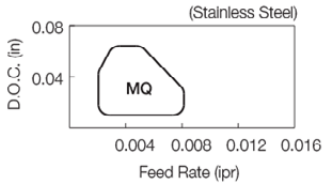
How to Select Chipbreakers

Advantages	Application	Chipbreaker name
Chip control ("G" class / sharp edge)	Minute Depths of Cut	CF
	Small Depths of Cut	GF
	Medium to high feed	GQ
High precision (Ground Chipbreaker)	Small diameter parts with less rigidity	U (USF)
	Improved chip control in various Depths of Cut	J (JSF)
	Finishing	F (FSF), Lead (Without Symbol)
Sub Chipbreaker	Lower cutting resistance, improved adhesion resistance	CK

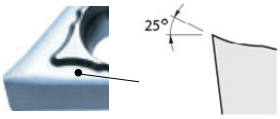
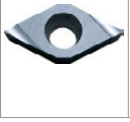
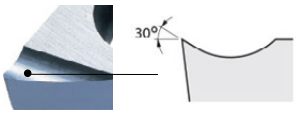
Stainless Steel

Finishing	MQ	 	Good chip evacuation at internal turning. Small curled chips. Prevents chip entanglement with toolholder and stabilizes surface roughness.

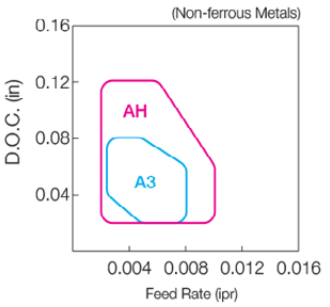
Applicable Chipbreaker Range (D.O.C. indicates radius)



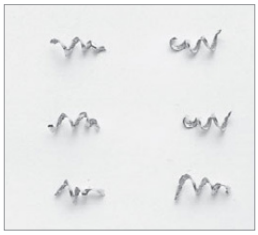
Aluminum & Non-ferrous Metals

Finishing-Medium	AH	 	Positive chip groove and good chip control with low cutting forces. Polished surface reduces adhesion.
Finishing-Medium	A3	 	Large rake angle, smooth chip flow and less adhesion. Sharp edge and good surface finish.

Applicable Chipbreaker Range (D.O.C. indicates radius)



AH Chipbreaker



Insert Color

Cermet, MEGACOAT Cermet, and PVD Coated Cermet

Grades	Cermet							MEGACOAT NANO Cermet	MEGACOAT Cermet				PVD Cermet	
	NEW TN620	TN6010	TN6020	TN60	TN100M	TC40N	TC60M	NEW PV720	PV7005	PV7010	PV7025	PV7040	PV7020	PV90
Insert Color														

MEGACOAT (PVD Coated Carbide)

Grades	MEGACOAT						
	PR1210	PR1215	PR1225	PR1230	PR1305	PR1310	PR1325
Insert Color							

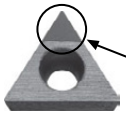
CVD Coated Carbide and PVD Coated Carbide

Grades	CVD Coated Carbide					PVD Coated Carbide				
	NEW CA510 CA515 CA525 CA530	CA55 Series	CA65 Series	PR930	PR1005	PR1025	PR1115	PR1125
Insert Color								

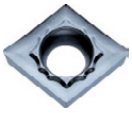
MEGACOAT NANO (PVD Coated Carbide)

Grades	MEGACOAT NANO		
	PR1425	PR1510	PR1525
Insert Color			

CBN and PCD

Grades	CBN			NEW	PCD			MEGACOAT CBN
	KBN65B	KBN510	KBN525	KBN570	KPD001	KPD010	KPD230	KBN..M
Insert Color								

Carbide

Grades	Carbide			
	GW15	GW25	KW10	SW05
Insert Color				

KYOCERA

How to Read "Turning Inserts" Pages

- Refer below on how to read the "Indexable Turning Inserts" tables
- Section C contains similar content.

Classification of usage

- ✖ Interruption / 1st Choice
- ✖ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ○ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

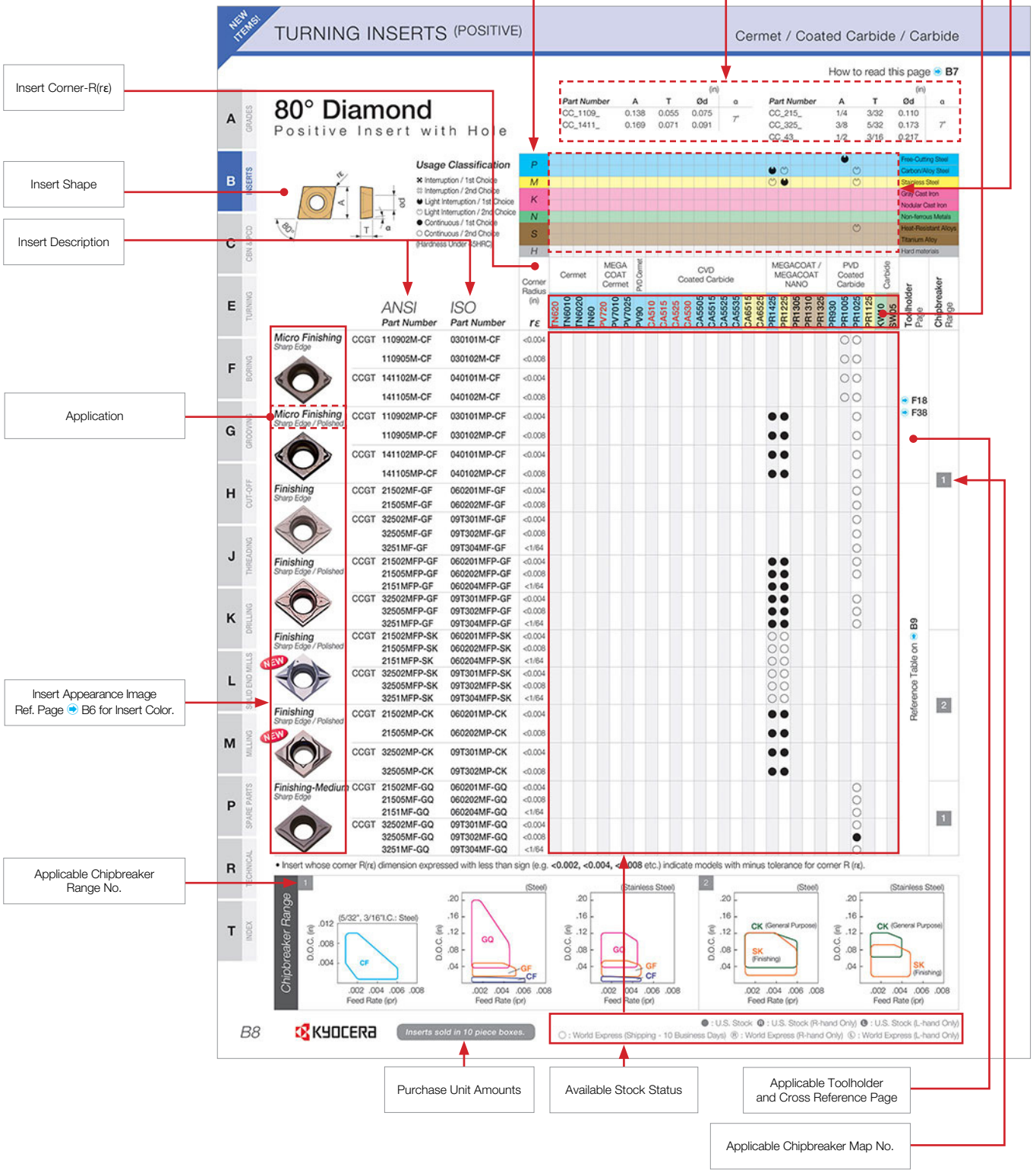
(In case hardness is under 45HRC)

Recommended grades for each applications are shown here.

Inserts' ISO Classification of Usage (Workpiece materials are written on the right side)

Insert Dimensions

Insert Grades *(Red Fonts Are New Grades)*



Insert Corner-R(rε)

Insert Shape

Insert Description

Application

Insert Appearance Image
Ref. Page B6 for Insert Color.

Applicable Chipbreaker Range No.

Purchase Unit Amounts

Available Stock Status

Applicable Toolholder and Cross Reference Page

Applicable Chipbreaker Map No.

How to read this page ➡ B7

80° Diamond

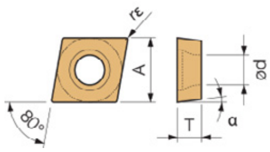
Positive Insert with Hole

(in)

Part Number	A	T	Ød	α
CC_1109_	0.138	0.055	0.075	7°
CC_1411_	0.169	0.071	0.091	

(in)

Part Number	A	T	Ød	α
CC_215_	1/4	3/32	0.110	7°
CC_325_	3/8	5/32	0.173	
CC_43_	1/2	3/16	0.217	



Usage Classification

- ✖ Interruption / 1st Choice
- ✲ Interruption / 2nd Choice
- ◕ Light Interruption / 1st Choice
- ◌ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

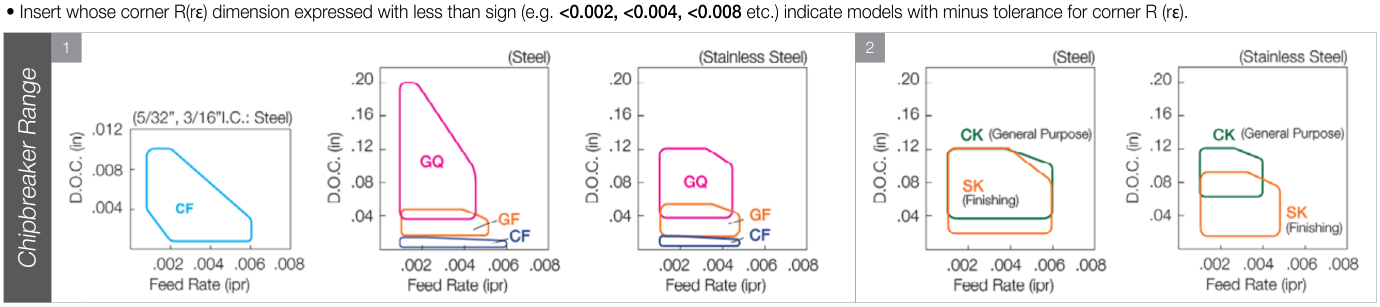
(Hardness Under 45HRC)

Class	Work Material	TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05
P	Free-Cutting Steel																									◕				
P	Carbon/Alloy Steel																			◕	◌						◌			
M	Stainless Steel																			◌	◕						◌			
K	Gray Cast Iron																													
K	Nodular Cast Iron																													
N	Non-ferrous Metals																													
S	Heat-Resistant Alloys																										◌			
S	Titanium Alloy																													
H	Hard materials																													

Chipbreaker	ANSI	ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet				MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide										MEGACOAT / MEGACOAT NANO					PVD Coated Carbide				Carbide		Toolholder Page	Chipbreaker Range
					TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05		
Micro Finishing Sharp Edge	CCGT	110902M-CF	030101M-CF	<0.004																									○	○				➡ F18 ➡ F39	1
		110905M-CF	030102M-CF	<0.008																									○	○					
	CCGT	141102M-CF	040101M-CF	<0.004																									○	○					
		141105M-CF	040102M-CF	<0.008																									○	○					
Micro Finishing Sharp Edge / Polished	CCGT	110902MP-CF	030101MP-CF	<0.004																			●	●						○					
		110905MP-CF	030102MP-CF	<0.008																			●	●						○					
	CCGT	141102MP-CF	040101MP-CF	<0.004																			●	●						○					
		141105MP-CF	040102MP-CF	<0.008																			●	●						○					
Finishing Sharp Edge	CCGT	21502MF-GF	060201MF-GF	<0.004																										○					
		21505MF-GF	060202MF-GF	<0.008																										○					
	CCGT	32502MF-GF	09T301MF-GF	<0.004																										○					
		32505MF-GF	09T302MF-GF	<0.008																										○					
		3251MF-GF	09T304MF-GF	<1/64																										○					
Finishing Sharp Edge / Polished	CCGT	21502MFP-GF	060201MFP-GF	<0.004																			●	●						○					
		21505MFP-GF	060202MFP-GF	<0.008																			●	●						○					
		2151MFP-GF	060204MFP-GF	<1/64																			●	●											
	CCGT	32502MFP-GF	09T301MFP-GF	<0.004																			●	●						○					
		32505MFP-GF	09T302MFP-GF	<0.008																			●	●						○					
		3251MFP-GF	09T304MFP-GF	<1/64																			●	●						○					
Finishing Sharp Edge / Polished NEW	CCGT	21502MFP-SK	060201MFP-SK	<0.004																			○	○										Reference Table on ➡ B9	2
		21505MFP-SK	060202MFP-SK	<0.008																			○	○											
		2151MFP-SK	060204MFP-SK	<1/64																			○	○											
	CCGT	32502MFP-SK	09T301MFP-SK	<0.004																			○	○											
		32505MFP-SK	09T302MFP-SK	<0.008																			○	○											
		3251MFP-SK	09T304MFP-SK	<1/64																			○	○											
Finishing Sharp Edge / Polished NEW	CCGT	21502MP-CK	060201MP-CK	<0.004																			●	●											
		21505MP-CK	060202MP-CK	<0.008																			●	●											
	CCGT	32502MP-CK	09T301MP-CK	<0.004																			●	●											
		32505MP-CK	09T302MP-CK	<0.008																			●	●											
Finishing-Medium Sharp Edge	CCGT	21502MF-GQ	060201MF-GQ	<0.004																										○					1
		21505MF-GQ	060202MF-GQ	<0.008																										○					
		2151MF-GQ	060204MF-GQ	<1/64																										○					
	CCGT	32502MF-GQ	09T301MF-GQ	<0.004																										○					
		32505MF-GQ	09T302MF-GQ	<0.008																										●					
		3251MF-GQ	09T304MF-GQ	<1/64																										○					

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



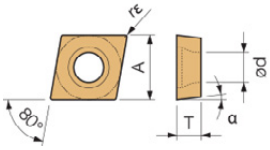
● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) ⓡ : World Express (R-hand Only) ⓛ : World Express (L-hand Only)

How to read this page ➔ B7

80° Diamond

Positive Insert with Hole

Part Number	A (in)	T (in)	Ød (in)	α
CC_215_	1/4	3/32	0.110	7°
CC_325_	3/8	5/32	0.173	
CC_43_	1/2	3/16	0.217	



Usage Classification

✖ Interruption / 1st Choice
❋ Interruption / 2nd Choice
● Light Interruption / 1st Choice
◔ Light Interruption / 2nd Choice
● Continuous / 1st Choice
○ Continuous / 2nd Choice
(Hardness Under 45HRC)

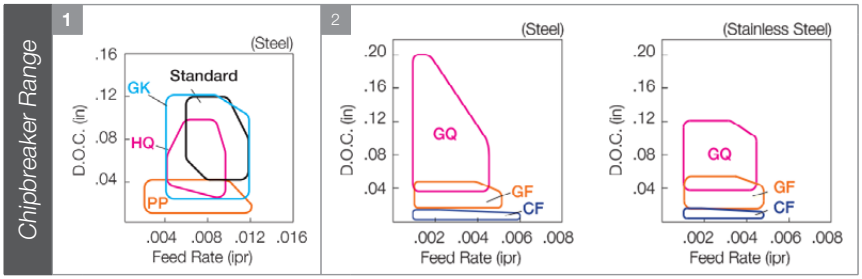
P	●	●	◔			●	●	◔			○	●	●	✖			◔	❋			●	◔				◔		◔			Free-Cutting Steel / Carbon/Alloy Steel
M																			●	●	◔	●				◔		◔	◔		Stainless Steel
K															❋																Gray Cast Iron / Nodular Cast Iron
N															◔																Non-ferrous Metals
S																			○	◔								◔	◔		Heat-Resistant Alloys / Titanium Alloy
H																															Hard materials

	ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Finishing-Medium *Sharp Edge / Polished*	CCGT 21502MFP-GQ	060201MFP-GQ	<0.004																		●	●						○					
	21505MFP-GQ	060202MFP-GQ	<0.008																		●	●						○					
	2151MFP-GQ	060204MFP-GQ	<1/64																		●	●						○					2
	CCGT 32502MFP-GQ	09T301MFP-GQ	<0.004																		●	●						○					
	32505MFP-GQ	09T302MFP-GQ	<0.008																		●	●						○					
	3251MFP-GQ	09T304MFP-GQ	<1/64																		●	●						○					
Finishing NEW	CCMT 21505PP	060202PP	0.008	●	○	○		●	○	○		○	○	○	○						○	○											
	2151PP	060204PP	1/64	●	○	○		●	○	○		○	●	●	○						○	○											
	CCMT 32505PP	09T302PP	0.008	●	○	○		●	○	○		○	○	○	○						○	○											
	3251PP	09T304PP	1/64	●	○	○		●	○	○		○	●	●	○						○	○											
	3252PP	09T308PP	1/32	●	○	○		●	○	○		○	●	●	○						○	○											
	CCMT 21505GK	060202GK	0.008	●	○	○		●	●	●		○	○	○	○		●	●		●	●	●					●		○	●			
Finishing-Medium	2151GK	060204GK	1/64	●	○	○		●	●	●		○	●	●	○		●	●	●	●	●	●					●		○	●			
	CCMT 32505GK	09T302GK	0.008	●	○	○		●	●	●		○	○	○	○		●	●	○	●	●	●					●		○	●			
	3251GK	09T304GK	1/64	●	○	○		●	●	●		○	●	●	○		●	●	●	●	●	●					●		○	●			
	CCMT 431GK	120404GK	1/64	●	○	○		●	●	●		○	●	●	○		●	●	●	●	●						○		○	●			➔ E23
	432GK	120408GK	1/32	●	○	○		●	●	●		○	●	●	○		●	●	○	●	●						○		○	●			➔ E34
	433GK	120412GK	3/64			○						○	○	○	○		●	●	●	●	●						○		○	●			
Finishing-Medium	CCMT 21505HQ	060202HQ	0.008	○	○	●	●	○	●	●	●	○	○	○	○		●	●	○	●	●	●						○		○	●			
	2151HQ	060204HQ	1/64	○	○	●	●	○	●	●	●	○	●	●	○		●	●	●	●	●	●						●		○	●			
	CCMT 32505HQ	09T302HQ	0.008	●	○	●	●	●	●	●	●	○	○	○	○		●	●	○	●	●	●						●		○	●			
	3251HQ	09T304HQ	1/64	●	○	●	●	●	●	●	●	○	●	●	○		●	●	●	●	●	●						●		●	●			
	3252HQ	09T308HQ	1/32	●	○	●	●	●	●	●	○	○	●	●	○		●	●	●	●	●	●						●		●	●			
Medium *Honed Edge Standard Chipbreaker*	CCGT 21502	060201	0.004	○	○	●	●	○		●	●																	●					
	21505	060202	0.008	○	○	●	●	○		●	●																	●					
	2151	060204	1/64	○	○	●	●	○		●	●																	●					
	CCGT 32502	09T301	0.004	○	○	●	●	○		●	●																	●					
	32505	09T302	0.008	○	○	●	●	○		●	●																	●					
	3251	09T304	1/64	○	○	●	●	○		●	●																	●					
	CCMT 3252	09T308	1/32	○	○	○	○	○		●	○	○	○	○	○	●	●	●		●	●	●					●		○	●			
	CCGT 215013M	0602005M	<0.002																														
	21502M	060201M	<0.004																										○				
	21505M	060202M	<0.008																										○				
	2151M	060204M	<1/64																										○				
	CCGT 325013M	09T3005M	<0.002																														
	32502M	09T301M	<0.004																										●				
	32505M	09T302M	<0.008																										●				
	3251M	09T304M	<1/64																										●				

Reference Table Below

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



Part Number	Applicable Toolholder Page
CC..215	E22~ E23, E34, F39
CC..325	E22~ E23, E34, F39

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes.

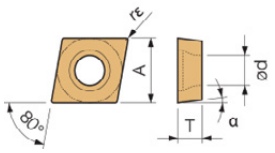
How to read this page ➡ B7

80° Diamond

Positive Insert with Hole

Part Number	A	T	Ød (in)	α
CC_1109_	0.138	0.055	0.075	7°
CC_1411_	0.169	0.071	0.091	

Part Number	A	T	Ød (in)	α
CC_215_	1/4	3/32	0.110	7°
CC_325_	3/8	5/32	0.173	
CC_43_	1/2	3/16	0.217	



Usage Classification

- ✱ Interruption / 1st Choice
- ❋ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

P	●	●			●													●	◔				●			Free-Cutting Steel
																						◔		◔		Carbon/Alloy Steel
M																●	●	◔	●			◔		◔	◔	Stainless Steel
K																										Gray Cast Iron
																										Nodular Cast Iron
N																										Non-ferrous Metals
S																○	◔		●	●	✱			◔	◔	Heat-Resistant Alloys
																									●	Titanium Alloy
H																										Hard materials

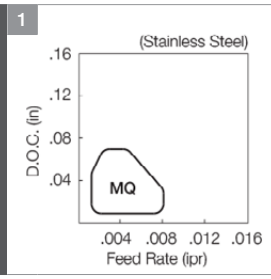
	ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	P/D Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Medium *Sharp Edge Standard Chipbreaker*																																	
CCGT	215013MF	0602005MF	<0.002																			●	●										
	21502MF	060201MF	<0.004																			●	●				○	○					
	21505MF	060202MF	<0.008																			●	●				○	○					
	2151MF	060204MF	<1/64																			●	●				○	○					B9
CCGT	325013MF	09T3005MF	<0.002																			●	●						●				
	32502MF	09T301MF	<0.004																			●	●				●	●					
	32505MF	09T302MF	<0.008																			●	●				○	○					
	3251MF	09T304MF	<1/64																			●	●				●	●					1
Finishing-Medium *Stainless Steel / Heat Resistant Alloy*																																	
CCMT	3251MQ	09T304MQ	1/64																		○	○			●	●	●			○		○	
	3252MQ	09T308MQ	1/32																		○	○			●	●	●			○		○	1
CCET	110901R/L-FSF	0301003R/L-FSF	0.001																								○						
	110902R/L-FSF	030101R/L-FSF	0.004		○		○																				○						
	110905R/L-FSF	030102R/L-FSF	0.008		○		○																				○						
	11091R/L-FSF	030104R/L-FSF	1/64		○		○																				○						
Finishing *Sharp Edge / Precision Super Fine*																																	
CCET	141101R/L-FSF	0401003R/L-FSF	0.001																								○						
	141102R/L-FSF	040101R/L-FSF	0.004		○		○																				○						
	141105R/L-FSF	040102R/L-FSF	0.008		○		○																				○						
	14111R/L-FSF	040104R/L-FSF	1/64		○		Ⓛ																										
CCET	1109013MR/L-FSF	0301005MR/L-FSF	<0.002																				●										
	110902MR/L-FSF	030101MR/L-FSF	<0.004																				●						○				
	110905MR/L-FSF	030102MR/L-FSF	<0.008																				●						○				
	11091MR/L-FSF	030104MR/L-FSF	<1/64																				●						○				F18 F39
CCET	1411013MR/L-FSF	0401005MR/L-FSF	<0.002																				●										2
	141102MR/L-FSF	040101MR/L-FSF	<0.004																				●						○				
	141105MR/L-FSF	040102MR/L-FSF	<0.008																				●						○				
	14111MR/L-FSF	040104MR/L-FSF	<1/64																				●						○				
Finishing *Sharp Edge* NEW																																	
CCET	1109013MR/L-F	0301005MR/L-F	<0.002																				●										
	110902MR/L-F	030101MR/L-F	<0.004																				●										
	110905MR/L-F	030102MR/L-F	<0.008	Ⓛ				Ⓛ															●										
	11091MR/L-F	030104R/L-F	<0.016	Ⓛ				Ⓛ															●										
CCET	141102MR/L-F	040101MR/L-F	<0.004																				●										
	141105MR/L-F	040102MR/L-F	<0.008	Ⓛ				Ⓛ															●										
	14111MR/L-F	040104MR/L-F	<0.016	Ⓛ				Ⓛ															●										

Reference Table Below

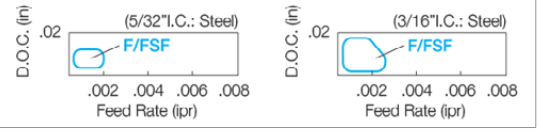
• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range

1



2



Part Number	Applicable Toolholder Page
CC..215	E22~ E23, E34, F39
CC..325	E22~ E23, E34, F39

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

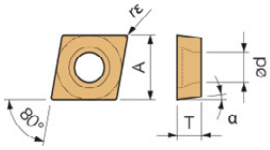
How to read this page ➔ B7

80° Diamond

Positive Insert with Hole

Part Number	A (in)	T (in)	Ød (in)	α
CC_1109_	0.138	0.055	0.075	7°
CC_1411_	0.169	0.071	0.091	

Part Number	A (in)	T (in)	Ød (in)	α
CC_215_	1/4	3/32	0.110	7°
CC_325_	3/8	5/32	0.173	
CC_43_	1/2	3/16	0.217	



Usage Classification

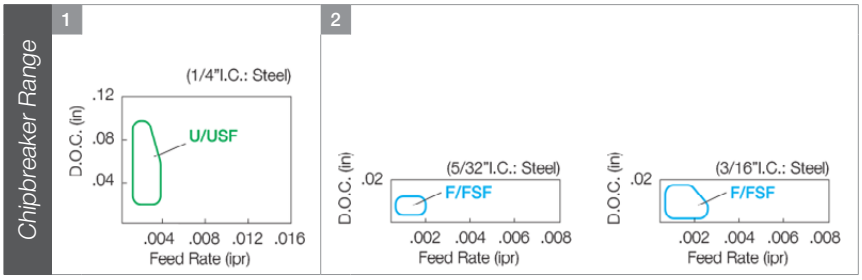
✖ Interruption / 1st Choice
❋ Interruption / 2nd Choice
● Light Interruption / 1st Choice
◔ Light Interruption / 2nd Choice
● Continuous / 1st Choice
○ Continuous / 2nd Choice
(Hardness Under 45HRC)

P	●	●	◔		●	●	◔										●	◔				●	◔	◔			Free-Cutting Steel / Carbon/Alloy Steel
M																	◔	●				◔		◔			Stainless Steel
K																									❋		Gray Cast Iron / Nodular Cast Iron
N																									●		Non-ferrous Metals
S																								◔			Heat-Resistant Alloys
S																									●		Titanium Alloy
H																											Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet				MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide								MEGACOAT / MEGACOAT NANO					PVD Coated Carbide				Carbide		Toolholder Page	Chipbreaker Range
					TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05		
Finishing Sharp Edge	CCGT	110901R/L-F	0301003R/L-F	0.001				○																			Ⓛ						
		110902R/L-F	030101R/L-F	0.004		○		●			Ⓛ																●				○		
		110905R/L-F	030102R/L-F	0.008		○	Ⓛ	●		Ⓛ	○	●															○				○		
		11091R/L-F	030104R/L-F	1/64		○	Ⓛ	○		Ⓛ	○	Ⓛ															●				○		
	CCGT	141101R/L-F	0401003R/L-F	0.001																							○						
		141102R/L-F	040101R/L-F	0.004		○		○			Ⓛ																○				○		
		141105R/L-F	040102R/L-F	0.008		○	Ⓛ			Ⓛ	○	Ⓛ															○				Ⓡ		
		14111R/L-F	040104R/L-F	1/64		○	Ⓛ	●		Ⓛ	○	Ⓛ															○				○		
	CCGT	1109013MR/L-F	0301005MR/L-F	<0.002																			●										
		110902MR/L-F	030101MR/L-F	<0.004																			●					○	○				
		110905MR/L-F	030102MR/L-F	<0.008																			●					○	○				
		11091MR/L-F	030104MR/L-F	<1/64																			●					○	○				
	CCGT	1411013MR/L-F	0401005MR/L-F	<0.002																			●										
		141102MR/L-F	040101MR/L-F	<0.004																			●					○	○				
		141105MR/L-F	040102MR/L-F	<0.008																			●					○	○				
		14111MR/L-F	040104MR/L-F	<1/64																			●					○	○				
																																F18 F39	2
Low Feed Sharp Edge / Precision Super Fine	CCET	21501FR/L-USF	0602003FR/L-USF	0.001				Ⓡ																			●						
		21502FR/L-USF	060201FR/L-USF	0.004		○		○																			●						
		21505FR/L-USF	060202FR/L-USF	0.008		○		○																			●						
	CCET	32501FR/L-USF	09T3003FR/L-USF	0.001				Ⓡ																			●						
		32502FR/L-USF	09T301FR/L-USF	0.004		○		○																			●						
		32505FR/L-USF	09T302FR/L-USF	0.008		○		○																			●						
	CCET	215013MFR/L-USF	0602005MFR/L-USF	<0.002																				●									
		21502MFR/L-USF	060201MFR/L-USF	<0.004																				●						○			
		21505MFR/L-USF	060202MFR/L-USF	<0.008																				●						○			
	CCET	325013MFR/L-USF	09T3005MFR/L-USF	<0.002																				●									
		32502MFR/L-USF	09T301MFR/L-USF	<0.004																				●						○			
		32505MFR/L-USF	09T302MFR/L-USF	<0.008																				●						○			
																																Reference Table Below	1
Low Feed Sharp Edge NEW	CCET	215013MFR/L-U	0602005MFR/L-U	<0.002																			●										
		21502MFR/L-U	060201MFR/L-U	<0.004	○				○														●										
		21505MFR/L-U	060202MFR/L-U	<0.008	○				○														●										
	CCET	325013MFR/L-U	09T3005MFR/L-U	<0.002																			●										
		32502MFR/L-U	09T301MFR/L-U	<0.004	Ⓡ				Ⓡ														●										
		32505MFR/L-U	09T302MFR/L-U	<0.008	Ⓡ				Ⓡ														●										
		3251MFR/L-U	09T304MFR/L-U	<0.016																			●										

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



Part Number	Applicable Toolholder Page
CC..215	E22~ E23, E34, F39
CC..325	E22~ E23, E34, F39

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes.

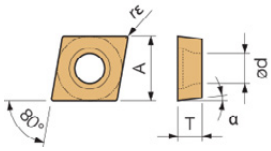
How to read this page ➡ B7

80° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
CC..215	E22~ E23, E34, F39
CC..325	E22~ E23, E34, F39

Part Number	A	T	Ød (in)	α
CC_215_	1/4	3/32	0.110	7°
CC_325_	3/8	5/32	0.173	
CC_43_	1/2	3/16	0.217	



Usage Classification

- ✱ Interruption / 1st Choice
- ✲ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

P	●	●	◔		●		◔										●	●				●		◔		◔		Free-Cutting Steel
																											Carbon/Alloy Steel
M																	◔	●				◔		◔				Stainless Steel
K																										✲		Gray Cast Iron
																												Nodular Cast Iron
N																										●		Non-ferrous Metals
S																								◔				Heat-Resistant Alloys
																										●		Titanium Alloy
H																												Hard materials

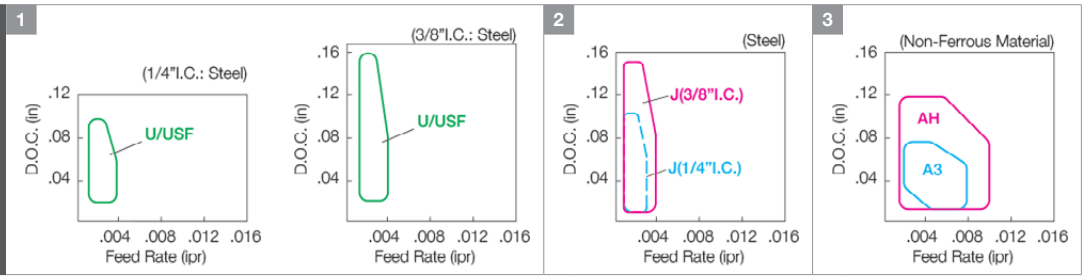
		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
	CCGT	21501F℞-U	0602003F℞-U	0.001				○																			Ⓡ				○			
		21502F℞-U	060201F℞-U	0.004		○	○	○			○																●				●			
		21505F℞-U	060202F℞-U	0.008		○	○	○			○	Ⓛ															Ⓡ				●			
	CCGT	32501F℞-U	09T3003F℞-U	0.001				○																			○				○			
Low Feed		32502F℞-U	09T301F℞-U	0.004		○	Ⓡ	○																			●				●			
Sharp Edge		32505F℞-U	09T302F℞-U	0.008		○	Ⓡ	●																			●				●			
	CCGT	215013MF℞-U	0602005MF℞-U	<0.002																			●											
		21502MF℞-U	060201MF℞-U	<0.004																			●					○	○					
		21505MF℞-U	060202MF℞-U	<0.008																			●					○	○					
		2151MF℞-U	060204MF℞-U	<1/64																			●					○	○					
	CCGT	325013MF℞-U	09T3005MF℞-U	<0.002																			●											
		32502MF℞-U	09T301MF℞-U	<0.004																			●					○	○					
		32505MF℞-U	09T302MF℞-U	<0.008																			●					○	○					
		3251MF℞-U	09T304MF℞-U	<1/64																			●					○	○					
	CCGT	21502E℞-U	060201E℞-U	0.004		○		○			○																○							
		21505E℞-U	060202E℞-U	0.008	○	○	○	○	○		○	Ⓛ															○							
		2151E℞-U	060204E℞-U	1/64	○	○	○	○	○		○	Ⓛ															○							
Low Feed	CCGT	32502E℞-U	09T301E℞-U	0.004		○		○			○																○							
Honed Edge		32505E℞-U	09T302E℞-U	0.008	Ⓡ	○	Ⓡ	○	Ⓡ		○																○							
		3251E℞-U	09T304ER-U	1/64	Ⓡ	○	Ⓡ	Ⓡ	Ⓡ		○																○							
	CCGT	21502ME℞-U	060201ME℞-U	<0.004																									○					
		21505ME℞-U	060202ME℞-U	<0.008																									○					
		2151ME℞-U	060204ME℞-U	<1/64																									○					
	CCGT	32502ME℞-U	09T301ME℞-U	<0.004																									○					
		32505ME℞-U	09T302ME℞-U	<0.008																									Ⓡ					
		3251ME℞-U	09T304ME℞-U	<1/64																									○					
Low Feed	CCET	215013MF℞-J	0602005MF℞-J	<0.002																			Ⓡ	Ⓡ										
Sharp Edge / Precision		21502MF℞-J	060201MF℞-J	<0.004																			●	●										
NEW		21505MF℞-J	060202MF℞-J	<0.008																			●	●										
	CCET	32502MF℞-J	09T301MF℞-J	<0.004																			●	●										
		32505MF℞-J	09T302MF℞-J	<0.008																			●	●										
		3251MF℞-J	09T304MF℞-J	<0.016																			●	●										
Finishing-Medium																																		
Sharp Edge Non-Ferrous Metals	CCGT	3251AH	09T304AH	1/64																												●		
		3252AH	09T308AH	1/32																												●		

Reference Table Above

Chipbreaker Range: 1, 2, 3

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



Inserts sold in 10 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

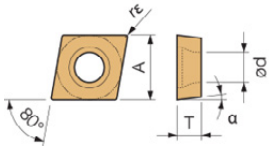
How to read this page ➔ B7

80° Diamond

Positive Insert with Hole

Part Number	A (in)	T (in)	Ød (in)	α
CC_215_	1/4	3/32	0.110	7°
CC_325_	3/8	5/32	0.173	
CC_43_	1/2	3/16	0.217	

Part Number	A (in)	T (in)	Ød (in)	α
CPMT251_	5/16	3/32	0.138	11°
CPMT32_	3/8	1/8	0.177	
CP_215_	1/4	3/32	0.110	
CP_32_	3/8	5/32	0.173	



Usage Classification

- ✖ Interruption / 1st Choice
- ✱ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

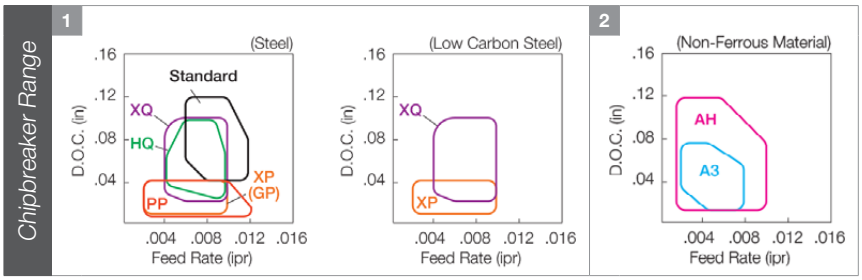
P	●	●	◔		●	●	◔		○	●	●	✖			◔	✱			●	◔			◔		◔			Free-Cutting Steel / Carbon/Alloy Steel
M																	●	●	◔	●			◔		◔	◔		Stainless Steel
K													✱														✱	Gray Cast Iron / Nodular Cast Iron
													◔															
N																											●	Non-ferrous Metals
S																	○	◔					◔	◔			●	Heat-Resistant Alloys / Titanium Alloy
H																												Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet				MEGA COAT Cermet		PVD Cermet	CVD Coated Carbide								MEGACOAT / MEGACOAT NANO					PVD Coated Carbide				Carbide		Toolholder Page	Chipbreaker Range
					TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05		
Finishing-Medium Sharp Edge Non-Ferrous Metals	CCGT	32505R/L-A3	09T302R/L-A3	0.008																										●		See Table Below	2
		3251R/L-A3	09T304R/L-A3	1/64																										●			
		3252R/L-A3	09T308R/L-A3	1/32																										Ⓡ			
	CCGT	4305R/L-A3	120402R/L-A3	0.008																										○		E23	
		431R/L-A3	120404R/L-A3	1/64																										○			
		432R/L-A3	120408R/L-A3	1/32																										○			
Cast Iron Without Chipbreaker	CCGW	21502	060201	0.004																										○		See Table Below	-
		21505	060202	0.008																										○			
	CCGW	32500	09T300	0.0																										○			
		32502	09T301	0.004																										○			
		32505	09T302	0.008																										○			
		3251	09T304	1/64																										○			
Medium	CPGT	21505	060202	0.008				●				●																●				F41	-
		2151	060204	1/64				●				●																●					
	CPGT	32505	09T302	0.008								●																●				-	
		3251	09T304	1/64				●				●																●					
		3252	09T308	1/32				●				●																					
Finishing NEW	CPMT	251505PP	080202PP	0.008	●	○	○		●	○	○		○	○	○	○							○	○										
		25151PP	080204PP	1/64	●	○	○		●	○	○		○	○	●	●							○	○										
	CPMT	3205PP	090302PP	0.008	●	○	○		●	○	○		○	○	○	○							○	○										
		321PP	090304PP	1/64	●	○	○		●	○	○		○	○	●	●							○	○										
		322PP	090308PP	1/32	●	○	○		●	○	○		○	○	●	●							○	○										
Finishing	CPMT	25151GP	080204GP	1/64		○	○	●		●	●	○	○	○	○	○		●	●				●					○		○				
	CPMT	321GP	090304GP	1/64		○	●	●		●	●	○	○	○	○	○		●	●				●					●		○				
		322GP	090308GP	1/32		○	○	○		●	●	●	○	○	○	○		●	●				●					●		○				
Finishing-Medium	CPMH	25151HQ	080204HQ	1/64	●	○	●	●	●	●	●	●	○	●	●	○		●	●	●	●	●	●					○		○	●			
		25152HQ	080208HQ	1/32	●	○	●	○	●	●	●	○	○	●	●	○		●	●	●	●	●	●					○		○	●			
	CPMH	321HQ	090304HQ	1/64	●	○	●	●	●	●	●	●	○	●	●	○		●	●	●	●	●	●					○		○	●			
		322HQ	090308HQ	1/32	●	○	●	●	●	●	●	●	○	●	●	○		●	●	●	●	●	●					●		○	●			
Medium	CPMH	25151	080204	1/64	○	○	●	●	○	●	●	●	○	○	○	○	●	●	●		●	●	●					●		○	●			
		25152	080208	1/32	○	○	●	●	○	●	●	●	○	○	○	○	●	●	●		●	●	●					●		○	●			
	CPMH	321	090304	1/64	○	○	●	●	○	●	●	●	○	○	○	○	●	●	●		●	●	●					●		○	●			
		322	090308	1/32	○	○	●	●	○	●	●	●	○	○	○	○	●	●	●		●	●	●					●		○	●			

F41 | 1

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



Part Number	Applicable Toolholder Page
CC..215	E22~ E23, E34, F39
CC..325	E22~ E23, E34, F39

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes.

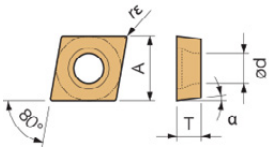
How to read this page ➡ B7

80° Diamond

Positive Insert with Hole

Part Number	A (in)	T (in)	Ød (in)	α
CPMT251_	5/16	3/32	0.138	11°
CPMT32_	3/8	1/8	0.177	

Part Number	A (in)	T (in)	Ød (in)	α
CP_215_	1/4	3/32	0.110	11°
CP_32_	3/8	5/32	0.173	



Usage Classification

- ✱ Interruption / 1st Choice
- ❋ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

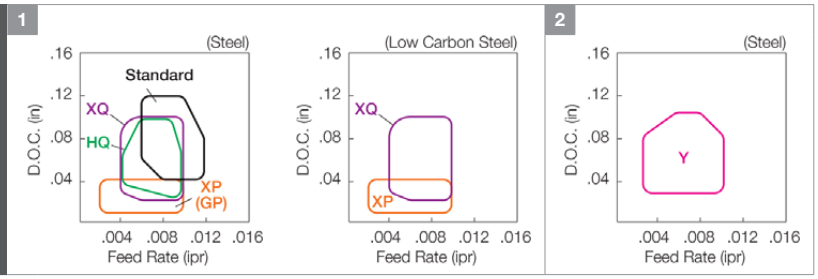
(Hardness Under 45HRC)

P	●	●	◔		●	●	◔		○	●	●	✱			◔	❋		●	◔			◔		◔			Free-Cutting Steel
																											Carbon/Alloy Steel
M																●	●	◔	●			◔		◔	◔		Stainless Steel
K												❋														❋	Gray Cast Iron
												◔															Nodular Cast Iron
N																										●	Non-ferrous Metals
S															○	◔						◔	◔				Heat-Resistant Alloys
																										●	Titanium Alloy
H																											Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Finishing Low Carbon Steel	CPMT	25151XP	080204XP	1/64	●		○		●	●	●	○	○	●	●	○		●	○				●					○		○					
	CPMT	321XP	090304XP	1/64	●		○		●	●	●	○	○	●	●	○		●	●				●					●		○					
		322XP	090308XP	1/32	●		○		●	●	●	●	○	●	●	○		●	●				●					●		○					1
Finishing-Medium Low Carbon Steel	CPMT	321XQ	090304XQ	1/64	○		○		○	●	●	○	○	●	●	○		●	●															
		322XQ	090308XQ	1/32	○		○		○	●	●	○	○	●	●	○		●	●														➡ F41	
Finishing-Medium	CPMH	25151R/L-Y	080204R/L-Y	1/64		○	Ⓛ	○				○															○		○		○			
		25152R/L-Y	080208R/L-Y	1/32				○				○															○		○		○			2
	CPMH	321R/L-Y	090304R/L-Y	1/64		○	Ⓛ	○				○															○		○		○			
		322R/L-Y	090308R/L-Y	1/32				○				○															○		○		○			
Cast Iron Without Chipbreaker	CPMB	251505	080202	0.008																											○			
		25151	080204	1/64																											○			
		25152	080208	1/32																											○			-
	CPMB	3205	090302	0.008																											○			
		321	090304	1/64																											○			
		322	090308	1/32																											○			

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



Inserts sold in 10 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

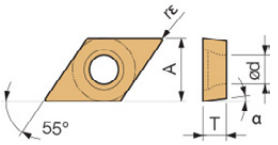
How to read this page ➔ B7

55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E24~ E27, E35, F45~ F49
DC..325	E20, E24~ E27, E35, F45~ F49

Part Number	A	T	Ød	α
			(in)	
DC_215_	1/4	3/32	0.110	7°
DC_325_	3/8	5/32	0.173	



Usage Classification

- ✖ Interruption / 1st Choice
- ❋ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

P																				●								Free-Cutting Steel
																	●	◔				◔		◔				Carbon/Alloy Steel
M																	◔	●				◔		◔				Stainless Steel
K																												Gray Cast Iron
																												Nodular Cast Iron
N																												Non-ferrous Metals
S																												Heat-Resistant Alloys
																												Titanium Alloy
H																												Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet				MEGA COAT Cermet		PVD Cermet	CVD Coated Carbide								MEGACOAT / MEGACOAT NANO					PVD Coated Carbide			Carbide		Toolholder Page	Chipbreaker Range
					TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05		
Minute D.O.C. *Sharp Edge*	DCGT	21505CF	070202CF	0.008																						●							
	DCGT	32505CF	11T302CF	0.008																						●							
	DCGT	21502M-CF	070201M-CF	<0.004																							○	○					
		21505M-CF	070202M-CF	<0.008																							○	○					
	DCGT	32502M-CF	11T301M-CF	<0.004																							○	○					
		32505M-CF	11T302M-CF	<0.008																							○	○					
Minute D.O.C. *Sharp Edge / Polished*	DCGT	21502MP-CF	070201MP-CF	<0.004																		●	●					○					
		21502MP-CF	070202MP-CF	<0.008																		●	●					○					
	DCGT	32502MP-CF	11T301MP-CF	<0.004																		●	●					○					
		32505MP-CF	11T302MP-CF	<0.008																		●	●					○					
Finishing *Sharp Edge*	DCGT	21502MF-GF	070201MF-GF	<0.004																								○					
		21505MF-GF	070202MF-GF	<0.008																								○					
	DCGT	32502MF-GF	11T301MF-GF	<0.004																								○					
		32505MF-GF	11T302MF-GF	<0.008																								○					
		3251MF-GF	11T304MF-GF	<1/64																								○					
Finishing *Sharp Edge / Polished*	DCGT	21502MFP-GF	070201MFP-GF	<0.004																		●	●					○					
		21505MFP-GF	070202MFP-GF	<0.008																		●	●					○					
		2151MFP-GF	070204MFP-GF	<1/64																		●	●										
	DCGT	32502MFP-GF	11T301MFP-GF	<0.004																		●	●					○					
		32505MFP-GF	11T302MFP-GF	<0.008																		●	●					○					
		3251MFP-GF	11T304MFP-GF	<1/64																		●	●					○					
Finishing-Medium *Sharp Edge / Polished* NEW	DCGT	21502MFP-SK	070201MFP-SK	<0.004																		○	○										
		21505MFP-SK	070202MFP-SK	<0.008																		○	○										
		2151MFP-SK	070204MFP-SK	<1/64																		●	○										
	DCGT	32502MFP-SK	11T301MFP-SK	<0.004																		○	●										
		32505MFP-SK	11T302MFP-SK	<0.008																		○	○										
		3251MFP-SK	11T304MFP-SK	<1/64																		○	○										
Finishing *Honed Edge*	DCGT	21502CK	070201CK	0.004																						●							
		21505CK	070202CK	0.008																						●							
	DCGT	32502CK	11T301CK	0.004																						●							
		32505CK	11T302CK	0.008																						●							
	DCGT	21502M-CK	070201M-CK	<0.004																							○	○					
		21505M-CK	070202M-CK	<0.008																							○	○					
	DCGT	32502M-CK	11T301M-CK	<0.004																							○	○					
		32505M-CK	11T302M-CK	<0.008																							○	●					

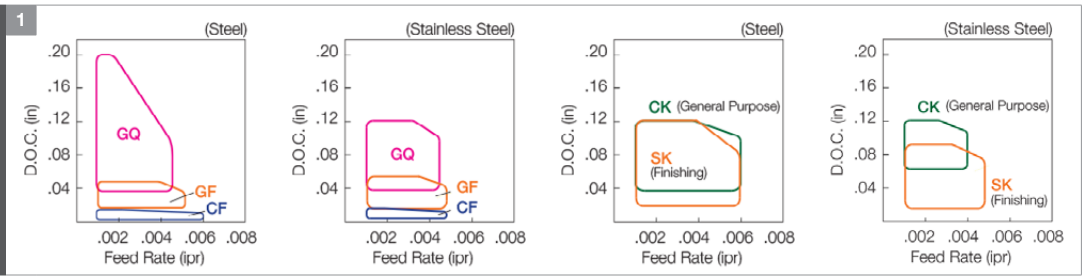
Reference Table Above

1

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range

1



● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes.

How to read this page ➡ B7

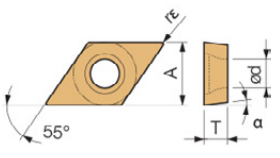
55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E24~ E27, E35, F45~ F49
DC..325	E20, E24~ E27, E35, F45~ F49

(in)

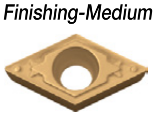
Part Number	A	T	Ød	α
DC_215_	1/4	3/32	0.110	7°
DC_325_	3/8	5/32	0.173	



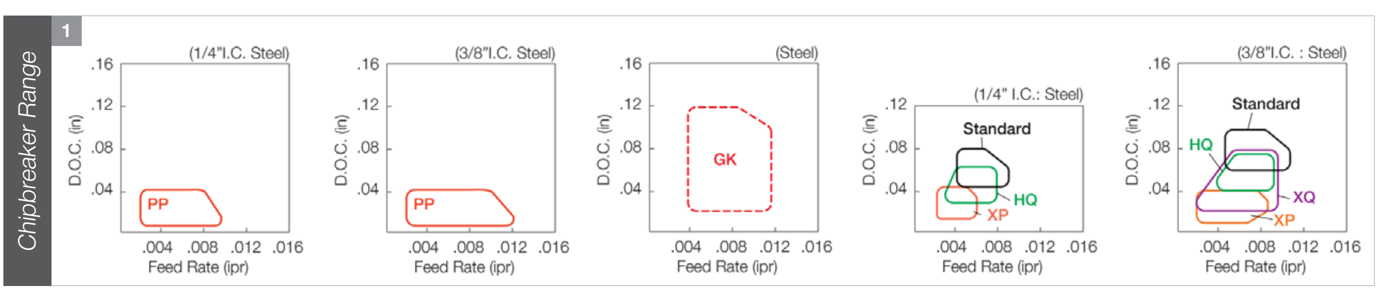
Usage Classification

- ✖ Interruption / 1st Choice
- ✲ Interruption / 2nd Choice
- ◐ Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice
- (Hardness Under 45HRC)

		Cermet: TN620	Cermet: TN6010	Cermet: TN6020	Cermet: TN60	MEGA COAT Cermet: PV720	MEGA COAT Cermet: PV7010	MEGA COAT Cermet: PV7025	PVD Cermet: PV90	CVD Coated Carbide: CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	MEGACOAT / MEGACOAT NANO: PR1425	PR1225	PR1305	PR1310	PR1325	PVD Coated Carbide: PR930	PR1005	PR1025	PR1125	Carbide: KW10	SW05
P	Free-Cutting Steel																													
P	Carbon/Alloy Steel	◐	●	◔		◐	●	◔		○	●	◐	✖			◔	✲			◐	◔				◔		◔			
M	Stainless Steel																	●	◐	◔	◐				◔		◔	◔		
K	Gray Cast Iron																													
K	Nodular Cast Iron																													
N	Non-ferrous Metals																												◐	
S	Heat-Resistant Alloys																	○	◔									◔		
S	Titanium Alloy																												◐	
H	Hard materials																													

	ANSI Part Number	ISO Part Number	Corner Radius (in) rε	TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05	Toolholder Page	Chipbreaker Range
Finishing Sharp Edge / Polished 	DCGT 21502MP-CK	070201MP-CK	<0.004																			●	●						○				Reference Table Above	➡ B15 1
	21505MP-CK	070202MP-CK	<0.008																			●	●						○					
	DCGT 32502MP-CK	11T301MP-CK	<0.004																			●	●						○		○			
	32505MP-CK	11T302MP-CK	<0.008																			●	●						○		○			
Finishing-Medium Sharp Edge 	DCGT 21502MF-GQ	070201MF-GQ	<0.004																										○					
	21505MF-GQ	070202MF-GQ	<0.008																										○					
	2151MF-GQ	070204MF-GQ	<1/64																										○					
	DCGT 32502MF-GQ	11T301MF-GQ	<0.004																										○					
	32505MF-GQ	11T302MF-GQ	<0.008																										○					
	3251MF-GQ	11T304MF-GQ	<1/64																										●					
Finishing-Medium Sharp Edge / Polished 	DCGT 21502MFP-GQ	070201MFP-GQ	<0.004																			●	●						○					
	21505MFP-GQ	070202MFP-GQ	<0.008																			●	●						○					
	2151MFP-GQ	070204MFP-GQ	<1/64																			●	●						○					
	DCGT 32502MFP-GQ	11T301MFP-GQ	<0.004																			●	●						○					
	32505MFP-GQ	11T302MFP-GQ	<0.008																			●	●						○					
	3251MFP-GQ	11T304MFP-GQ	<1/64																			●	●						○					
Finishing NEW 	DCMT 21505PP	070202PP	0.008	●	○	○		●	○	○		○	○	○	○							○	○											1
	2151PP	070204PP	1/64	●	○	○		●	○	○		○	●	●	○							○	○											
	DCMT 32505PP	11T302PP	0.008	●	○	○		●	○	○		○	○	○	○							○	○											
	3251PP	11T304PP	1/64	●	○	○		●	○	○		○	●	●	○							○	○											
	3252PP	11T308PP	1/32	●	○	○		●	○	○		○	●	●	○							○	○											
Finishing 	DCMT 21505GP	070202GP	0.008		○	○	○		●	●	●	○	○	○	○		○	○				○					○		○					
	2151GP	070204GP	1/64		○	●	●		●	●	○	○	○	○	○		●	●				○					●		○					
	DCMT 3251GP	11T304GP	0.004		○	●	●		○	●	●	○	○	○	○		●					●					○		○					
	3252GP	11T308GP	0.008		○	●	○		●	●	●	○	○	○	○		●	●				●					●		○					
Finishing-Medium 	DCMT 21505GK	070202GK	0.008	●	○	○		●	●	●		○	○	○	○		○		○	●	●	●					●		○					
	2151GK	070204GK	1/64	●	○	○		●	●	●		○	●	●	○		●	●		●	○	●					●		○	●				
	2152GK	070208GK	1/32	●	○	○		●	●	●		○	●	●	○		●	●	●	●	●	●					○		○	●				
	DCMT 32505GK	11T302GK	0.008	●	○	○		●	●	●		○	○	○	○		○	●	○	●	●	●					●		○	●				
	3251GK	11T304GK	1/64	●	○	○		●	●	●		○	●	●	○		●	●		●	○	●					●		○	●				
	3252GK	11T308GK	1/32	●	○	○		●	●	●		○	●	●	○		●	●	●	○	●	●					○		○	●				
Finishing-Medium 	DCMT 21505HQ	070202HQ	0.008	○	○	●	○	○	●	●	●	○	○	○	○		●	●	●			●					○		○					
	2151HQ	070204HQ	1/64	○	○	●	●	○	●	●	●	○	●	●	○		●	●	●	●	●	●					○		○	●				
	2152HQ	070208HQ	1/32	○	○	●	●	○	●	●	●	○	●	●	○		●	●	●	●	●	●					●		○	●				
	DCMT 32505HQ	11T302HQ	0.008	●	○	●	○	●	●	●	●	○	○	○	○		●	●	○	●	●	●					○		●	●				
	3251HQ	11T304HQ	1/64	●	○	●	●	●	●	●	●	○	●	●	○		●	●	●	●	●	●					○			●				
	3252HQ	11T308HQ	1/32	●	○	●	●	●	●	●	●	○	●	●	○		●	●	●	●	●	●					○		●	●				

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).



● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

A GRADES
B INSERTS
C CBN & PCD
E TURNING
F BORING
G GROOVING
H CUT-OFF
J THREADING
L SOLID END MILLS
M MILLING
P SPARE PARTS
R TECHNICAL
T INDEX

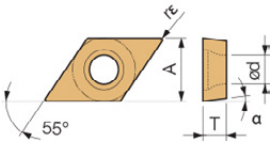
How to read this page B7

55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E24~ E27, E35, F45~ F49
DC..325	E20, E24~ E27, E35, F45~ F49

Part Number	A	T	Ød	α
			(in)	
DC_215_	1/4	3/32	0.110	7°
DC_325_	3/8	5/32	0.173	



Usage Classification

- ✖ Interruption / 1st Choice
- ✳ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

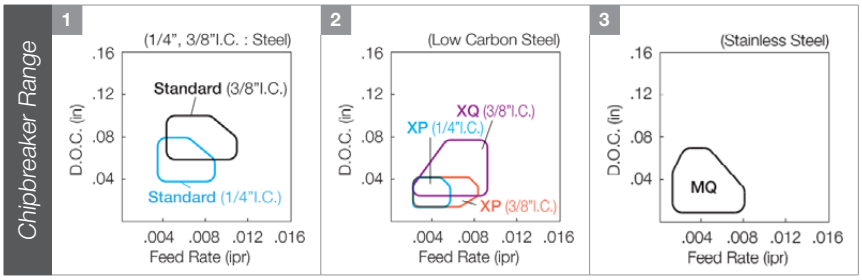
(Hardness Under 45HRC)

P	●	●	◔		●	●	◔		○	●	●	✖			◔				●	◔				●	◔				Free-Cutting Steel / Carbon/Alloy Steel
M																		●	●	◔	●			◔		◔	◔		Stainless Steel
K													✳																Gray Cast Iron / Nodular Cast Iron
N													○																Non-ferrous Metals
S																○	◔			●	●	✖			◔			●	Heat-Resistant Alloys / Titanium Alloy
H																													Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Medium *Standard Chipbreaker*	DCGT	21502	070201	0.004	○	○	●	●	○		○	●															●						Reference Table Above	1
		21505	070202	0.008	○	○	●	●	○		●	○															●							
		2151	070204	1/64	○	○	●	●	○		●	●															●							
	DCGT	32502	11T301	0.004	○	○		●	○		○	●															●							
		32505	11T302	0.008	○	○	●	●	○		●	●															●							
		3251	11T304	1/64	○	○	●	●	○		●	●															●							
	DCMT	3252	11T308	1/32	○	○	○	○	○		●	○					●										○		○					
	DCGT	215013M	0702005M	<0.002																														
		21502M	070201M	<0.004																									○					
		21505M	070202M	<0.008																									○					
		2151M	070204M	<1/64																									○					
	DCGT	325013M	11T3005M	<0.002																														
		32502M	11T301M	<0.004																									○					
		32505M	11T302M	<0.008																									○					
		3251M	11T304M	<1/64																									○					
Medium *Sharp Edge*	DCGT	215013MF	0702005MF	<0.002																			●	●										
		21502MF	070201MF	<0.004																			●	●					○	○				
		21505MF	070202MF	<0.008																			●	●					○	○				
		2151MF	070204MF	<1/64																			●	●					○	○				
	DCGT	325013MF	11T3005MF	<0.002																			●	●										
		32502MF	11T301MF	<0.004																			●	●					○	●				
		32505MF	11T302MF	<0.008																			●	●					○	●				
		3251MF	11T304MF	<1/64																			●	●					○	●				
Finishing *Low Carbon Steel*	DCMT	2151XP	070204XP	1/64	●		○		●	●	●	○	○	●	●	○		●	●				●					○		○				2
	DCMT	32505XP	11T302XP	0.008	●		○		●	●	●	○	○	○	○	○		●	●				●					○		○				
		3251XP	11T304XP	1/64	●		○		●	●	●	○	○	●	●	○		●	●				●					○		○				
		3252XP	11T308XP	1/32	●		●		●	●	○	○	○	●	●	○			●				●					○		○				
Finishing-Medium *Low Carbon Steel*	DCMT	3251XQ	11T304XQ	1/64	○		●	○	○	●	●	○	○	●	●	○		●	●															
		3252XQ	11T308XQ	1/32	○		●	●	○		●	○	○	●	●	○		●	●															
Finishing-Medium *Stainless Steel / Heat Resistant Alloy*	DCMT	21505MQ	070202MQ	0.008																	○	○				●			○		○		3
		2151MQ	070204MQ	1/64																	○	○				●			○		○		
	DCMT	32505MQ	11T302MQ	0.008																	○	○							○				
		3251MQ	11T304MQ	1/64																	○	○			●	●	●		○		○		
		3252MQ	11T308MQ	1/32																						●	●					○	

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



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Inserts sold in 10 piece boxes.

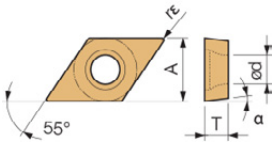
How to read this page ➡ B7

55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E24~ E27, E35, F45~ F49
DC..325	E20, E24~ E27, E35, F45~ F49

Part Number	A	T	Ød	α
	(in)			
DC_215_	1/4	3/32	0.110	7°
DC_325_	3/8	5/32	0.173	



Usage Classification

- ✱ Interruption / 1st Choice
- ✲ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

P			●														●	◔				●		◔			Free-Cutting Steel
		●															●	◔				◔		◔			Carbon/Alloy Steel
M																	◔	●				◔		◔			Stainless Steel
K																									✲		Gray Cast Iron
																									✲		Nodular Cast Iron
N																									●		Non-ferrous Metals
S																									●		Heat-Resistant Alloys
																									●		Titanium Alloy
H																											Hard materials

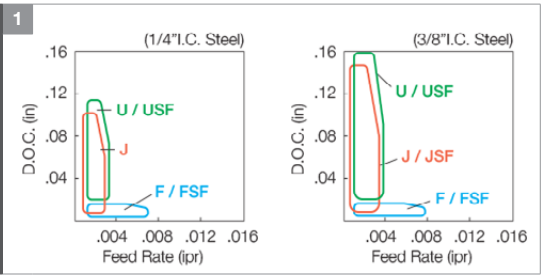
		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
	DCET	21501R/L-FSF	0702003R/L-FSF	0.001																							Ⓡ				Ⓡ			
		21502R/L-FSF	070201R/L-FSF	0.004				○																			Ⓡ				Ⓡ			
		21505R/L-FSF	070202R/L-FSF	0.008				○																			Ⓡ				Ⓡ			
		2151R/L-FSF	070204R/L-FSF	1/64				○																			Ⓡ				Ⓡ			
	DCET	32501R/L-FSF	11T3003R/L-FSF	0.001																							○							
Finishing		32502R/L-FSF	11T301R/L-FSF	0.004				○																			○							
Sharp Edge / Precision		32505R/L-FSF	11T302R/L-FSF	0.008				○																			○							
Super Fine		3251R/L-FSF	11T304R/L-FSF	1/64				Ⓛ																			○							
	DCET	215013MR/L-FSF	0702005MR/L-FSF	<0.002																			●											
		21502MR/L-FSF	070201MR/L-FSF	<0.004																			●						○					
		21505MR/L-FSF	070202MR/L-FSF	<0.008																			●						○					
		2151MR/L-FSF	070204MR/L-FSF	<1/64																			●						○					
	DCET	325013MR/L-FSF	11T3005MR/L-FSF	<0.002																			●											
		32502MR/L-FSF	11T301MR/L-FSF	<0.004																			●						○					
		32505MR/L-FSF	11T302MR/L-FSF	<0.008																			●						○					
		3251MR/L-FSF	11T304MR/L-FSF	<1/64																			●						○					
	DCET	215013MR/L-F	0702005MR/L-F	<0.002																			Ⓡ											
Finishing		21502MR/L-F	070201MR/L-F	<0.004																			●											
Sharp Edge		21505MR/L-F	070202MR/L-F	<0.008																			●											
NEW		2151MR/L-F	070204MR/L-F	<0.016																			●											
	DCET	325013MR/L-F	11T3005MR/L-F	<0.002																			Ⓡ											
		32502MR/L-F	11T301MR/L-F	<0.004																			●											
		32505MR/L-F	11T302MR/L-F	<0.008																			●											
		3251MR/L-F	11T304MR/L-F	<0.016																			●											
	DCGT	21501R/L-F	0702003R/L-F	0.001																							○					○		
		21502R/L-F	070201R/L-F	0.004		○		○																			Ⓛ					○		
		21505R/L-F	070202R/L-F	0.008		○		○																			○					○		
		2151R/L-F	070204R/L-F	1/64		○		○																			Ⓡ					○		
	DCGT	32501R/L-F	11T3003R/L-F	0.001																							○					Ⓡ		
Finishing		32502R/L-F	11T301R/L-F	0.004		○																												
		32505R/L-F	11T302R/L-F	0.008		○		○																			○					○		
		3251R/L-F	11T304R/L-F	1/64		○		○																			○					○		
	DCGT	215013MR/L-F	0702005MR/L-F	<0.002																			●											
		21502MR/L-F	070201MR/L-F	<0.004																			●					○	○					
		21505MR/L-F	070202MR/L-F	<0.008																			●					○	○					
		2151MR/L-F	070204MR/L-F	<1/64																			●					○	○					
	DCGT	325013MR/L-F	11T3005MR/L-F	<0.002																			●											
		32502MR/L-F	11T301MR/L-F	<0.004																			●					○	○					
		32505MR/L-F	11T302MR/L-F	<0.008																			●					○	○					
		3251MR/L-F	11T304MR/L-F	<1/64																			●					○	○					

Reference Table Above

1

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

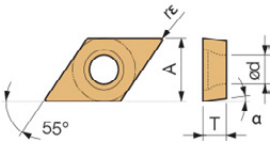
How to read this page ➔ B7

55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E24~ E27, E35, F45~ F49
DC..325	E20, E24~ E27, E35, F45~ F49

Part Number	A	T	Ød	α
			(in)	
DC_215_	1/4	3/32	0.110	7°
DC_325_	3/8	5/32	0.173	



Usage Classification

- ✖ Interruption / 1st Choice
- ❋ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

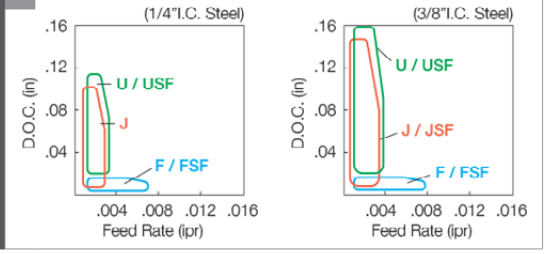
(Hardness Under 45HRC)

P	●	●	◔		●		◔											●	◔			●		◔			Free-Cutting Steel
																											Carbon/Alloy Steel
M																		◔	●			◔		◔			Stainless Steel
K																									❋		Gray Cast Iron
																											Nodular Cast Iron
N																									●		Non-ferrous Metals
S																									●		Heat-Resistant Alloys
																											Titanium Alloy
H																											Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Low Feed *Sharp Edge / Precision* *Super Fine*	DCET	21501F℄-USF	0702003F℄-USF	0.001																							●				Ⓡ		Reference Table Above	1
		21502F℄-USF	070201F℄-USF	0.004				○																			●				Ⓡ			
		21505F℄-USF	070202F℄-USF	0.008				○																			Ⓛ				Ⓡ			
	DCET	32501F℄-USF	11T3003F℄-USF	0.001				Ⓡ																			Ⓡ							
		32502F℄-USF	11T301F℄-USF	0.004				○																			●							
		32505F℄-USF	11T302F℄-USF	0.008				○																			Ⓡ							
	DCET	215013MF℄-USF	0702005MF℄-USF	<0.002																			●											
		21502MF℄-USF	070201MF℄-USF	<0.004																			●						○					
		21505MF℄-USF	070202MF℄-USF	<0.008																			●						○					
	DCET	325013MF℄-USF	11T3005MF℄-USF	<0.002																			●											
		32502MF℄-USF	11T301MF℄-USF	<0.004																			●						○					
		32505MF℄-USF	11T302MF℄-USF	<0.008																			●						○					
Low Feed *Sharp Edge* NEW	DCET	215013MF℄-U	0702005MF℄-U	<0.002																		Ⓡ												
		21502MF℄-U	070201MF℄-U	<0.004																		●												
		21505MF℄-U	070202MF℄-U	<0.008	○				○													●												
	DCET	325013MF℄-U	11T3005MF℄-U	<0.002																		Ⓡ												
		32502MF℄-U	11T301MF℄-U	<0.004																		●												
		32505MF℄-U	11T302MF℄-U	<0.008	○				○													●												
		3251MF℄-U	11T304MF℄-U	<0.016																		Ⓡ												
	DCGT	21501F℄-U	0702003F℄-U	0.001				○																			○				○			
		21502F℄-U	070201F℄-U	0.004		○	●	○																			●				Ⓡ			
		21505F℄-U	070202F℄-U	0.008		○	●	○				○	○														●				●			
	DCGT	32501F℄-U	11T3003F℄-U	0.001				○																			○				Ⓡ			
		32502F℄-U	11T301F℄-U	0.004		○		Ⓡ																			●				●			
Low Feed *Sharp Edge*		32505F℄-U	11T302F℄-U	0.008		○	●	Ⓡ				○	○														Ⓡ				Ⓡ			
	DCGT	21501MF℄-U	0702003MF℄-U	<0.001																								○	○					
		215013MF℄-U	0702005MF℄-U	<0.002																			●											
		21502MF℄-U	070201MF℄-U	<0.004																			Ⓡ					○	○					
		21505MF℄-U	070202MF℄-U	<0.008																			●					○	○					
		2151MF℄-U	070204MF℄-U	<1/64																			●					○	○					
	DCGT	325013MF℄-U	11T3005MF℄-U	<0.002																			●											
		32502MF℄-U	11T301MF℄-U	<0.004																			●					○	○					
		32505MF℄-U	11T302MF℄-U	<0.008																			●					○	○					
		3251MF℄-U	11T304MF℄-U	<1/64																			●					○	○					

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range 1



● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes.

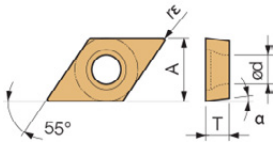
How to read this page ➡ B7

55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E24~ E27, E35, F45~ F49
DC..325	E20, E24~ E27, E35, F45~ F49

Part Number	A	T	Ød	α
			(in)	
DC_215_	1/4	3/32	0.110	7°
DC_325_	3/8	5/32	0.173	



Usage Classification

- ✱ Interruption / 1st Choice
- ✱ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

P	●	●	◔		●		◔										●	◔			◔	●	◔			Free-Cutting Steel
																						◔		◔		Carbon/Alloy Steel
M																	◔	●			◔		◔			Stainless Steel
K																								✱		Gray Cast Iron
																										Nodular Cast Iron
N																								●		Non-ferrous Metals
S																								●		Heat-Resistant Alloys
																										Titanium Alloy
H																										Hard materials

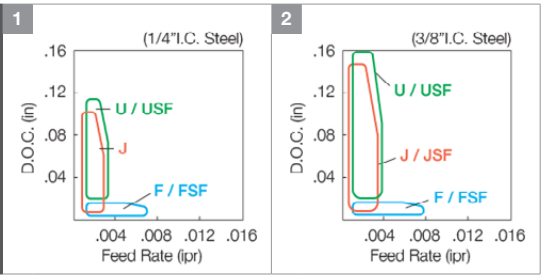
		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
	DCGT	21502E**%**-U	070201E**%**-U	0.004		○		○																			○							
		21505E**%**-U	070202E**%**-U	0.008		○	○	○			○	○															○							
		2151E**%**-U	070204E**%**-U	1/64	○	○	○	○	○			○															○							
Low Feed *Honed Edge*	DCGT	32502E**%**-U	11T301E**%**-U	0.004		○																												
		32505E**%**-U	11T302E**%**-U	0.008	○	○	Ⓡ	○	○		○	○															○							
		3251E**%**-U	11T304E**%**-U	1/64	○	○	Ⓛ	○	○		○	○															Ⓡ							
	DCGT	21502ME**%**-U	070201ME**%**-U	<0.004																									○					
		21505ME**%**-U	070202ME**%**-U	<0.008																									○					
		2151ME**%**-U	070204ME**%**-U	<1/64																									○					
	DCGT	32502ME**%**-U	11T301ME**%**-U	<0.004																									○					
		32505ME**%**-U	11T302ME**%**-U	<0.008																									○					
		3251ME**%**-U	11T304ME**%**-U	<1/64																									○					
Low Feed *Sharp Edge / Precision* *Super Fine*	DCET	32501F**%**-JSF	11T3003F**%**-JSF	0.001																							○							
		32502F**%**-JSF	11T301F**%**-JSF	0.004				○																			○							
		32505F**%**-JSF	11T302F**%**-JSF	0.008				○																			○							
	DCET	325013MF**%**-JSF	11T3005MF**%**-JSF	<0.002																				●										
		32502MF**%**-JSF	11T301MF**%**-JSF	<0.004																				●					○					
		32505MF**%**-JSF	11T302MF**%**-JSF	<0.008																				●					○					
Low Feed *Sharp Edge / Precision* NEW	DCET	215013MF**%**-J	0702005MF**%**-J	<0.002																			Ⓡ	Ⓡ										
		21502MF**%**-J	070201MF**%**-J	<0.004																			●	●										
		21505MF**%**-J	070202MF**%**-J	<0.008																			●	●										
	DCET	325013MF**%**-J	11T3005MF**%**-J	<0.002																			Ⓡ											
		32502MF**%**-J	11T301MF**%**-J	<0.004																			●											
		32505MF**%**-J	11T302MF**%**-J	<0.008																			●											
		3251MF**%**-J	11T304MF**%**-J	<0.016																			Ⓡ											
Low Feed *Sharp Edge*	DCGT	32501F**%**-J	11T3003F**%**-J	0.001																							○							
		32502F**%**-J	11T301F**%**-J	0.004		○																												
		32505F**%**-J	11T302F**%**-J	0.008		○		○																			○				○			
	DCGT	325013MF**%**-J	11T3005MF**%**-J	<0.002																				●										
		32502MF**%**-J	11T301MF**%**-J	<0.004																				●					○	○				
		32505MF**%**-J	11T302MF**%**-J	<0.008																				●					○	○				
		3251MF**%**-J	11T304MF**%**-J	<1/64																				●					○	○				
Low Feed *Honed Edge*	DCGT	32501E**%**-J	11T3003E**%**-J	0.001																							○				○			
		32502E**%**-J	11T301E**%**-J	0.004		○		Ⓡ																										
		32505E**%**-J	11T302E**%**-J	0.008		○		○																			○				Ⓡ			
		3251E**%**-J	11T304E**%**-J	1/64		○	○	○																			○				○			
	DCGT	325013ME**%**-J	11T3005ME**%**-J	<0.002																														
		32502ME**%**-J	11T301ME**%**-J	<0.004																									○					
		32505ME**%**-J	11T302ME**%**-J	<0.008																									○					
		3251ME**%**-J	11T304ME**%**-J	<1/64																									Ⓡ					

Reference Table Above

1

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



Inserts sold in 10 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

How to read this page ➜ B7

55° Diamond

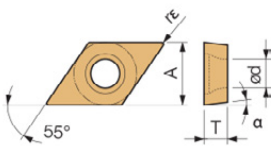
Positive Insert with Hole

(in)

Part Number	A	T	Ød	α
DC_215_	1/4	3/32	0.110	7°
DC_325_	3/8	5/32	0.173	

(in)

Part Number	A	T	Ød	α
DP_215_	1/4	3/32	0.110	11°
DP_325_	3/8	5/32	0.173	

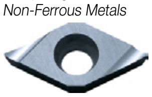
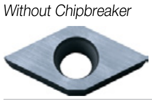
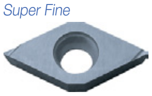
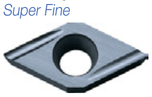


Usage Classification

- ✖ Interruption / 1st Choice
- ✲ Interruption / 2nd Choice
- ◕ Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

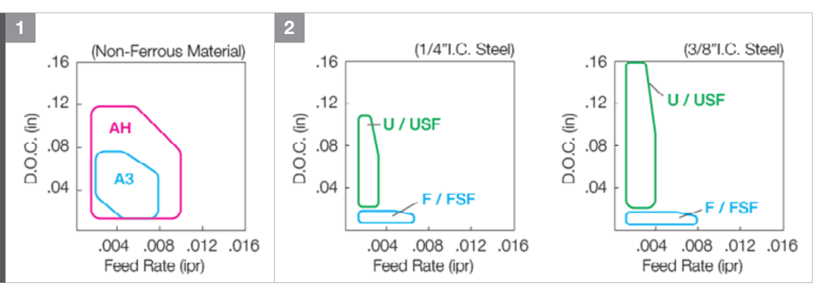
(Hardness Under 45HRC)

	TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05	
P																														Free-Cutting Steel
P																								◔		◕				Carbon/Alloy Steel
M																								◔		◕				Stainless Steel
K																												✲		Gray Cast Iron
K																														Nodular Cast Iron
N																												◕		Non-ferrous Metals
S																														Heat-Resistant Alloys
S																												◕		Titanium Alloy
H																														Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet				MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide										MEGACOAT / MEGACOAT NANO					PVD Coated Carbide				Carbide		Toolholder Page	Chipbreaker Range
					TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05		
Medium-Finishing *Sharp Edge / Non-Ferrous Metals* 	DCGT	3251AH	11T304AH	1/64																												●		Reference Table Below	1
		3252AH	11T308AH	1/32																												●			
Medium-Finishing *Sharp Edge / Non-Ferrous Metals* 	DCGT	21505R/L-A3	070202R/L-A3	0.008																												Ⓡ			
	DCGT	32505R/L-A3	11T302R/L-A3	0.008																												○			
		3251R/L-A3	11T304R/L-A3	1/64																												🅡			
Cast Iron *Without Chipbreaker* 	DCGW	21502	070201	0.004																												○			-
		21505	070202	0.008																												○			
	DCGW	32502	11T301	0.004																												○			
		32505	11T302	0.008																												○			
		3251	11T304	1/64																												○			
Finishing *Sharp Edge / Precision* *Super Fine* 	DPET	21501R/L-FSF	0702003R/L-FSF	0.001																								○						➜ E28	2
		21502R/L-FSF	070201R/L-FSF	0.004				○																				○							
		21505R/L-FSF	070202R/L-FSF	0.008				○																				○							
	DPET	32501R/L-FSF	11T3003R/L-FSF	0.001																								○							
		32502R/L-FSF	11T301R/L-FSF	0.004				○																				○							
		32505R/L-FSF	11T302R/L-FSF	0.008				○																				○							
	DPET	215013MR/L-FSF	0702005MR/L-FSF	<0.002																															
		21502MR/L-FSF	070201MR/L-FSF	<0.004																										Ⓛ					
		21505MR/L-FSF	070202MR/L-FSF	<0.008																										○					
	DPET	325013MR/L-FSF	11T3005MR/L-FSF	<0.002																															
		32502MR/L-FSF	11T301MR/L-FSF	<0.004																										○					
		32505MR/L-FSF	11T302MR/L-FSF	<0.008																										○					
Low Feed *Sharp Edge / Precision* *Super Fine* 	DPET	21501FR/L-USF	0702003FR/L-USF	0.001																								○							
		21502FR/L-USF	070201FR/L-USF	0.004				○																				○							
		21505FR/L-USF	070202FR/L-USF	0.008				○																				○							
	DPET	32501FR/L-USF	11T3003FR/L-USF	0.001																								○							
		32502FR/L-USF	11T301FR/L-USF	0.004				○																				○							
		32505FR/L-USF	11T302FR/L-USF	0.008				○																				○							
	DPET	215013MFR/L-USF	0702005MFR/L-USF	<0.002																															
		21502MFR/L-USF	070201MFR/L-USF	<0.004																										○					
		21505MFR/L-USF	070202MFR/L-USF	<0.008																										○					
	DPET	325013MFR/L-USF	11T3005MFR/L-USF	<0.002																															
		32502MFR/L-USF	11T301MFR/L-USF	<0.004																										○					
		32505MFR/L-USF	11T302MFR/L-USF	<0.008																										○					

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



Part Number	Applicable Toolholder Page
DC..215	E24~ E28, E35, F45
DC..325	E20, E24~ E28, E35, F45

● : U.S. Stock 🅡 : U.S. Stock (R-hand Only) 🅛 : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes.

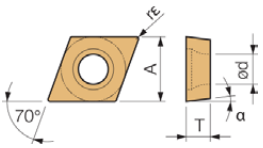
How to read this page ➡ B7

A GRADES
B INSERTS
C CBN & PCD
E TURNING
F BORING
G GROOVING
H CUT-OFF
J THREADING
L SOLID END MILLS
M MILLING
P SPARE PARTS
R TECHNICAL
T INDEX

70° Diamond

Positive Insert with Hole

Part Number	A (in)	T (in)	Ød (in)	α
JC_1109_	0.138	0.055	0.075	7°



Usage Classification

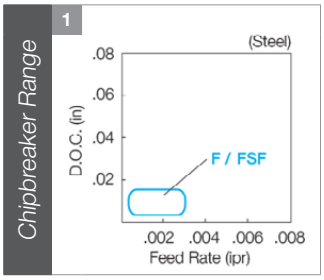
- ✱ Interruption / 1st Choice
- ❄ Interruption / 2nd Choice
- ◕ Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

P																		◕				◔		◔			Free-Cutting Steel
M																		◕				◔		◔			Carbon/Alloy Steel
K																									❄		Stainless Steel
N																											Gray Cast Iron
S																									●		Nodular Cast Iron
H																											Non-ferrous Metals
																									●		Heat-Resistant Alloys
																									●		Titanium Alloy
																											Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet				MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide										MEGACOAT / MEGACOAT NANO					PVD Coated Carbide				Carbide		Toolholder Page	Chipbreaker Range
					TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05		
Finishing Sharp Edge / Precision Super Fine	JCET	110902R/L-FSF	030101R/L-FSF	0.004				○																			○							
		110905R/L-FSF	030102R/L-FSF	0.008				Ⓡ																			○							
		11091R/L-FSF	030104R/L-FSF	1/64				○																			Ⓛ							
	JCET	110902MR/L-FSF	030101MR/L-FSF	<0.004																								○						
		110905MR/L-FSF	030102MR/L-FSF	<0.008																								○						
		11091MR/L-FSF	030104MR/L-FSF	<1/64																								○						
Finishing Sharp Edge NEW	JCET	110905MR/L-F	030102MR/L-F	0.008																			●										F50	1
		11091MR/L-F	030104MR/L-F	0.016																			Ⓡ											
Finishing Sharp Edge	JCGT	110902R/L-F	030101R/L-F	0.004				○																			Ⓡ				○			
		110905R/L-F	030102R/L-F	0.008				○																			○				○			
		11091R/L-F	030104R/L-F	1/64				○																			○				○			
	JCGT	110902MR/L-F	030101MR/L-F	<0.004																								○						
		110905MR/L-F	030102MR/L-F	<0.008																								○						
		11091MR/L-F	030104MR/L-F	<1/64																								○						

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).



KYOCERA
Inserts sold in 10 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

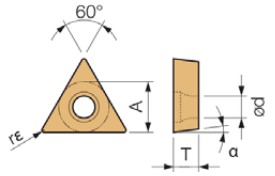
How to read this page ➔ B7

60° Triangle

Positive Insert with Hole

Part Number	A (in)	T (in)	Ød (in)	α
TB_121_	5/32	1/16	0.091	5°
TC_1815_	7/32	3/32	0.098	7°

Part Number	A (in)	T (in)	Ød (in)	α
TC_215_	1/4	3/32	0.110	7°
TC_325_	3/8	5/32	0.173	



Usage Classification

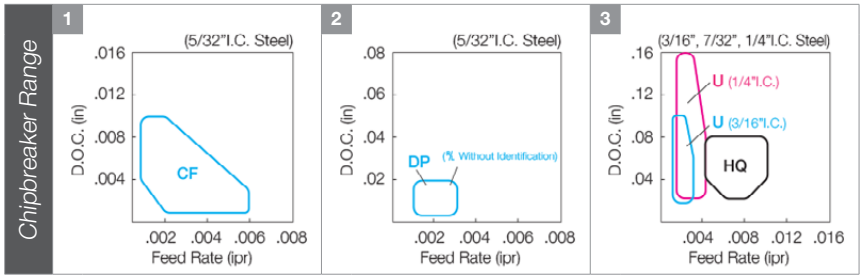
- ✱ Interruption / 1st Choice
- ✲ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

P	●	●	◔		●	●	◔		○	●	●	✱			◔	✲		●	◔				●		◔			Free-Cutting Steel / Carbon/Alloy Steel
M																		◔	●				◔		◔			Stainless Steel
K																										✲		Gray Cast Iron / Nodular Cast Iron
N																										●		Non-ferrous Metals
S																										●		Heat-Resistant Alloys / Titanium Alloy
H																												Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Minute D.O.C. *Sharp Edge*	TBGT	12105CF	060102CF	0.008																							○							
	TBGT	12102M-CF	060101M-CF	<0.004																								○	○					
		12105M-CF	060102M-CF	<0.008																								○	○					1
Minute D.O.C. *Sharp Edge / Polished*	TBGT	12102MP-CF	060101MP-CF	<0.004																			●	●					○					
		12105MP-CF	060102MP-CF	<0.008																			●	●					○					
Finishing	TBMT	12105DP	060102DP	0.008	○	○	○	○	○	○	○		○	○	○	○		●	●															
		1211DP	060104DP	1/64	○	○	○	○	○	○	○		○	○	○	○		●	●									○						F53
	TBET	121013M🅁	0601005M🅁	<0.002																			●											F55
		12102M🅁	060101M🅁	<0.004																			●											F57
		12105M🅁	060102M🅁	<0.008																			●											
		1211M🅁	060104M🅁	<1/64																			●											2
Finishing *Sharp Edge*	TBGT	12101🅁	0601003🅁	0.001																							○							
		12102🅁	060101🅁	0.004				○																			○				○			
		12105🅁	060102🅁	0.008	Ⓛ	○	Ⓛ	○	Ⓛ	Ⓛ	Ⓛ	Ⓛ															○				○			
		1211🅁	060104🅁	1/64	Ⓛ	○	Ⓛ	○	Ⓛ	Ⓛ	Ⓛ	Ⓛ															○				○			
	TBGT	121013M🅁	0601005M🅁	<0.002																														
		12102M🅁	060101M🅁	<0.004																								○	○					
		12105M🅁	060102M🅁	<0.008																								○	○					
		1211M🅁	060104M🅁	<1/64																								○	○					
Cast Iron *Without Chipbreaker*	TBGW	12105	060102	0.008				○																							○			-
		1211	060104	1/64				●																							○			
Finishing-Medium	TCMT	181505HQ	090202HQ	0.008	○	○		●	○	●	●				○	○			○															
		18151HQ	090204HQ	1/64	○	○		●	○	●	●				●	○			○															
	TCMT	21505HQ	110202HQ	0.008	○	○		●	○	●	●																						F51	
		2151HQ	110204HQ	1/64	○	○		●	○	●	●	●	○	●	●	○		●	●	○							●				●			3
		2152HQ	110208HQ	1/32	○	○		●	○	●	●	●	○	●	●	○		●	●	●											●			
	TCMT	3251HQ	16T304HQ	1/64	○			●	○		○	●	○	●	●	○		●	●												●		-	
		3252HQ	16T308HQ	1/32	○			●	○		●	●	○	●	●	○		●	●												●			

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).



● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

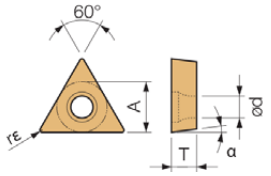
Inserts sold in 10 piece boxes.

How to read this page ➔ B7

60° Triangle

Positive Insert with Hole

Part Number	A (in)	T (in)	Ød (in)	α
TC_1515_	3/16	3/32	0.091	7°
TC_22_	7/32	3/32	0.098	



Usage Classification

- ✱ Interruption / 1st Choice
- ❋ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

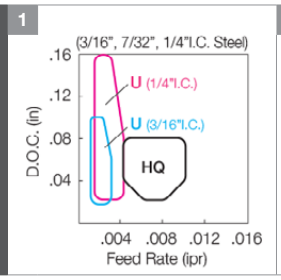
(Hardness Under 45HRC)

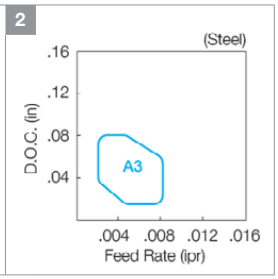
P			○																●							Free-Cutting Steel
																	◔		◔		●					Carbon/Alloy Steel
M																	●		◔		◔					Stainless Steel
K																							✱			Gray Cast Iron
																										Nodular Cast Iron
N																							●			Non-ferrous Metals
S																							●			Heat-Resistant Alloys
																										Titanium Alloy
H																										Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Low Feed *Sharp Edge / Precision* Super Fine	TCET	151501F℞-USF	0802003F℞-USF	0.001				○																			○							
		151502F℞-USF	080201F℞-USF	0.004				○																			○							
		151505F℞-USF	080202F℞-USF	0.008				○																			○							
	TCET	2201F℞-USF	1103003F℞-USF	0.001																							○							
		2202F℞-USF	110301F℞-USF	0.004				○																			○							
		2205F℞-USF	110302F℞-USF	0.008				○																			○							
	TCET	22013MF℞-USF	1103005MF℞-USF	<0.002																														
		2202MF℞-USF	110301MF℞-USF	<0.004																									○					
		2205MF℞-USF	110302MF℞-USF	<0.008																									○					
Low Feed *Sharp Edge*	TCGT	151501F℞-U	0802003F℞-U	0.001																							○							
		151502F℞-U	080201F℞-U	0.004				Ⓡ																			○					○		
		151505F℞-U	080202F℞-U	0.008			Ⓡ	○																			○					○		
	TCGT	2201F℞-U	1103003F℞-U	0.001																							○					Ⓡ		
		2202F℞-U	110301F℞-U	0.004				●																			○					○		
		2205F℞-U	110302F℞-U	0.008			Ⓡ	Ⓡ																			○					○		
	TCGT	1515013MF℞U	0802005MF℞-U	<0.002																				●										1
		151502MF℞-U	080201MF℞-U	<0.004																				●					○	○				
		151505MF℞-U	080202MF℞-U	<0.008																				●					Ⓛ	○				
	TCGT	22013MF℞-U	1103005MF℞-U	<0.002																				●									E29	
		2202MF℞-U	110301MF℞-U	<0.004																				●					○	○				
		2205MF℞-U	110302MF℞-U	<0.008																				●					○	○				
		221MF℞-U	110304MF℞-U	<1/64																				●					○	○				
Low Feed *Honed Edge*	TCGT	151505E℞-U	080202E℞-U	0.008				○																			○							
	TCGT	2202E℞-U	110301E℞-U	0.004			○	○																			○							
		2205E℞-U	110302E℞-U	0.008			○	○																			○							
		221E℞-U	110304E℞-U	1/64			○	○																			○							
	TCGT	151505ME℞-U	080202ME℞-U	<0.008																									○					
	TCGT	2202ME℞-U	110301ME℞-U	<0.004																									○					
		2205ME℞-U	110302ME℞-U	<0.008																									○					
		221ME℞-U	110304ME℞-U	<1/64																									○					
Finishing-Medium *Sharp Edge / Non-Ferrous Metals*	TCGT	2205℞-A3	110302℞-A3	0.008																												○		2
		221℞-A3	110304℞-A3	1/64																												○		

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range





Inserts sold in 10 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

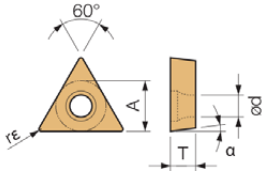
How to read this page B7

60° Triangle

Positive Insert with Hole

Part Number	A	T	Ød	α
TC_1515_	3/16	3/32	0.091	7°
TC_22_	1/4	1/8	0.110	

Part Number	A	T	Ød	α
TP_1515_	3/16	3/32	0.095	11°
TPMT1815_	7/32	3/32	0.110	
TP_1815_	7/32	3/32	0.118	
TP_22_	1/4	1/8	0.130	



Usage Classification

- ✖ Interruption / 1st Choice
- ✵ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

P	●	●	◔		●	●	◔		○	●	●	✖			◔	✵			●	◔				●		◔		◔		Free-Cutting Steel / Carbon/Alloy Steel
M																	●	●	◔	●				◔		◔	◔		✵	Stainless Steel / Gray Cast Iron
K																														Nodular Cast Iron
N																														Non-ferrous Metals
S																	○	◔								◔				Heat-Resistant Alloys / Titanium Alloy
H																														Hard materials

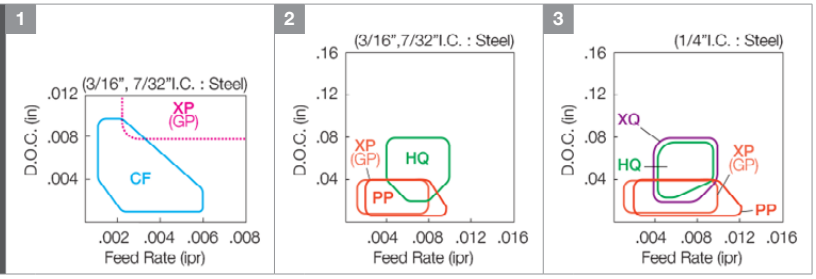
		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet				MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide										MEGACOAT / MEGACOAT NANO					PVD Coated Carbide				Carbide		Toolholder Page	Chipbreaker Range
					TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05		
Cast Iron *Without Chipbreaker*	TCGW	151502	080201	0.004																										○			
		151505	080202	0.008																										○			
	TCGW	2202	110301	0.004																										○		E29	-
		2205	110302	0.008																										○			
		221	110304	1/64																										●			
Minute D.O.C. *Sharp Edge*	TPGT	151505CF	080202CF	0.008																						○							
	TPGT	181505CF	090202CF	0.008																						○							
	TPGT	151502M-CF	080201M-CF	<0.004																							○						
		151505M-CF	080202M-CF	<0.008																							○	○					
	TPGT	181502M-CF	090201M-CF	<0.004																							○						
		181505M-CF	090202M-CF	<0.008																							○	○					
Minute D.O.C. *Sharp Edge / Polished*	TPGT	181502MP-CF	080201MP-CF	<0.004																			●	●						○			
		181505MP-CF	080202MP-CF	<0.008																			●	●						○			
	TPGT	181502MP-CF	090201MP-CF	<0.004																			●	●						○			
		181505MP-CF	090202MP-CF	<0.008																			●	●						○			
Finishing NEW	TPMT	181505PP	090202PP	0.008	●	○	○		●	○	○		○	○	○	○							○	○									
		18151PP	090204PP	1/64	●	○	○		●	○	○		○	●	●	○							○	○									
	TPMT	2205PP	110302PP	0.008	●	○	○		●	○	○		○	○	○	○							○	○									
		221PP	110304PP	1/64	●	○	○		●	○	○		○	●	●	○							○	○									
		222PP	110308PP	1/32	●	○	○		●	○	○		○	●	●	○							○	○									
Finishing	TPMT	181505GP	090202GP	0.008		○	○	○		●	●	○											●					●		○			
		18151GP	090204GP	1/64		○	●	○		●	●	○	○	○	○	○		●	●				●					●		○			
	TPMT	221GP	110304GP	1/64		○	●	●		●	●	○	○	○	○	○		●	●				●					●		○			
		222GP	110308GP	1/32		○	○	●		●	●	○	○	○	○	○		●	●				●					●		○			
Finishing-Medium	TPMT	181505HQ	090202HQ	0.008	○	○	○		○	●	●	○	○	○	○	○		●	●				●					○		○			
		18151HQ	090204HQ	1/64	○	○	●	●	○	●	●	○	○	●	●	○		●	●	●	●	●	●					○		○	●		
	TPMT	2205HQ	110302HQ	0.008	●	○	○	○	●	●	●		○	○	○	○		●	●				●					●		○			
		221HQ	110304HQ	1/64	●	○	●	●	●	●	○	○	●	●	○			●	●	●	●	●	●					●		○	●		
		222HQ	110308HQ	1/32	●	○	●	●	●	●	○	○	●	●	○			●	●	●	●	●	●					●		○	●		
Finishing *Low Carbon Steel*	TPMT	18151XP	090204XP	1/64	●	○	○		●	●	●	○	○	●	●	○		●	●				●					●		○			
	TPMT	221XP	110304XP	1/64	●	○	○		●	●	●	○	○	●	●	○		●	●				●					●		○			
		222XP	110308XP	1/32	●	○	○		●	●	●	○	○	●	●	○		●	●				●					●		○			

Reference Table Below

1

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



Part Number	Applicable Toolholder Page
TP_1515_	E29, F53~ F57
TP_1815_	F53~ F57
TP_22_	E29, F49~ F53~ F57

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes.

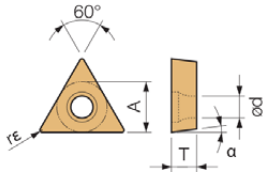
How to read this page ➡ B7

60° Triangle

Positive Insert with Hole

Part Number	A (in)	T (in)	Ød (in)	α
TP_1515_	3/16	3/32	0.095	11°
TP_1815_	7/32	3/32	0.118	

Part Number	A (in)	T (in)	Ød (in)	α
TP_215	1/4	3/32	0.138	11°
TP_22_	1/4	1/8	0.130	



Usage Classification

- ✱ Interruption / 1st Choice
- ✲ Interruption / 2nd Choice
- ◕ Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

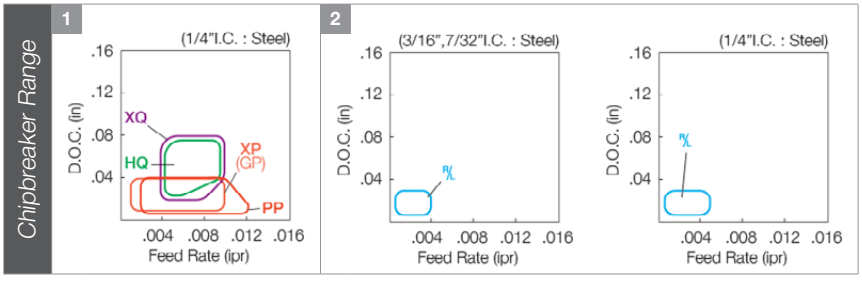
(Hardness Under 45HRC)

P	◕	●	◔		◕	●	◔		○	●	◕	✱			◔			◕					◕				Free-Cutting Steel
																								◔			Carbon/Alloy Steel
M																		◔				◔		◔			Stainless Steel
K																									✲		Gray Cast Iron
																											Nodular Cast Iron
N																									◕		Non-ferrous Metals
S																									◕		Heat-Resistant Alloys
																											Titanium Alloy
H																											Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet				MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide								MEGACOAT / MEGACOAT NANO					PVD Coated Carbide				Carbide		Toolholder Page	Chipbreaker Range
					TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05		
Finishing-Medium *Low Carbon Steel*	TPMT	221XQ	110304XQ	1/64	○	○	○		○	●	●	○	○	●	●	○		●	●															
		222XQ	110308XQ	1/32	○	○	○		○	●	●	○	○	●	●	○		●	●															1
	TPGH	151502R/L	080201R/L	0.004				○															●					○			○			
		151505R/L	080202R/L	0.008	○	Ⓛ	●	Ⓛ	○	Ⓛ	○	Ⓛ											●					○			○			
		15151R/L	080204R/L	1/64	○	Ⓛ	Ⓡ	Ⓛ	○	Ⓛ	○	Ⓛ											●					○			○			
	TPGH	181502R/L	090201R/L	0.004				○															●					○			○			
		181505R/L	090202R/L	0.008	○	Ⓛ	●	●	○	Ⓛ	○	Ⓛ											●					○			○			
		18151R/L	090204R/L	1/64	○	Ⓛ	●	Ⓛ	○	Ⓛ	○	Ⓛ											●					Ⓛ			○			
	TPGH	21505R/L	110202R/L	0.008		Ⓛ		○				Ⓛ											●					○			○			
		2151R/L	110204R/L	1/64		Ⓛ		○				Ⓛ											●					Ⓛ			○			
Finishing	TPGH	2205R/L	110302R/L	0.008	○	Ⓛ	●	●	○	Ⓛ	○	Ⓛ											●					○			○			
		221R/L	110304R/L	1/64	○	Ⓛ	●	●	○	Ⓛ	○	Ⓛ											●					Ⓡ			○			
		222R/L	110308R/L	1/32	Ⓛ	○		○	Ⓛ		Ⓛ	Ⓛ											●					○			○			2
	TPGH	151502MR/L	080201MR/L	<0.004																									○	○				
		151505MR/L	080202MR/L	<0.008																									○	○				
		15151MR/L	080204MR/L	<1/64																									○	○				
	TPGH	181502MR/L	090201MR/L	<0.004																									○	○				
		181505MR/L	090202MR/L	<0.008																									○	○				
		18151MR/L	090204MR/L	<1/64																									○	○				
	TPGH	2205MR/L	110302MR/L	<0.008																									○	○				
		221MR/L	110304MR/L	<1/64																									○	○				
		222MR/L	110308MR/L	<1/32																									○	○				

Reference Table Below

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).



Part Number	Applicable Toolholder Page
TP_1515_	E29, F53~ F57
TP_1815_	F53~ F57
TP_22_	E29, F53~ F57

Inserts sold in 10 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

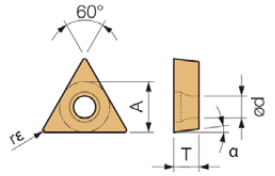
How to read this page B7

60° Triangle

Positive Insert with Hole

Part Number	A (in)	T (in)	Ød (in)	α
TP_1515_	3/16	3/32	0.095	11°
TP_1815_	7/32	3/32	0.118	

Part Number	A (in)	T (in)	Ød (in)	α
TP_215	1/4	3/32	0.138	11°
TP_22_	1/4	1/8	0.130	
TP_32_	3/8	1/8	0.177	



Usage Classification

- ✖ Interruption / 1st Choice
- ❋ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

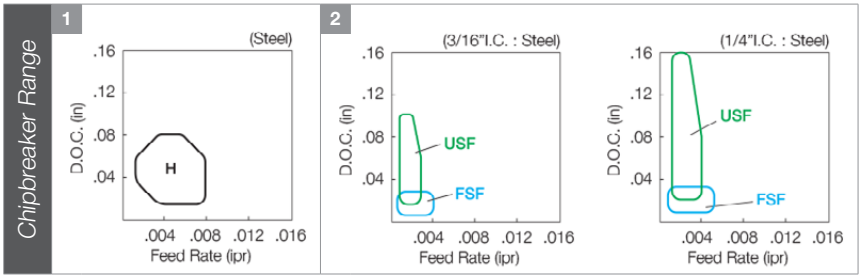
P	●	●	◔		●													●					◔		●			Free-Cutting Steel
																												Carbon/Alloy Steel
M																		◔					◔		◔			Stainless Steel
K																										✱		Gray Cast Iron
																												Nodular Cast Iron
N																										●		Non-ferrous Metals
S																										●		Heat-Resistant Alloys
																												Titanium Alloy
H																												Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Medium	TPGH	181502R/L	090201R/L-H	0.004				○															●					○			○			
		181505R/L	090202R/L-H	0.008	○	Ⓛ	●	●	○	Ⓛ	○	Ⓛ											●					○			○			
		18151R/L	090204R/L-H	1/64	○	Ⓛ	●	Ⓛ	○	Ⓛ	○	Ⓛ											●					Ⓛ			○			
	TPGH	2205R/L-H	110302R/L-H	0.008	Ⓛ	Ⓛ	Ⓛ	○	Ⓛ		Ⓛ	Ⓛ											●					○			○			1
		221R/L-H	110304R/L-H	1/64	○	Ⓛ	○	Ⓛ	○		○	Ⓛ											●					○			○			
		222R/L-H	110308R/L-H	1/32	Ⓛ	Ⓛ	Ⓛ	Ⓡ	Ⓛ		Ⓛ	Ⓛ											●					○			○			
	TPGH	2205MR/L-H	110302MR/L-H	<0.008																									○					
		221MR/L-H	110304MR/L-H	<1/64																									○					
Finishing Sharp Edge / Precision Super Fine	TPET	151501R/L-FSF	0802003R/L-FSF	0.001																								○						
		151502R/L-FSF	080201R/L-FSF	0.004				○																				○						
		151505R/L-FSF	080202R/L-FSF	0.008				○																				○						
	TPET	2201R/L-FSF	1103003R/L-FSF	0.001																								○						
		2202R/L-FSF	110301R/L-FSF	0.004				○																				○						
		2205R/L-FSF	110302R/L-FSF	0.008				○																				○						
	TPET	151505MR/L-FSF	080202MR/L-FSF	<0.008																									○					
	TPET	22013MR/L-FSF	1103005MR/L-FSF	<0.002																														
		2202MR/L-FSF	110301MR/L-FSF	<0.004																									○					
		2205MR/L-FSF	110302MR/L-FSF	<0.008																									○					
Finishing Sharp Edge / Precision Super Fine	TPET	151502FR/L-USF	080201FR/L-USF	0.004				Ⓛ																				○						
		151505FR/L-USF	080202FR/L-USF	0.008				○																				○						
	TPET	2201FR/L-USF	1103003FR/L-USF	0.001																								○						
		2202FR/L-USF	110301FR/L-USF	0.004				○																				○						
		2205FR/L-USF	110302FR/L-USF	0.008				○																				○						
	TPET	151505MFR/L-USF	080202MFR/L-USF	<0.008																									○					
	TPET	22013MFR/L-USF	1103005MFR/L-USF	<0.002																														
		2202MFR/L-USF	110301MFR/L-USF	<0.004																									○					
		2205MFR/L-USF	110302MFR/L-USF	<0.008																									○					
Cast Iron Without Chipbreaker	TPGB	151505	080202	0.008			○	●																							○			
		15151	080204	1/64	○		●	●	○		●																				○			
		15152	080208	1/32				○																										
	TPGB	181505	090202	0.008				●																							○			
		18151	090204	1/64	○		●	●	○		●																				○			
	TPGB	22013	1103005	0.002																														
		2202	110301	0.004				○																										
		2205	110302	0.008	○	○	●	●	○		●																				○			
		221	110304	1/64	○	○	●	●	○		●																				○			
		222	110308	1/32	○	○	●	○	○		●																				●			

Reference Table Below

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



Part Number	Applicable Toolholder Page
TP_1515_	E29, F53~ F57
TP_1815_	F53~ F57
TP_22_	E29, F53~ F57

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes.

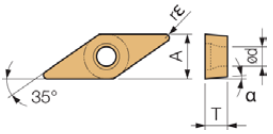
How to read this page B7

35° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
VB..22_	E30, E31, E36, F61~ F63
VB..33_	E30, E31, F61~ F63

Part Number	A	T	Ød (in)	α
VB_22_	1/4	1/8	0.110	5°
VB_33_	3/8	3/16	0.173	



Usage Classification

- ✱ Interruption / 1st Choice
- ❋ Interruption / 2nd Choice
- ◕ Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

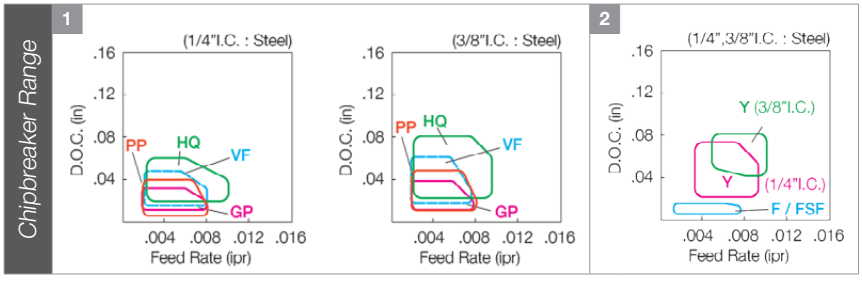
(Hardness Under 45HRC)

P	◕	●	◔		◕	●	◔		○	●	◕	✱			◔	❋			◕	◔				◔		◔		Free-Cutting Steel / Carbon/Alloy Steel
M																	●	◕	◔	◕				◔		◔	◔	Stainless Steel
K																												Gray Cast Iron / Nodular Cast Iron
N																												Non-ferrous Metals
S																										◔		Heat-Resistant Alloys / Titanium Alloy
H																												Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Finishing NEW	VBMT	2205PP	110302PP	0.008	●	○			●	○			○	●	●	○							○	○										Reference Table Above	
		221PP	110304PP	1/64	●	○			●	○			○	●	●	○							○	○											
		222PP	110308PP	1/32	●	○			●	○			○	●	●	○							○	○											
	VBMT	331PP	160404PP	1/64	●	○			●	○			○	●	●	○							○	○											
		332PP	160408PP	1/32	●	○			●	○			○	●	●	○							○	○											
		333PP	160412PP	3/64	●	○			●	○			○	●	●	○							○	○											
Finishing	VBMT	221GP	110304GP	1/64		○	●	●		●	●	○	○	○	○	○		●	●				●					●		○				
	VBMT	331GP	160404GP	1/64		○	●	●		●	●	●	○	○	○	○		●	●									●		○				
		332GP	160408GP	1/32		○	●	○		○	●	●	○	○	○	○		●	●									●		○				
Finishing	VBMT	2205VF	110302VF	0.008	●	○	○		●	●	●	○	○	○	○	○	○	○					●					●		●				1
		221VF	110304VF	1/64	●	○	○		●	●	●	○	○	●	●	○	○	●	●	○			●					●		○				
		222VF	110308VF	1/32	●	○	○		●	●	●	○	○	●	●	○	○	●	●	○			●					●		○				
	VBMT	3305VF	160402VF	0.008	●	○	○		●	●	●	○	○	○	○	○	○	○										○		●				
		331VF	160404VF	1/64	●	○	○		●	●	●	○	○	●	●	○	○	●	●	○								●		○				
		332VF	160408VF	1/32	●	○	○		●	●	●	○	○	●	●	○	○	●	●	○								●		○				
		333VF	160412VF	3/64	●	○	○		●	●	●	○	○	○	○	○	○	○	●	○								○		○				
Finishing-Medium	VBMT	221HQ	110304HQ	1/64	●	○	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●					●		○	●			
		222HQ	110308HQ	1/32	●	○	●	●	●	●	●	○	○	●	●	○		●	●	●	●	●	●					●		○	●			
	VBMT	331HQ	160404HQ	1/64	●	○	●	●	●	○	●	●	●	●	●	●		●	●	●	●	●						○		○	●			
		332HQ	160408HQ	1/32	●	○	●	●	●	●	●	●	○	●	●	○		●	●	●	●	●						○		●	●			
		333HQ	160412HQ	3/64	●	○	○		●	●	●	○	○	○	●	○		●	●	●								○		○				
Finishing Sharp Edge / Precision Super Fine	VBET	2201R/L-FSF	1103003R/L-FSF	0.001				○																				●						
		2202R/L-FSF	110301R/L-FSF	0.004				○																				●						
		2205R/L-FSF	110302R/L-FSF	0.008				○																				Ⓡ						2
	VBET	22013MR/L-FSF	1103005MR/L-FSF	<0.002																			Ⓡ										
		2202MR/L-FSF	110301MR/L-FSF	<0.004																			Ⓡ						Ⓛ				
		2205MR/L-FSF	110302MR/L-FSF	<0.008																			Ⓡ						Ⓛ				

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



KYOCERA

Inserts sold in 10 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

How to read this page ➔ B7

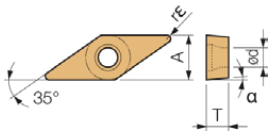
35° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
VB..22_	E30, E31, E36, F61~ F63
VB..33_	E30, E31, F61~ F63

(in)

Part Number	A	T	Ød	α
VB_22_	1/4	1/8	0.110	5°
VB_33_	3/8	3/16	0.173	



Usage Classification

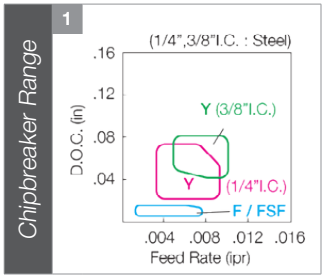
✖ Interruption / 1st Choice
❊ Interruption / 2nd Choice
● Light Interruption / 1st Choice
◔ Light Interruption / 2nd Choice
● Continuous / 1st Choice
○ Continuous / 2nd Choice
(Hardness Under 45HRC)

P	●	●	◔		●		◔											●	◔				●		◔			Free-Cutting Steel
																												Carbon/Alloy Steel
M																		◔	●				◔		◔			Stainless Steel
K																										❊		Gray Cast Iron
																												Nodular Cast Iron
N																										●		Non-ferrous Metals
S																										●		Heat-Resistant Alloys
																												Titanium Alloy
H																												Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Finishing Sharp Edge	VBET	22013M[R/L]-F	1103005M[R/L]-F	<0.002																			●											
	NEW	2202M[R/L]-F	110301M[R/L]-F	<0.004	○				○														●											
		2205M[R/L]-F	110302M[R/L]-F	<0.008	○				○														●											
Finishing Sharp Edge / Precision Super Fine	VBGT	22013M[R/L]-F	1103005M[R/L]-F	<0.002																				●										
		2202M[R/L]-F	110301M[R/L]-F	<0.004																				●					Ⓛ	○				
		2205M[R/L]-F	110302M[R/L]-F	<0.008																				●					Ⓛ	○				
	VBGT	2201[R/L]-F	1103003[R/L]-F	0.001																							●				®			
		2202[R/L]-F	110301[R/L]-F	0.004				○			○																●				○			
		2205[R/L]-F	110302[R/L]-F	0.008		○	●	○			○																●				○			
Finishing-Medium	VBET	22013M[R/L]-Y	1103005M[R/L]-Y	<0.002																			●											
	NEW	2202M[R/L]-Y	110301M[R/L]-Y	<0.004																			●											
		2205M[R/L]-Y	110302M[R/L]-Y	<0.008	○				○														●											
		221M[R/L]-Y	110304M[R/L]-Y	<1/64	○				○														●											
	VBGT	2201[R/L]-Y	1103003[R/L]-Y	0.001																							●				®			
		2202[R/L]-Y	110301[R/L]-Y	0.004				○			○																●				○			
		2205[R/L]-Y	110302[R/L]-Y	0.008		○	●	●			○																●				○			
		221[R/L]-Y	110304[R/L]-Y	1/64		○	●	Ⓡ			○																●				Ⓡ			
		222[R/L]-Y	110308[R/L]-Y	1/32				Ⓡ																			●				○			
Finishing-Medium	VBGT	3305[R/L]-Y	160402[R/L]-Y	0.008		○		○			○																●				○			
		331[R/L]-Y	160404[R/L]-Y	1/64		○	●	○			○																●				○			
		332[R/L]-Y	160408[R/L]-Y	1/32				○																			Ⓛ				Ⓛ			
	VBGT	22013M[R/L]-Y	1103005M[R/L]-Y	<0.002																			●											
		2202M[R/L]-Y	110301M[R/L]-Y	<0.004																			●					Ⓛ	○					
		2205M[R/L]-Y	110302M[R/L]-Y	<0.008																			●					Ⓛ	Ⓡ					
		221M[R/L]-Y	110304M[R/L]-Y	<1/64																			●					○	○					
		222M[R/L]-Y	110308M[R/L]-Y	< 1/32																			●					○	○					
	VBGT	3305M[R/L]-Y	160402M[R/L]-Y	<0.008																			●					○	○					
		331M[R/L]-Y	160404M[R/L]-Y	<1/64																			●					○	○					
		332M[R/L]-Y	160408M[R/L]-Y	< 1/32																			●					○	○					

Reference Table Above

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).



● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

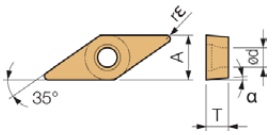
Inserts sold in 10 piece boxes.

How to read this page ➔ B7

35° Diamond

Positive Insert with Hole

Part Number	A (in)	T (in)	Ød (in)	α
VC_1515_	1/4	1/8	0.110	11°
VC_33_	3/8	3/16	0.173	



Usage Classification

- ✱ Interruption / 1st Choice
- ✱ Interruption / 2nd Choice
- ◕ Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

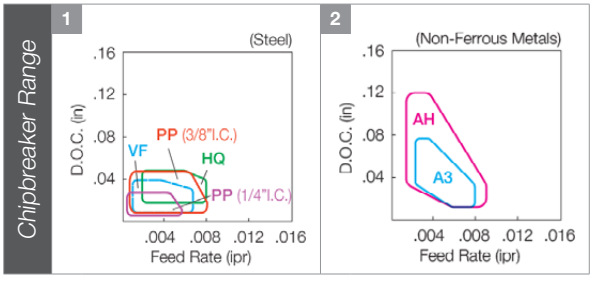
(Hardness Under 45HRC)

P	◕	●	◔		◕	●	◔		○	●	◕	✱			◔	✱			◕	◔			◔		◔			Free-Cutting Steel / Carbon/Alloy Steel
M																	●	◕	◕	◔			◔		◔	◔		Stainless Steel
K												✱							◕	◔			◔				✱	Gray Cast Iron / Nodular Cast Iron
N												◔														◕		Non-ferrous Metals
S																○	◔								◔			Heat-Resistant Alloys / Titanium Alloy
H																												Hard materials

	ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Finishing NEW	VCMT 151505PP	080202PP	0.008	●	○			●	○			○	●	●	○							○	○										E36 F58 F61 F63	1
	15151PP	080204PP	1/64	●	○			●	○			○	●	●	○							○	○											
Finishing	VCMT 151505VF	080202VF	0.008	○	○	○		○	●	●	○	○	○	○	○	○	○	○				●					○		●				E36 F58	
	15151VF	080204VF	1/64	○	○	○		○	●	●	○	○	○	○	○	○	○	○	○			●					○		○					
Finishing-Medium	VCMT 151505HQ	080202HQ	0.008	○	○	○	○	○	●	●	○	○	○	○	○		●	●				●					●		○				F61 F63	
	15151HQ	080204HQ	1/64	○	○	○	○	○	●	●	○	○	●	●	○		●	●	○	●	●	●					●		○	●				
Finishing-Medium *Sharp Edge Non-Ferrous Metals*	VCGT 331AH	160404AH	1/64																												●		E30 E31 F58 F61 F63	2
Finishing-Medium *Sharp Edge Non-Ferrous Metals*	VCGT 331℞-A3	160404℞-A3	1/64																												○			
	332℞-A3	160408℞-A3	1/32																												○			

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



Inserts sold in 10 piece boxes.

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○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

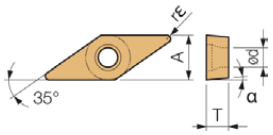
How to read this page B7

35° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
VP_1515_	E32, E33, F58
VP_22_	E21, E32, E33

Part Number	A (in)	T (in)	Ød (in)	α
VP_1515_	3/16	3/32	0.091	11°
VP_22_	1/4	1/8	0.110	



Usage Classification

- ✖ Interruption / 1st Choice
- ❋ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

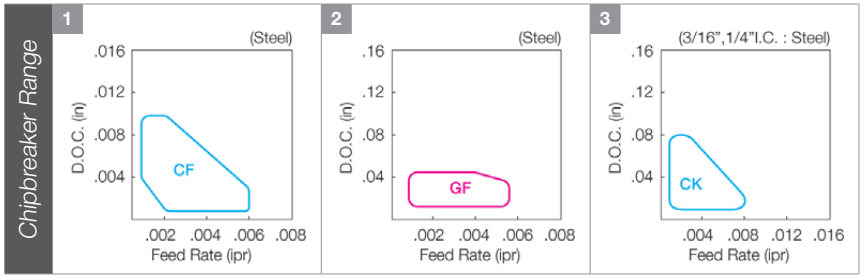
(Hardness Under 45HRC)

P																				●							Free-Cutting Steel
																● ◔	◔			◔		◔					Carbon/Alloy Steel
M																◔	●			◔		◔					Stainless Steel
K																											Gray Cast Iron
																											Nodular Cast Iron
N																											Non-ferrous Metals
S																											Heat-Resistant Alloys
																											Titanium Alloy
H																											Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Minute D.O.C. *Sharp Edge*	VPGT	2205CF	110302CF	0.008																							○						Reference Table Above	1
	VPGT	2202M-CF	110301M-CF	<0.004																								○	○					
		2205M-CF	110302M-CF	<0.008																								○	○					
Minute D.O.C. *Sharp Edge / Polished*	VPGT	2202MP-CF	110301MP-CF	<0.004																			●	●					○					
		2205MP-CF	110302MP-CF	<0.008																			●	●					○					
Finishing *Sharp Edge*	VPGT	2202MF-GF	110301MF-GF	<0.004																									○					
		2205MF-GF	110302MF-GF	<0.008																									○					2
Finishing *Sharp Edge / Polished*	VPGT	2202MFP-GF	110301MFP-GF	<0.004																			●	●					○					
		2205MFP-GF	110302MFP-GF	<0.008																			●	●					○					
Finishing *Honed Edge*	VPGT	151502CK	080201CK	0.004																							○							
		151505CK	080202CK	0.008																							●							
	VPGT	2202CK	110301CK	0.004																							●							
		2205CK	110302CK	0.008																							●							
	VPGT	151502M-CK	080201M-CK	<0.004																								○	○					
		151505M-CK	080202M-CK	<0.008																								○	○					3
	VPGT	2202M-CK	110301M-CK	<0.004																								○	○					
		2205M-CK	110302M-CK	<0.008																								○	○					
Finishing *Sharp Edge / Polished*	VPGT	151502MP-CK	080201MP-CK	<0.004																			●	●					○					
		151505MP-CK	080202MP-CK	<0.008																			●	●					○					
	VPGT	2202MP-CK	110301MP-CK	<0.004																			●	●					○					
		2205MP-CK	110302MP-CK	<0.008																			●	●					○					

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



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Inserts sold in 10 piece boxes.

How to read this page ➡ B7

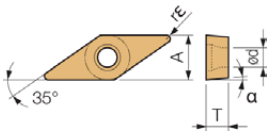
35° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
VP_1515_	E32, E33, F58
VP_22_	E21, E32, E33

(in)

Part Number	A	T	Ød	α
VP_1515_	3/16	3/32	0.091	11°
VP_22_	1/4	1/8	0.110	



Usage Classification

- ✱ Interruption / 1st Choice
- ❋ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

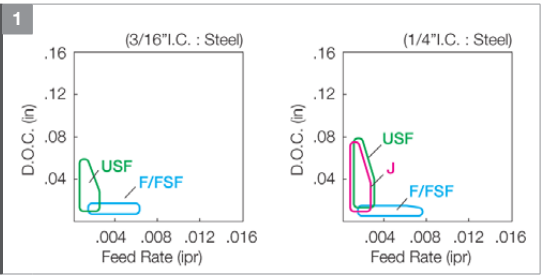
(Hardness Under 45HRC)

P																	●	◔			◔		◔			Free-Cutting Steel
P																	●	◔			◔		◔			Carbon/Alloy Steel
M																	◔	●			◔		◔			Stainless Steel
K																										Gray Cast Iron
K																										Nodular Cast Iron
N																										Non-ferrous Metals
S																										Heat-Resistant Alloys
S																										Titanium Alloy
H																										Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet				MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide								MEGACOAT / MEGACOAT NANO					PVD Coated Carbide				Carbide		Toolholder Page	Chipbreaker Range
					TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05		
Finishing Sharp Edge / Precision Super Fine	VPET	151502R-FSF	080201R-FSF	0.004				○																		○						Reference Table Above	1
	VPET	151505R-FSF	080202R-FSF	0.008				○																		○							
	VPET	2201R-FSF	1103003R-FSF	0.001																						○							
	VPET	2202R-FSF	110301R-FSF	0.004				○																		○							
	VPET	2205R-FSF	110302R-FSF	0.008				○																		○							
	VPET	151502MR-FSF	080201MR-FSF	<0.004																			●					○					
	VPET	151505MR-FSF	080202MR-FSF	<0.008																			●					○					
	VPET	22013MR-FSF	1103005MR-FSF	<0.002																			●										
	VPET	2202MR-FSF	110301MR-FSF	<0.004																			●					○					
	VPET	2205MR-FSF	110302MR-FSF	<0.008																			●					○					
Finishing Sharp Edge NEW	VPET	151502MR-F	080201MR-F	<0.004																			●										
	VPET	151505MR-F	080202MR-F	<0.008																			●										
	VPET	22013MR-F	1103005MR-F	<0.002																			Ⓡ										
	VPET	2202MR-F	110301MR-F	<0.004																			Ⓡ										
	VPET	2205MR-F	110302MR-F	<0.008																			●										
	VPET	151502FR-USF	080201FR-USF	0.004				○																		○							
	VPET	151505FR-USF	080202FR-USF	0.008				○																		○							
	VPET	151505FL-USF	080202FL-USF	0.008				●																		○							
Low Feed Sharp Edge / Precision Super Fine	VPET	2201FR-USF	1103003FR-USF	0.001																						○							
	VPET	2202FR-USF	110301FR-USF	0.004				○																		○							
	VPET	2205FR-USF	110302FR-USF	0.008				○																		●							
	VPET	2205FL-USF	110302FL-USF	0.008				○																		○							
	VPET	151502MFR-USF	080201MFR-USF	<0.004																			●					○					
	VPET	151505MFR-USF	080202MFR-USF	<0.008																			●					○					
	VPET	22013MFR-USF	1103005MFR-USF	<0.002																			●										
	VPET	2202MFR-USF	110301MFR-USF	<0.004																			●							○			
	VPET	2205MFR-USF	110302MFR-USF	<0.008																			●							○			
Low Feed Sharp Edge NEW	VPET	151502MFR-U	080201MFR-U	<0.004																			●										
	VPET	151505MFR-U	080202MFR-U	<0.008																			●										
	VPET	22013MFR-U	1103005MFR-U	<0.002																			●										
	VPET	2202MFR-U	110301MFR-U	<0.004																			●										
	VPET	2205MFR-U	110302MFR-U	<0.008																			●										
Low Feed Sharp Edge NEW	VPET	22013MFR-J	1103005MFR-J	<0.002																			Ⓡ	Ⓡ									
		2202MFR-J	110301MFR-J	<0.004																			●	●									
		2205MFR-J	110302MFR-J	<0.008																			●	●									

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range 1



Inserts sold in 10 piece boxes.

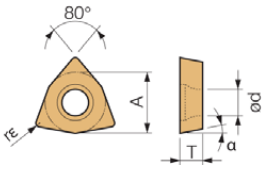
● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

How to read this page ➔ B7

80° Trigon

Positive Insert with Hole

Part Number	A (in)	T (in)	Ød (in)	α
WB_121_	5/32	1/16	0.091	5°
WB_1515_	3/16	3/32	0.091	

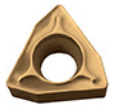
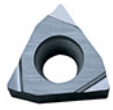


Usage Classification

- ✖ Interruption / 1st Choice
- ❋ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◡ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

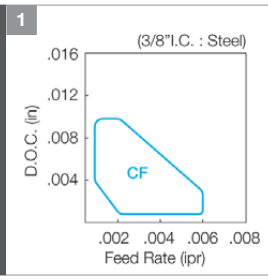
P	●	●	◡		●	●	◡		○	●	●	✖			◡				●	◡			●		◡		◡		Free-Cutting Steel
																												Carbon/Alloy Steel
M																			◡	●			◡		◡				Stainless Steel
K																										❋			Gray Cast Iron
																													Nodular Cast Iron
N																										●			Non-ferrous Metals
S																										●			Heat-Resistant Alloys
																													Titanium Alloy
H																													Hard materials

	ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Minute D.O.C. *Sharp Edge*	WBGT 12102M□-CF	060101M□-CF	<0.004																								○	○					
	12105M□-CF	060102M□-CF	<0.008																								○	○					1
Minute D.O.C. *Sharp Edge / Polished*	WBGT 12102MP□-CF	060101MP□-CF	<0.004																			●	●					○					
	12105MP□-CF	060102MP□-CF	<0.008																			●	●					○					
Finishing	WBMT 12105□-DP	060102□-DP	0.008	Ⓛ	Ⓛ	Ⓛ	○	Ⓛ	●	Ⓛ		Ⓛ	Ⓛ	Ⓛ	Ⓛ		Ⓛ	●				●					●		●					
	1211□-DP	060104□-DP	1/64	Ⓛ	Ⓛ	Ⓛ	●	Ⓛ	●	Ⓛ		Ⓛ	Ⓛ	Ⓛ	Ⓛ		Ⓛ	Ⓛ				●					●		○					
	WBMT 151505□-DP	080202□-DP	0.008	Ⓛ	Ⓛ	Ⓛ	○	Ⓛ	●	●		Ⓛ	Ⓛ	Ⓛ	Ⓛ		●	●				●					●		○					
	15151□-DP	080204□-DP	1/64	Ⓛ	Ⓛ	Ⓛ	Ⓡ	Ⓛ	●	●		Ⓛ	Ⓛ	Ⓛ	Ⓛ		●	●				●					●		○					
Finishing *Sharp Edge* NEW	WBET 121013M□-F	0601005M□-F	<0.002																			●											
	12102M□-F	060101M□-F	<0.004																			●											
	12105M□-F	060102M□-F	<0.008	Ⓛ				Ⓛ														Ⓡ											
	1211M□-F	060104M□-F	<1/64	Ⓛ				Ⓛ														●											
	WBET 151502M□-F	080201M□-F	<0.004																			●											
	151505M□-F	080202M□-F	<0.008	Ⓛ				Ⓛ														●											
	15151M□-F	080204M□-F	<1/64	Ⓛ				Ⓛ														●											
	WBGT 12101□-F	0601003□-F	0.001				Ⓛ																				○			Ⓛ			
	12102□-F	060101□-F	0.004				●																				○			○			
	12105□-F	060102□-F	0.008		○	Ⓛ	●			Ⓛ	Ⓛ																Ⓛ			Ⓡ			
	1211□-F	060104□-F	1/64		○	●	●			Ⓛ	Ⓛ																Ⓛ			Ⓛ			
Finishing *Sharp Edge*	WBGT 151501□-F	0802003□-F	0.001																								Ⓛ						
	151502□-F	080201□-F	0.004		○		○																				Ⓛ			Ⓛ			
	151505□-F	080202□-F	0.008		○	Ⓛ	Ⓛ			Ⓛ	Ⓛ																Ⓛ			Ⓛ			
	15151□-F	080204□-F	1/64		○	●	●			Ⓛ	Ⓛ																●			Ⓛ			
	WBGT 12102M□-F	060101M□-F	<0.004																									○	○				
	12105M□-F	060102M□-F	<0.008																			Ⓛ						○	○				
	1211M□-F	060104M□-F	<1/64																									○	○				
	WBGT 151502M□-F	080201M□-F	<0.004																									○	○				
	151505M□-F	080202M□-F	<0.008																									○	○				
	15151M□-F	080204M□-F	<1/64																									○	○				

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range

1



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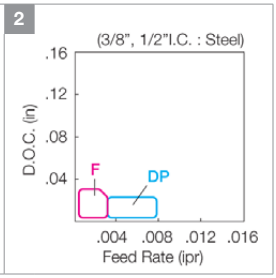


● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes.

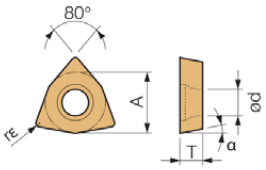
How to read this page ➡ B7

80° Trigon

Positive Insert with Hole

Part Number	A (in)	T (in)	Ød (in)	α
WB_121_	5/32	1/16	0.091	5°
WB_1515_	3/16	3/32	0.091	

Part Number	A (in)	T (in)	Ød (in)	α
WP_215_	1/4	3/32	0.110	11°
WP_321_	3/8	1/8	0.173	



Usage Classification

- ✱ Interruption / 1st Choice
- ✲ Interruption / 2nd Choice
- ◕ Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

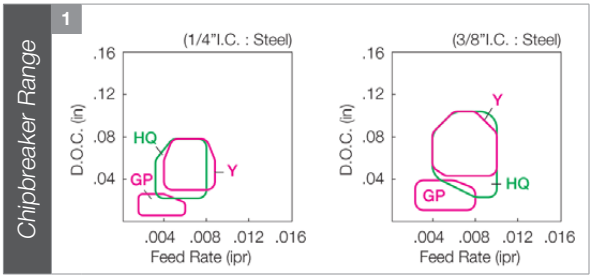
(Hardness Under 45HRC)

P	◕	●	◔		◕	●	◔		○	●	◕	✱			◔								◕		◕			Free-Cutting Steel
																							◔		◕			Carbon/Alloy Steel
M																●	◕						◔		◔	◔		Stainless Steel
K																										✲		Gray Cast Iron
																												Nodular Cast Iron
N																										◕		Non-ferrous Metals
S																									◔			Heat-Resistant Alloys
																										◕		Titanium Alloy
H																												Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet TN620	Cermet TN6010	Cermet TN6020	Cermet TN60	MEGA COAT Cermet PV720	MEGA COAT Cermet PV7010	MEGA COAT Cermet PV7025	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	MEGACOAT / MEGACOAT NANO PR1425	MEGACOAT / MEGACOAT NANO PR1225	MEGACOAT / MEGACOAT NANO PR1305	MEGACOAT / MEGACOAT NANO PR1310	MEGACOAT / MEGACOAT NANO PR1325	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Cast Iron *Without Chipbreaker*	WBGW	12105R/L	060102R/L	0.008				Ⓛ																							Ⓛ			
		1211R/L	060104R/L	1/64				Ⓛ																									➡F65	
	WBGW	151502R/L	080202R/L	0.008																													➡F66	
		15151R/L	080204R/L	1/64				Ⓛ																									➡F67	
Finishing	WPMT	2151GP	110204GP	1/64	○			○	○			○	○	○	●	○		●	●								●		○					
	WPMT	321GP	160304GP	1/64	○			○	○			●	○	○	○	○		●	●								●		○					
Finishing-Medium	WPMT	21505HQ	110202HQ	0.008	○			●	○			○	○	○	○	○		●	●								●		○					
		2151HQ	110204HQ	1/64	○	○	●	●	○	●	●	○	○	●	●	○		●	●	●	●	○					○		○	●				
	WPMT	321HQ	160304HQ	1/64	○	○	●	○	○	●	●	○	○	●	●	○		●	●	●	●	●					●		○	●			➡F65	
		322HQ	160308HQ	1/32	○	○	○	○	○	●	●	○	○	●	●	○		●	●	●	●	●					●		○	○				
Finishing-Medium	WPGT	21505R/L-Y	110202R/L-Y	0.008				Ⓛ																							Ⓛ			
		2151R/L-Y	110204R/L-Y	1/64			Ⓛ	Ⓛ				Ⓛ																	○				○		
	WPGT	321R/L-Y	160304R/L-Y	1/64			Ⓛ	○																					○				Ⓛ		
		322R/L-Y	160308R/L-Y	1/32								Ⓛ																	Ⓛ				Ⓛ		
	WPGT	2151MR/L-Y	110204MR/L-Y	<1/64																										○	○				
		321MR/L-Y	160304MR/L-Y	<1/64																										Ⓛ	Ⓡ				
Cast Iron *Without Chipbreaker*	WPGW	21505	110202	0.008																												○			
		2151	110204	1/64																												○		➡F65	
	WPGW	321	160304	1/64																												○		➡F66 ➡F67	
		322	160308	1/32																												○			

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



KYOCERA

Inserts sold in 10 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

How to read this page ➔ B7

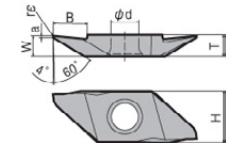
Back Turning
Turning Inserts

Usage Classification

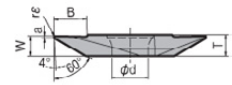
✱ Interruption / 1st Choice
❄ Interruption / 2nd Choice
◕ Light Interruption / 1st Choice
◔ Light Interruption / 2nd Choice
● Continuous / 1st Choice
○ Continuous / 2nd Choice
(Hardness Under 45HRC)

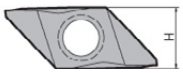
		MEGACOAT NANO		PVD Coated Carbide	Carbide
P	Free-Cutting Steel				
	Carbon Steel / Alloy Steel	◔	◕	◔	
M	Stainless Steel	◕	◔	◔	
K	Gray Cast Iron				◕
	Nodular Cast Iron				◔
N	Non-ferrous Metals				◕
S	Heat-Resistant Alloys	◕	◔	◔	
	Titanium Alloy				◕
H	Hard materials				

TKFB Inserts
(for KTKF Toolholders)



• Right-handed insert shown



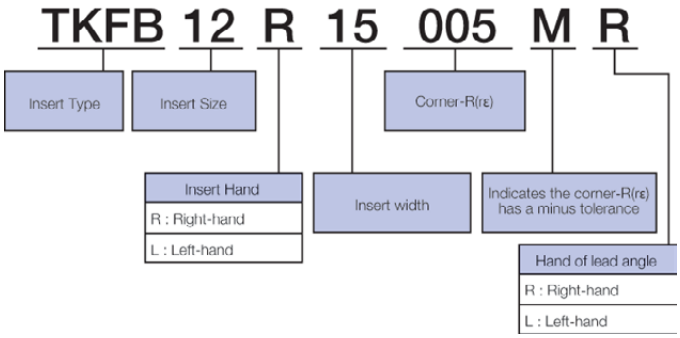


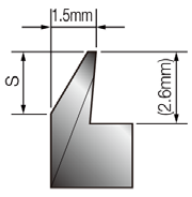
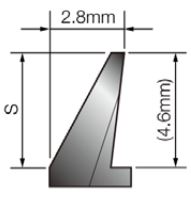
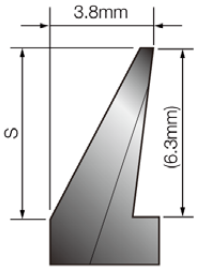
• Left-handed insert shown

	ANSI Part Number	Dimension (mm) W	a	B	Corner Radius (in) rε	T	H	Ød	PR1425	PR1225	PR1025	KW10	Toolholder Page
TKFB	12R15005M	1.5	0.25	2.6	<0.002	3.0	8.7	5.2	●	●	○	○	
	12R28005M	2.8	0.3	4.6	<0.002	3.0	8.7	5.2	●	●	○	○	
	12R28010M	2.8	0.3	4.6	<0.004	3.0	8.7	5.2	●	●	●	○	
TKFB	16R38005M	3.8	0.3	6.3	<0.002	4.0	9.5	5.2	●	●	○	○	
	16R38010M	3.8	0.3	6.3	<0.004	4.0	9.5	5.2	●	●	○	○	
TKFB	12L28005MR	2.8	0.3	4.6	<0.002	3.0	8.7	5.2		●			➔E12
	12L28010MR	2.8	0.3	4.6	<0.004	3.0	8.7	5.2		●			
TKFB	16L38005MR	3.8	0.3	6.3	<0.002	4.0	9.5	5.2		●			
	16L38010MR	3.8	0.3	6.3	<0.004	4.0	9.5	5.2		●			

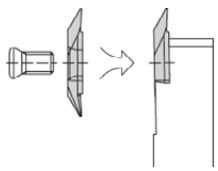
• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

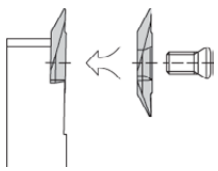
● Insert Identification System
(See tables below)



Small Depths of Cut		General Purpose		Large Depths of Cut	
					
Part Number	Cutting Edge Length (S)	Part Number	Cutting Edge Length (S)	Part Number	Cutting Edge Length (S)
TKFB12R15..	2.1mm	TKFB12R28..	4.2mm	TKFB16R38..	5.8mm
-	-	TKFB12L28..	4.4mm	TKFB16L38..	6.2mm

Tooholder	Right-hand (R)	Toolholder	Left-hand (L)
Insert	Right-hand (R)	Insert	Left-hand (L)
Lead angle	Right-hand (R)	Lead angle	Left-hand (R)





● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) ® : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes.

Back Turning

Turning Inserts

Usage Classification

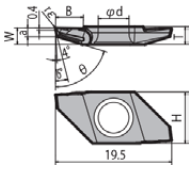
- ✠ Interruption / 1st Choice
- ✠ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

P	Free-Cutting Steel		
	Carbon Steel / Alloy Steel	◔	●
M	Stainless Steel	●	◔
K	Gray Cast Iron		
	Nodular Cast Iron		
N	Non-ferrous Metals		
S	Heat-Resistant Alloys	●	◔
	Titanium Alloy		
H	Hard materials		

TKFB Inserts (GQ Chipbreaker) NEW

(for KTKF Toolholders)

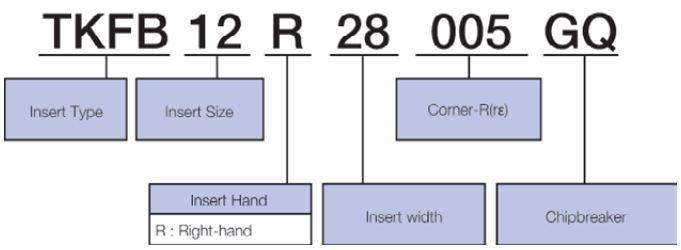


• Right-handed insert shown

ANSI Part Number		Dimension (mm) W	a	B	Corner Radius (in) rε	T	H	Ød	θ	MEGACOAT NANO PR1425	PR1225	Toolholder Page
TKFB	12R28005-GQ	2.8	1.5	4.6	0.05	3.0	8.7	5.2	74°	●	●	E12
	12R28015-GQ	2.8	1.5	4.6	0.15	3.0	8.7	5.2	74°	●	●	
TKFB	16R38005-GQ	3.8	1.8	6.3	0.05	4.0	9.5	5.2	72°	●	●	
	16R38015-GQ	3.8	1.8	6.3	0.15	4.0	9.5	5.2	72°	●	●	

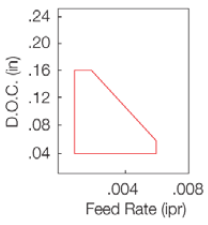
● Insert Identification System

(See tables below)

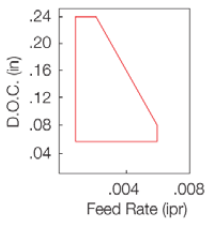


Chipbreaker Range

TKFB12R28...GQ



TKFB16R38...GQ



● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Back Turning

Turning Inserts

Usage Classification

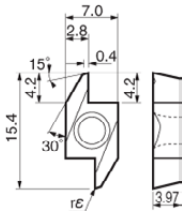
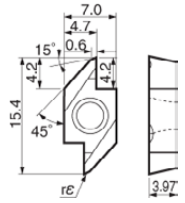
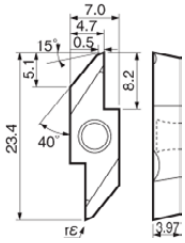
- ✱ Interruption / 1st Choice
- ✲ Interruption / 2nd Choice
- ◕ Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

P					◕			Free-Cutting Steel
		◕	◔	◔		◔		Carbon Steel / Alloy Steel
M		◔	◕	◔		◔		Stainless Steel
K							◕	Gray Cast Iron
							◔	Nodular Cast Iron
N							◕	Non-ferrous Metals
S		◔	◕					Heat-Resistant Alloys
							◕	Titanium Alloy
H								Hard materials

AABS / SABS / AABW / SABW Inserts

(for AABS / SABS / AABW / SABW Toolholders)

	ANSI Part Number	Corner Radius (in) rε	Cermet TC60	MEGACOAT NANO PR1425	MEGACOAT NANO PR1225	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	Carbide KW10	Toolholder Page
 	ABS 15R4005	0.002	●			●			●	E17
	15R4015	0.006	●			●			●	
	ABS 15R4005M	<0.002		●	●		○	○		
	15R4015M	<0.006		●	●		○			
 	ABW 15R4005	0.002	●			●			○	E18
	15R4015	0.006	●			●			●	
	ABW 15R4005M	<0.002		●	●		○	○		
	15R4015M	<0.006		●	●		○	●		
 	ABW 23R5005	0.002	●			●			●	E19
	23R5015	0.006	●			●			●	
	ABW 23R5005M	<0.002		●	●		○	○		
	23R5015M	<0.006		●	●		○	●		

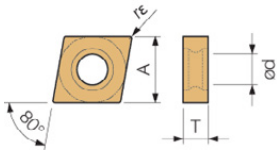
• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

How to read this page ➡ B7

Double-Sided
Turning Inserts

(in)

Part Number	A	T	Ød
CN_242_	0.295	1/8	0.142



Usage Classification

✖ Interruption / 1st Choice
❋ Interruption / 2nd Choice
● Light Interruption / 1st Choice
◔ Light Interruption / 2nd Choice
● Continuous / 1st Choice
○ Continuous / 2nd Choice
(Hardness Under 45HRC)

P																						●						Free-Cutting Steel
P																		◔	●					◔				Carbon/Alloy Steel
M																		●	◔					◔				Stainless Steel
K																												Gray Cast Iron
K																												Nodular Cast Iron
N																												Non-ferrous Metals
S																												Heat-Resistant Alloys
S																												Titanium Alloy
H																												Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet				MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide								MEGACOAT / MEGACOAT NANO					PVD Coated Carbide			Carbide		Toolholder Page	Chipbreaker Range
					TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05		
Finishing-Medium *Sharp Edge*	CNGU	24202MF-SK	070301MF-SK	<0.004																								●					
		24205MF-SK	070302MF-SK	<0.008																								●					
Finishing-Medium *Sharp Edge / Polished*	CNGU	24202MFP-SK	070301MFP-SK	<0.004																		●	●										
		24205MFP-SK	070302MFP-SK	<0.008																		●	●										
Medium-Roughing *Honed Edge*	CNMU	24205E-GK	070302E-GK	0.008																			●						●				
		2421E-GK	070304E-GK	1/64																		●	●					●	●				
Finishing *Sharp Edge*	CNGU	242013MF□-F	0703005MF□-F	<0.002																			Ⓡ					Ⓡ	Ⓡ				
		24202MF□-F	070301MF□-F	<0.004																		Ⓡ	Ⓡ					Ⓡ	Ⓡ				
		24205MF□-F	070302MF□-F	<0.008																		Ⓡ	Ⓡ					Ⓡ	Ⓡ				
		2421MF□-F	070304MF□-F	<1/64																		Ⓡ	Ⓡ					Ⓡ	Ⓡ				
Low Feed *Sharp Edge*	CNGU	242013MF□-U	0703005MF□-U	<0.002																			Ⓡ					Ⓡ	Ⓡ				
		24202MF□-U	070301MF□-U	<0.004																		Ⓡ	Ⓡ					Ⓡ	Ⓡ				
		24205MF□-U	070302MF□-U	<0.008																		Ⓡ	Ⓡ					Ⓡ	Ⓡ				
		2421MF□-U	070304MF□-U	<1/64																		Ⓡ	Ⓡ					Ⓡ	Ⓡ				
Low Feed *Honed Edge*	CNGU	24202ME□-U	070301ME□-U	<0.004																								Ⓡ	Ⓡ				
		24205ME□-U	070302ME□-U	<0.008																								Ⓡ	Ⓡ				
		2421ME□-U	070304ME□-U	<1/64																								Ⓡ	Ⓡ				

➡ E38

➡ B40
1

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

● Double-Sided Small Tool Identification System

CNGU070301M F P - SK

- Corner-R(rε) for Minus Tolerance
- Sharp Edge
- Insert Surface Polished Inserts
- Chipbreakers

CNGU070301M F R - U

- Corner-R(rε) for Minus Tolerance
- Sharp Edge
- Insert Hand
- Chipbreakers

CNGU070301M E R - U

- Corner-R(rε) for Minus Tolerance
- Honed Edge
- Insert Hand
- Chipbreakers

● When minus tolerance is specified for corner-R (rε)

• If a minus tolerance is specified for the corner-R(rε) as shown in the Fig.1, using an insert with corner-R = 0.008" may result in larger radius than specified.

• Use an insert whose corner-R(rε) has a minus tolerance.

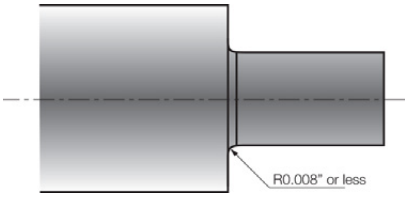


Fig.1 Example of a specified corner-R in drawing

Inserts sold in 10 piece boxes.

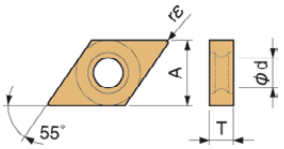
● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

How to read this page ➔ B7

Double-Sided
Turning Inserts

(in)

Part Number	A	T	Ød
DN_222_	0.276	1/8	0.142



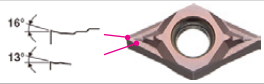
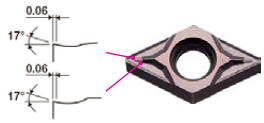
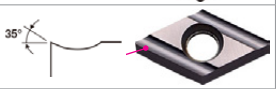
Usage Classification
- ✱ Interruption / 1st Choice
- ❋ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

P																						●	◔				Free-Cutting Steel
M																						◔	●		◔		Carbon/Alloy Steel
K																						●	◔		◔		Stainless Steel
N																											Gray Cast Iron
S																											Nodular Cast Iron
H																											Non-ferrous Metals
																											Heat-Resistant Alloys
																											Titanium Alloy
																											Hard materials

		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet				MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide								MEGACOAT / MEGACOAT NANO					PVD Coated Carbide				Carbide		Toolholder Page	Chipbreaker Range
					TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05		
Finishing-Medium Sharp Edge	DNGU	22202MF-SK	080301MF-SK	<0.004																								●				E38	B40 2
		22205MF-SK	080302MF-SK	<0.008																								●					
		2221MF-SK	080304MF-SK	<1/64																								●					
Finishing-Medium Sharp Edge / Polished	DNGU	22202MFP-SK	080301MFP-SK	<0.004																		●	●										
		22205MFP-SK	080302MFP-SK	<0.008																		●	●										
		2221MFP-SK	080304MFP-SK	<1/64																		●	●										
Medium-Roughing Honed Edge	DNMU	22205E-GK	080302E-GK	0.008																		●	●						●				
		2221E-GK	080304E-GK	1/64																		●	●					●	●				
Finishing Sharp Edge	DNGU	222013MF®-F	0803005MF®-F	<0.002																			Ⓡ					Ⓡ	Ⓡ				
		22202MF®-F	080301MF®-F	<0.004																		Ⓡ	Ⓡ					Ⓡ	Ⓡ				
		22205MF®-F	080302MF®-F	<0.008																		Ⓡ	Ⓡ					Ⓡ	Ⓡ				
		2221MF®-F	080304MF®-F	<1/64																		Ⓡ	Ⓡ					Ⓡ	Ⓡ				
Low Feed Sharp Edge	DNGU	222013MF®-U	0803005MF®-U	<0.002																			Ⓡ					Ⓡ	Ⓡ				
		22202MF®-U	080301MF®-U	<0.004																		Ⓡ	Ⓡ					Ⓡ	Ⓡ				
		22205MF®-U	080302MF®-U	<0.008																		Ⓡ	Ⓡ					Ⓡ	Ⓡ				
		2221MF®-U	080304MF®-U	<1/64																		Ⓡ	Ⓡ					Ⓡ	Ⓡ				
Low Feed Honed Edge	DNGU	22202ME®-U	080301ME®-U	<0.004																								Ⓡ	Ⓡ				
		22205ME®-U	080302ME®-U	<0.008																								Ⓡ	Ⓡ				
		2221ME®-U	080304ME®-U	<1/64																								Ⓡ	Ⓡ				

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Cutting Range	Name	Cross-Section	Advantages
Finishing-Medium	**SK**		A low cutting force chipbreaker designed for chip control in steel and stainless steel. Cutting performance is similar to comparably sized positive inserts.
Medium-Roughing	**GK**		Chipbreaker "dot" and pocket design provide chip control at multiple depths of cut and feed rates.
Finishing	**F**		Controlled chip evacuation direction with low cutting forces.
Low Feed	**U**		Good chip control at low feed rates and varied depths of cut with low cutting forces.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

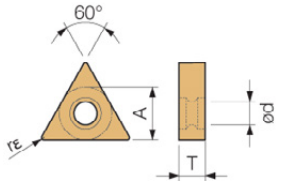
Inserts sold in 10 piece boxes.

How to read this page B7

Double-Sided
Turning Inserts

(in)

Part Number	A	T	Ød
TN_182_	0.219	1/8	0.118



Usage Classification
- ✱ Interruption / 1st Choice
- ✲ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

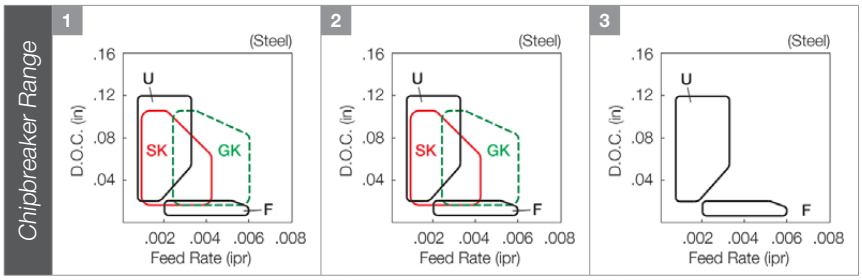
(Hardness Under 45HRC)

				ANSI Part Number	ISO Part Number	Corner Radius (in) rε	TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05	Toolholder Page	Chipbreaker Range
							Cermet				MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide										MEGACOAT / MEGACOAT NANO					PVD Coated Carbide			Carbide				
P																									●						●					Free-Cutting Steel	
M																									◔	●					◔					Carbon/Alloy Steel	
K																									●	◔					◔					Stainless Steel	
N																																				Gray Cast Iron	
S																																				Nodular Cast Iron	
H																																				Non-ferrous Metals	
																																				Heat-Resistant Alloys	
																																				Titanium Alloy	
																																				Hard materials	
Finishing *Sharp Edge*	TNGU	182013MF□-F	0903005MF□-F	<0.002																					Ⓡ					Ⓡ	Ⓡ					
		18202MF□-F	090301MF□-F	<0.004																					Ⓡ	Ⓡ					Ⓡ	Ⓡ					
		18205MF□-F	090302MF□-F	<0.008																					Ⓡ	Ⓡ					Ⓡ	Ⓡ					
		1821MF□-F	090304MF□-F	<1/64																					Ⓡ	Ⓡ					Ⓡ	Ⓡ					
Low Feed *Sharp Edge*	TNGU	182013MF□-U	0903005MF□-U	<0.002																						Ⓡ					Ⓡ	Ⓡ					
		18202MF□-U	090301MF□-U	<0.004																					Ⓡ	Ⓡ					Ⓡ	Ⓡ					
		18205MF□-U	090302MF□-U	<0.008																					Ⓡ	Ⓡ					Ⓡ	Ⓡ					
		1821MF□-U	090304MF□-U	<1/64																					Ⓡ	Ⓡ					Ⓡ	Ⓡ					
Low Feed *Honed Edge*	TNGU	18202ME□-U	090301ME□-U	<0.004																											Ⓡ	Ⓡ					
		18205ME□-U	090302ME□-U	<0.008																											Ⓡ	Ⓡ					
		1821ME□-U	090304ME□-U	<1/64																											Ⓡ	Ⓡ					

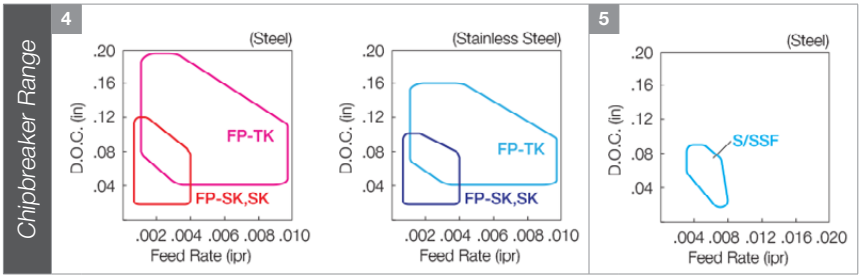
E39 3

• Insert whose corner R(rε) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (rε).

Chipbreaker Range



Chipbreaker Range



Inserts sold in 10 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

How to read this page ➔ B7

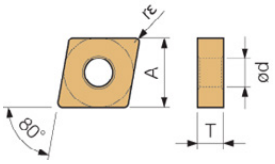
80° / 55° / 60° Inserts

Negative Insert with Hole

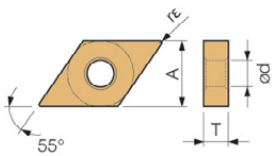
(in)

Part Number	A	T	Ød
CN_43_	1/2	3/16	0.203
DN_43_	1/2	3/16	0.203
TN_33_	3/8	3/16	0.150

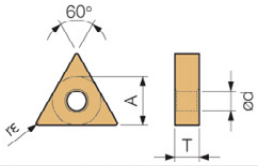
80° Diamond / Negative with Hole



55° Diamond / Negative with Hole



60° Triangle / Negative with Hole



Usage Classification

- ✖ Interruption / 1st Choice
- ✲ Interruption / 2nd Choice
- ◕ Light Interruption / 1st Choice
- ◔ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

(Hardness Under 45HRC)

P	◕	●	◔		◕	●	◔										◔	◕				◔					Free-Cutting Steel / Carbon/Alloy Steel
M																	◕	◔				◔			◔		Stainless Steel
K																									✲		Gray Cast Iron / Nodular Cast Iron
N																									✖		Non-ferrous Metals
S																									◔		Heat-Resistant Alloys / Titanium Alloy
H																											Hard materials

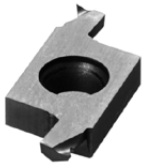
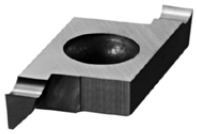
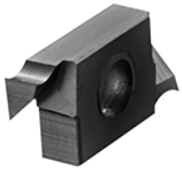
		ANSI Part Number	ISO Part Number	Corner Radius (in) rε	Cermet				MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide									MEGACOAT / MEGACOAT NANO				PVD Coated Carbide				Carbide		Toolholder Page	Chipbreaker Range
					TN620	TN6010	TN6020	TN60	PV720	PV7010	PV7025	PV90	CA510	CA515	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	PR1425	PR1225	PR1305	PR1310	PR1325	PR930	PR1005	PR1025	PR1125	KW10	SW05		
Finishing-Medium Sharp Edge / Polished	CNGG	4305MFP-SK	120402MFP-SK	<0.008																		●	●										E40	B40 4
NEW		431MFP-SK	120404MFP-SK	<1/64																		●	●											
Medium-Roughing Sharp Edge / Polished	CNGG	431FP-TK	120404FP-TK	1/64																		●	●										E40	
		432FP-TK	120408FP-TK	1/32																		●	●											
Medium-Roughing Sharp Edge / Polished	DNGG	431FP-TK	150404FP-TK	1/64																		●	●										-	
		432FP-TK	150408FP-TK	1/32																		●	●											
Finishing-Medium Sharp Edge / Polished	TNGG	3303MFP-SK	160401MFP-SK	<0.004																														
NEW		3305MFP-SK	160402MFP-SK	<0.008																		●	●										E41	
		331MFP-SK	160404MFP-SK	<1/64																		●	●											
Medium-Roughing Sharp Edge / Polished	TNGG	331FP-TK	160404FP-TK	1/64																		●	●										E41	
		332FP-TK	160408FP-TK	1/32																		●	●											
Finishing Surface-Finish Oriented	TNGG	3302R/L-S	160401R/L-S	0.004	○		○		○		○																							
		3305R/L-S	160402R/L-S	0.008	○	○	○	○	○	○	○	○										●					○			○				
		331R/L-S	160404R/L-S	1/64	○	○	○	Ⓡ	○	○	○	○										●					●			●				
		332R/L-S	160408R/L-S	1/32	○	○	○	○	○	○	○											●					○			●				B40 5
Finishing Sharp Edge / Precision Super Fine	TNEG	3305R/L-SSF	160402R/L-SSF	0.008	○	○	Ⓡ	○	○		○																○						-	
		331R/L-SSF	160404R/L-SSF	1/64	○	○	○	○	○		○																○							

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Inserts sold in 10 piece boxes.

Micro Boring

Twin Bars

Micro Boring	Micro Face Grooving
TWB Twin-Bars ➔ **F36**	TWFG Twin-Bars ➔ **G48**
	
TWBT Twin-Bars ➔ **F37**	TWFGT Twin-Bars ➔ **G49**
	

EZ Bars / Swiss IQ Bars / Micro-Bars

Micro Boring		Micro Back Boring
EZB EZ Bar ➔ **F14**	**EZVB** EZ Bar ➔ **F19**	-
NEW 	NEW 	-
VNB-S/VNB Swiss IQ Bar ➔ **F30**	**VNBX-S** Swiss IQ Bar ➔ **F34**	**VNBT** Swiss IQ Bar ➔ **F31**
		
HPB Double-Sided Micro-Bar ➔ **F28**	-	**HPBT** Double-Sided Micro-Bar ➔ **F28**
	-	

Solid Micro-Bars (Grooving / Threading)

Micro Grooving	Micro Face Grooving	Micro Back Boring
EZG EZ Bars ➔ **G34**	**EZFG** EZ Bars ➔ **G45**	**EZT** EZ Bars ➔ **J10**
NEW 	NEW 	NEW 
VNG Swiss IQ Bar ➔ **G37**	**VNFG** Swiss IQ Bar ➔ **G47**	**VNT** Swiss IQ Bar ➔ **J15**
		
HPG Double-Sided Micro-Bar ➔ **G36**	**HPFG** Double-Sided Micro-Bar ➔ **G47**	**HPT** Double-Sided Micro-Bar ➔ **J14**
		

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CBN & PCD TOOLS

C

C1 - C21

MEGACOAT CBN

Extended Tool Life | **Improved Stability** | **High Speed Cutting**

Kyocera's new innovative CBN tools.
CBN Variation and Features Ref. Page ➡ **A15**

Various edge preparations added to the high performance MEGACOAT CBN inserts

Turning Insert Identification System

C C M W 2 15 05 T00315 ME

Refer to ➡ **B2** for "Turning Indexable Inserts Identification System"

Insert Type	Part Number	Edge Prep.	Manufacture's Option	Cutting Edge Length	No. of Edges	Re-Grinding
Positive	CPGB321T00315	T00315	No Indication	Long	1	Possible
	CCMW21505MEF	F	MEF	Short (Small Edge)	2	Not Recommended
	CCMW21505T00315ME	T00315	ME		2	
	CCMW21515S00525MES	S00525	MES		2	
	CCMW21505T00315SE	T00315	SE		1	

• Re-Grinding

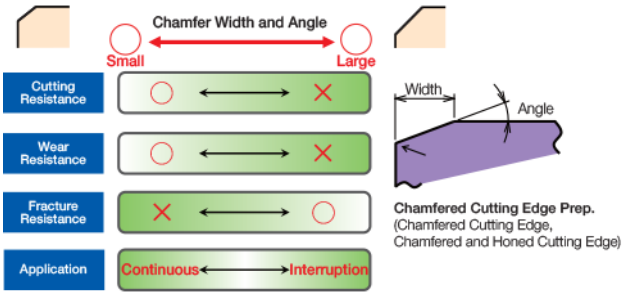
1) Regrinding is possible for inserts without any indication in manufacturer's option. Regrinding may not be available depending on the edge condition.

2) Regrinding is not recommended for inserts with manufacturer's symbol like "ME" or "SE".

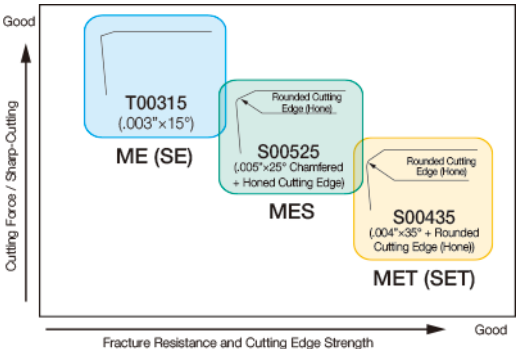
How To Identify Edge Preparation

Edge Prep.				
Symbol	Cutting Edge Spec.	Example		Shape
F	Sharp Edge	F	Sharp Edge	Sharp Edge
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed	Rounded Cutting Edge (Hone)
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge	0.005" 15°
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered + Honed Cutting Edge	0.005" 25° Honed

Features of Chamfer Width & Angle



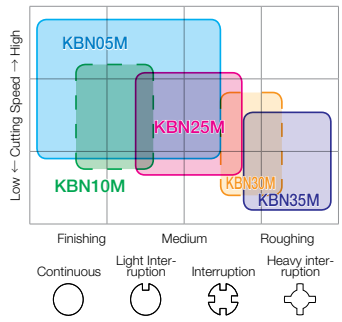
Standard Cutting Edge Prep. of Positive Inserts



Manufacturers Option	Cutting Edge Prep.		Application & Features
ME	T00315	0.003" X 15°	**Chamfered** Sharp cutting oriented, less burring
MES	T00515	0.005" X 25° + Rounded Cutting Edge (Hone)	**General Purpose**
MET	S00525	0.004" X 35° + Rounded Cutting Edge (Hone)	**Interrupted Cutting** Stable cutting oriented

Application Maps

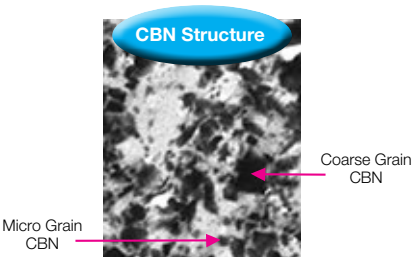
Hardened Materials

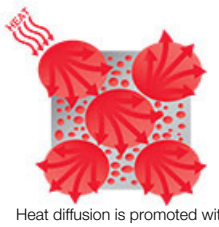


KBN05M
1st recommended grade for a wide range of applications from continuous (high speed finishing) to interrupted cutting.

Hybrid Grain Structure (KBN05M)

Mixed structure of micro grain CBN and coarse grain CBN
➡CBN possesses high hardness, toughness, and thermal resistance characteristics





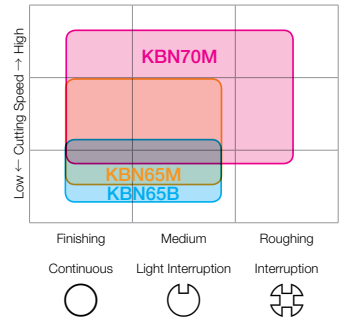
Heat diffusion is promoted with coarse grain CBN
➡High thermal conductivity

KBN25M: High stability for general cutting

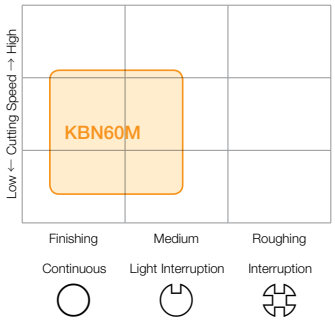
KBN30M: High stability during interrupted cutting

KBN35M: Honeycomb structure CBN Superior fracture resistance in heavy interrupted cutting

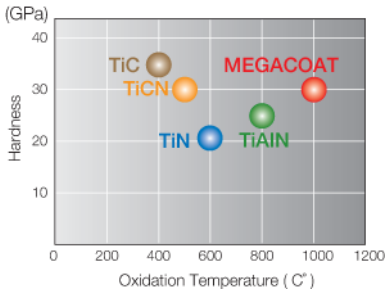
Powdered Steel



Cast Iron



PVD Layer Coating Properties



Advantages of MEGACOAT

- Long tool life and stable cutting due to superior heat-resistance and hardness
- Imrpoved crater wear resistance
- High thermal stability and surface smoothness provide excellent surface finish

Improved Stability
Extended Tool Life
High Speed Cutting

Recommended Cutting Conditions

Workpiece Material	Hardness	Applications		Recommended Insert Grade	Cutting Conditions		
					Vc (sfm)	D.O.C. (in)	f (ipr)
Hardened Steel	Over 55HRC	General Finishing	Continuous ~ Interruption	KBN05M	325~500~650	0.002~0.012~0.020	0.002~0.003~0.004
		High Efficient Stable Cutting	Light Interruption ~ Interruption	KBN25M	250~400~525	0.002~0.012~0.020	0.002~0.003~0.004
		Interruption (Small ap)	Interruption ~ Heavy Interruption	KBN35M	200~325~500	0.002~0.008~0.016	0.002~0.003~0.004
		Heavy Machining	Continuous ~ Interruption	KBN900	230~300~360	0.020~0.039~0.079	0.002~0.004~0.008
	Under 55HRC	Finishing	Continuous	※PT600M	200~260~390	0.008~0.020~0.028	0.002~0.004~0.006
Gray Cast Iron	Under 250HB	Finishing	Continuous ~ Light Interruption	KBN475	175~500~650	0.002~0.008~0.012	0.002~0.004~0.008
		Finishing	Continuous ~ Light Interruption	KBN60M	325~650~825	0.002~0.008~0.012	0.002~0.004~0.008
		High Efficiency Finishing	Continuous ~ Light Interruption	KBN900	1640~2950~3940	0.004~0.020~0.039	0.002~0.004~0.008
		Heavy Machining	Continuous ~ Interruption	KBN900	1640~2300~2950	0.020~0.059~0.118	0.004~0.012~0.020
Powdered Steel (Iron based)	-	Finishing	Continuous ~ Light Interruption	KBN570	175~500~650	0.002~0.008~0.012	0.002~0.004~0.008
	-	Finishing	Continuous ~ Interruption	KBN70M	325~650~825	0.002~0.008~0.012	0.002~0.004~0.008

※PT600M is a titanium carbide ceramic + MEGACOAT. (Al_2O_3 + TiC)

80° Diamond

Positive Insert with Hole

Part Number		A (in)	T (in)	Ød (in)	α
CCMW	1109_	0.138	0.055	0.075	
	1411_	0.169	0.071	0.091	7°
	215_	1/4	3/32	0.110	
	325_	3/8	5/32	0.173	

Part Number		A (in)	T (in)	Ød (in)	α
CPGB	2515_	5/16	3/32	0.138	11°
	32_	3/8	1/8	0.177	

Edge Prep.		
Symbol	Cutting Edge Spec.	Example
F	Sharp Edge	
E	Rounded Cutting Edge (Hone)	E003 R0.003" Honed
T	Chamfered Cutting Edge	T00315 0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525 0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)	
	Nodular Cast Iron (without Scale)	●
	Nodular Cast Iron (with Scale)	●
H	Hard Materials (Roughing)	֍ ✠
	Hard Materials (Finishing)	● ○ ● ○ ◔
	Hard Materials (Chip Control)	
	Powdered Steel	● ✠ ●

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) rε	Dimensions (in) S	No. of Edges	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	CBN KBN510	KBN525	KBN475	KBN65B	KBN570	Toolholder Page
Multi-Edge Sharp Edge NEW	CCMW 3251MEF	F	CCMW 09T304MEF	1/64	0.075	2											●		○	See Table on C5
	3252MEF		09T308MEF	1/32	0.071												●		○	
Multi-Edge	CCMW 21505T00315ME	T00315	CCMW 060202T00815ME	0.008	0.079	2	○	○	●		○				○	●				
	2151T00315ME		060204T00815ME	1/64	0.075		○	○	●		●	●			●	●	●			
	2152T00315ME		060208T00815ME	1/32	0.071		○	○	●		●	●			●	●	●			
	CCMW 32505T00315ME	T00315	CCMW 09T302T00815ME	0.008	0.079	2	○	○	○		●	●			○	●				
	3251T00315ME		09T304T00815ME	1/64	0.075		○	○	●	○	●	●	○	●	●	○	●			
	3252T00315ME		09T308T00815ME	1/32	0.071		○	○	○	○	●	●	○	●	●	○	●			
Multi-Edge General Purpose NEW	CCMW 2151S00525MES	S00525	CCMW 060204S01225MES	1/64	0.075	2	●													
	2152S00525MES		060208S01225MES	1/32	0.071		●													
	CCMW 3251S00525MES	S00525	CCMW 09T304S01225MES	1/64	0.075	2	●										●			
	3252S00525MES		09T308S01225MES	1/32	0.071		●										●			
Multi-Edge / Tough	CCMW 3251S00435MET	S00435	CCMW 09T304S01035MET	1/64	0.075	2	●	○	●		●					●				
	3252S00435MET		09T308S01035MET	1/32	0.071		●	○	○		●									
Small Edge	CCMW 110905T00315SE	T00315	CCMW 030102T00815SE	0.008	0.055	1		○	○						○	○				F18
	11091T00315SE		030104T00815SE	1/64	0.055			○	○						○	○				F39
	CCMW 141105T00315SE	T00315	CCMW 040102T00815SE	0.008	0.055	1		○	○						○	○				
	14111T00315SE		040104T00815SE	1/64	0.055			○	○						○	○				
	CCMW 21505T00315SE	T00315	CCMW 060202T00815SE	0.008	0.079	1									●	●				See Table on C5
	2151T00315SE		060204T00815SE	1/64	0.075				○						●	●				
	CCMW 32505T00315SE	T00315	CCMW 09T302T00815SE	0.008	0.079	1		○							○	●				
	3251T00315SE		09T304T00815SE	1/64	0.075			○							●	○				
Small Edge / Tough	CCMW 110905S00435SET	S00435	CCMW 030102S01035SET	0.008	0.055	1		○	○											F18
	11091S00435SET		030104S01035SET	1/64	0.055			○	○							●				F39
	CCMW 141105S00435SET	S00435	CCMW 040102S01035SET	0.008	0.055	1		○	○											
	14111S00435SET		040104S01035SET	1/64	0.055			○	○							○				
	CCMW 2151S00435SET	S00435	CCMW 060204S01035SET	1/64	0.075	1										●				See Table on C5
	CCMW 3251S00435SET	S00435	CCMW 09T304S01035SET	1/64	0.075	1										●				
Multi-Edge	CPGB 25151T00315ME	T00315	CPGB 080204T00815ME	1/64	0.075	2	○	○	○		●	●			●	●	○			
	CPGB 3205T00315ME	T00315	CPGB 090302T00815ME	0.008	0.075	2	○	○	○			●			●	○				
	321T00315ME		090304T00815ME	1/64	0.075		○	○	○		●	●			●	●	○			
Multi-Edge General Purpose NEW	CPGB 321S00525MES	S00525	CPGB 090304S01225MES	1/64	0.075	2	●													
	322S00525MES		090308S01225MES	1/32	0.098		●													
Multi-Edge / Tough	CPGB 25151S00435MET	S00435	CPGB 080204S01035MET	1/64	0.075	2		○	○		●					●				F41
	25152S00435MET		080208S01035MET	1/32	0.087			○	○		●									
	CPGB 321S00435MET	S00435	CPGB 090304S01035MET	1/64	0.075	2	●	○	○		●					●				
	322S00435MET		090308S01035MET	1/32	0.098		●	○	○		●									
Small Edge	CPGB 251505T00315SE	T00315	CPGB 080202T00815SE	0.008	0.075	1									●	●				
	25151T00315SE		080204T00815SE	1/64	0.075										●	○				
	CPGB 3205T00315SE	T00315	CPGB 090302T00815SE	0.008	0.075	1									●	○				
	321T00315SE		090304T00815SE	1/64	0.075			○							●	●				
Small Edge / Tough	CPGB 25151S00435SET	S00435	CPGB 080204S01035SET	1/64	0.075	1			○							○				
	CPGB 321S00435SET	S00435	CPGB 090304S01035SET	1/64	0.075	1										○				

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

NEW ITEMS!

55° Diamond

Positive Insert with Hole

Part Number		A (in)	T (in)	Ød (in)	α
DCMW	215_	1/4	3/32	0.110	7°
	325_	3/8	5/32	0.177	

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)	
	Nodular Cast Iron (without Scale)	●
	Nodular Cast Iron (with Scale)	●
H	Hard Materials (Roughing)	֍ ✖
	Hard Materials (Finishing)	● ○ ● ○ ◔
	Hard Materials (Chip Control)	
	Powdered Steel	● ✖ ●

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) rε	Dimensions (in) S	No. of Edges	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	CBN KBN510	KBN525	KBN475	KBN65B	KBN570	Toolholder Page
Multi-Edge Sharp Edge NEW	DCMW 3251MEF	F	DCMW 11T304MEF	0.008	0.075	2											●		○	Reference Table Below
	3252MEF		11T308MEF	1/64	0.067												●		○	
Multi-Edge	DCMW 21505T00315ME	T00315	DCMW 070202T00815ME	0.008	0.075	2	○	○	○		○	●			●	●	●			
	2151T00315ME		070204T00815ME	1/64	0.067		●	○	●		●	●			●	●	●			
	2152T00315ME		070208T00815ME	1/32	0.075		○	○	●		●	●			●	●				
	DCMW 32505T00315ME	T00315	DCMW 11T302T00815ME	0.008	0.075	2	○	○	○		●	●			●	●				
	3251T00315ME		11T304T00815ME	1/64	0.067		○	○	●	○	●	●	○	●	●	●	●			
	3252T00315ME		11T308T00815ME	1/32	0.075		○	○	○	○	●	●	○	●	●	●	●			
	3253T00315ME		11T312T00815ME	3/64	0.075		○	○	○	○	●	●			○	○				
Multi-Edge General Purpose NEW	DCMW 32505S00525MES	S00525	DCMW 11T302S01225MES	0.008	0.075	2	●													
	3251S00525MES		11T304S01225MES	1/64	0.067		●										●			
	3252S00525MES		11T308S01225MES	1/32	0.075		●										●			
Multi-Edge Tough	DCMW 21505S00435MET	S00435	DCMW 070202S01035MET	0.008	0.075	2			○	○		○								
	2151S00435MET		070204S01035MET	1/64	0.067				○	●		●								
	2152S00435MET		070208S01035MET	1/32	0.075				○	○		●								
	DCMW 32505S00435MET	S00435	DCMW 11T302S01035MET	0.008	0.075	2	●	○	○		●					●				
	3251S00435MET		11T304S01035MET	1/64	0.067		●	○	●		●					●				
	3252S00435MET		11T308S01035MET	1/32	0.075			○	●							●				
	3253S00435MET		11T312S01035MET	3/64	0.075			○	○		●									
Small Edge	DCMW 21505T00315SE	T00315	DCMW 070202T00815SE	0.008	0.075	1		○	○						●	○				
	2151T00315SE		070204T00815SE	1/64	0.067			○	○						●	○				
	DCMW 32505T00315SE	T00315	DCMW 11T302T00815SE	0.008	0.075	1									○	○				
	3251T00315SE		11T304T00815SE	1/64	0.067										●	●				
	3252T00315SE		11T308T00815SE	1/32	0.075				○							●				
Small Edge Tough	DCMW 2151S00435SET	S00435	DCMW 070204S01035SET	1/64	0.067	1										○				
	DCMW 32505S00435SET	S00435	DCMW 11T302S01035SET	0.008	0.075	1										○				
	3251S00435SET		11T304S01035SET	1/64	0.067											●				
	3252S00435SET		11T308S01035SET	1/32	0.075											●				

Part Number	Applicable Toolholder Page
DC..215_	E24~ E27, E35, F45~ F49
DC..325_	E20, E24~ E27, E35, F45~ F49

Part Number	Applicable Toolholder Page
CC..215_	E22~ E23, E34, F39
CC..325_	E22~ E23, E34, F39

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

CBN & PCD tools sold in 1 piece boxes.

60° Triangle

Positive Insert with Hole

Part Number		A (in)	T (in)	Ød (in)	α
TPGB	1515_	3/16	3/32	0.091	11°
	1815_	7/32	3/32	0.118	

Part Number		A (in)	T (in)	Ød (in)	α
TPGB	22_	1/4	1/8	0.138	11°

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)	
	Nodular Cast Iron (without Scale)	●
	Nodular Cast Iron (with Scale)	
H	Hard Materials (Roughing)	❁ ✖
	Hard Materials (Finishing)	● ○ ● ○ ◔
	Hard Materials (Chip Control)	
	Powdered Steel	● ✖ ●

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) rε	Dimensions (in) S	No. of Edges	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	CBN KBN510	KBN525	KBN475	KBN65B	KBN570	Toolholder Page
Multi-Edge Sharp Edge NEW	TPGB 221MEF	F	TPGB 110304MEF	1/64	0.071	3											●		○	Reference Table Below
	222MEF		110308MEF	1/32	0.059												●		○	
Multi-Edge	TPGB 2205T00315ME	T00315	TPGB 110302T00815ME	0.008	0.091	3	○	○	○		○	●			○	○	●			
	221T00315ME		110304T00815ME	1/64	0.083		○	○	○		●	●			●	●	●			
	222T00315ME		110308T00815ME	1/32	0.071		○	○	○		●	●			●	●	●			
Multi-Edge General Purpose NEW	TPGB 221S00525MES	S00525	TPGB 110304S01225MES	1/64	0.071	3	●										●			
	222S00525MES		110308S01225MES	1/32	0.059		●										●			
Multi-Edge Tough	TPGB 2205S00435MET	S00435	TPGB 110302S01035MET	0.008	0.091	3		○	○		○									
	221S00435MET		110304S01035MET	1/64	0.083		●	○	○		●									
	222S00435MET		110308S01035MET	1/32	0.071		●	○	○		●									
Small Edge	TPGB 151505T00315SE	T00315	TPGB 080202T00815SE	0.008	0.071	1		○	○						○	○				
	15151T00315SE		080204T00815SE	1/64	0.063			○	○						●	○				
	TPGB 181505T00315SE	T00315	TPGB 090202T00815SE	0.008	0.071	1		○	○						●	●				
	18151T00315SE		090204T00815SE	1/64	0.063			○	○						●	●				
	TPGB 2205T00315SE	T00315	TPGB 110302T00815SE	0.008	0.075	1		○							●	○				
	221T00315SE		110304T00815SE	1/64	0.071			○							●	●				
	222T00315SE		110308T00815SE	1/32	0.059											●				
Small Edge Tough	TPGB 151505S00435SET	S00435	TPGB 080202S01035SET	0.008	0.071	1		○	○											
	15151S00435SET		080204S01035SET	1/64	0.063			○	○							○				
	TPGB 181505S00435SET	S00435	TPGB 090202S01035SET	0.008	0.071	1		○	○											
	18151S00435SET		090204S01035SET	1/64	0.063			○	○							○				
	TPGB 221S00435SET	S00435	TPGB 110304S01035SET	1/64	0.071	1										○				
	222S00435SET		110308S01035SET	1/32	0.059											○				

Part Number	Applicable Toolholder Page
TP..1515_	E29, F53~ F57
TP..1815_	F53~ F57
TP..22_	E29, F53~ F57

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

NEW ITEMS!

35° Diamond

Positive Insert with Hole

(in)

Part Number		A	T	Ød	α
VBGW	22_	1/4	1/8	0.110	5°
	33_	3/8	3/16	0.173	5°
VCGW	1515_	3/16	3/32	0.091	7°

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

		KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	KBN510	KBN525	KBN475	KBN65B	KBN570
K	Gray Cast Iron (with Scale)													
	Nodular Cast Iron (without Scale)						●					●		
	Nodular Cast Iron (with Scale)													
H	Hard Materials (Roughing)				❄	✖								
	Hard Materials (Finishing)	●	○	●						○	◔			
	Hard Materials (Chip Control)													
	Powdered Steel							●	✖					●

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) rε	Dimensions (in) S	No. of Edges	Toolholder Page
Multi-Edge Sharp Edge NEW	VBGW 221MEF	F	DCMW 110304MEF	1/64	0.075	2	Reference Table Below
	VBGW 222MEF		DCMW 110308MEF	1/32	0.071		
	VBGW 331MEF		DCMW 160404MEF	1/64	0.067	2	
	VBGW 332MEF		DCMW 160408MEF	1/32	0.071		
Multi-Edge	VBGW 2205T00315ME	T00315	VBGW 110302T00815ME	0.008	0.079		
	VBGW 221T00315ME		VBGW 110304T00815ME	1/64	0.075	2	
	VBGW 222T00315ME		VBGW 110308T00815ME	1/32	0.071		
	VBGW 3305T00315ME	T00315	VBGW 160402T00815ME	0.008	0.079		
	VBGW 331T00315ME		VBGW 160404T00815ME	1/64	0.075	2	
	VBGW 332T00315ME		VBGW 160408T00815ME	1/32	0.071		
Multi-Edge General Purpose NEW	VBGW 221S00525MES	S00525	VBGW 110304S01225MES	1/64	0.075	2	
	VBGW 331S00525MES	S00525	VBGW 160404S01225MES	1/64	0.075	2	
Multi-Edge Tough	VBGW 2205S00435MET	S00435	VBGW 110302S01035MET	0.008	0.055		
	VBGW 221S00435MET		VBGW 110304S01035MET	1/64	0.055	1	
	VBGW 222S00435MET		VBGW 110308S01035MET	1/64	0.055		
	VBGW 3305S00435MET	S00435	VBGW 160402S01035MET	0.008	0.079		
	VBGW 331S00435MET		VBGW 160404S01035MET	1/64	0.055	1	
	VBGW 332S00435MET		VBGW 160408S01035MET	1/64	0.075		
Small Edge	VBGW 2205T00315SE	T00315	VBGW 110302T00815SE	0.008	0.055		
	VBGW 221T00315SE		VBGW 110304T00815SE	1/32	0.087	1	
	VBGW 222T00315SE		VBGW 110308T00815SE	1/64	0.055		
	VBGW 3305T00315SE	T00315	VBGW 160402T00815SE	0.008	0.055		
	VBGW 331T00315SE		VBGW 160404T00815SE	1/32	0.087	1	
	VBGW 332T00315SE		VBGW 160408T00815SE	1/64	0.055		
Small Edge Tough	VBGW 221S00435SET	S00435	VBGW 110304S01035SET	1/64	0.075	2	
	VBGW 222S00435SET		VBGW 110308S01035SET	1/32	0.098		
	VBGW 331S00435SET	S00435	VBGW 160404S01035SET	0.008	0.075	2	
	VBGW 332S00435SET		VBGW 160408S01035SET	1/64	0.075		
Multi-Edge	VCGW 151505T00315ME	T00315	VCGW 080202T00815ME	1/64	0.075		
	VCGW 15151T00315ME		VCGW 080204T00815ME	1/32	0.087	2	
	VCGW 15152T00315ME		VCGW 080208T00815ME	1/32	0.098		
Multi-Edge Tough	VCGW 151505S00435MET	S00435	VCGW 080202S01035MET	1/64	0.075		
	VCGW 15151S00435MET		VCGW 080204S01035MET	1/32	0.087	2	
	VCGW 15152S00435MET		VCGW 080208S01035MET	1/32	0.098		
Small Edge	VCGW 151505T00315SE	T00315	VCGW 080202T00815SE	0.008	0.075		
	VCGW 15151T00315SE		VCGW 080204T00815SE	1/32	0.098	1	
Small Edge Tough	VCGW 15151S00435SET	S00435	VCGW 080204S01035SET	1/64	0.075		
	VCGW 15152S00435SET		VCGW 080208S01035SET	1/32	0.098	1	

Part Number	Applicable Toolholder Page
VB..22_	E30~ E31, E36, F61~ F63
VB..33_	E30~ E31
VC..15_	E36, F58, F61~ F63

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

CBN & PCD tools sold in 1 piece boxes.

80° Trigon

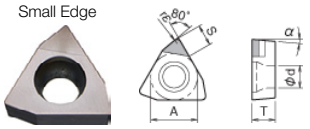
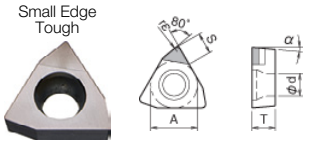
Positive Insert with Hole

(in)

Part Number		A	T	Ød	α
WBGW	121_	5/32	1/16	0.091	5°
	1515_	3/16	3/32	0.091	

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)	
	Nodular Cast Iron (without Scale)	
	Nodular Cast Iron (with Scale)	
H	Hard Materials (Roughing)	
	Hard Materials (Finishing)	● ◕ ○ ◔
	Hard Materials (Chip Control)	
	Powdered Steel	

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) rε	Dimensions (in) S	No. of Edges	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN30M	KBN35M	KBN60M	KBN65M	KBN70M	CBN KBN510	KBN525	KBN475	KBN65B	KBN570	Toolholder Page
Small Edge 	WBGW 12105T00315℄-SE	T00315	WBGW 060102T00815℄-SE	0.008	0.075	1		Ⓛ	Ⓛ						Ⓛ	●				F65 F66 F67
	1211T00315℄-SE		060104T00815℄-SE	1/64	0.075			Ⓛ	Ⓛ						Ⓛ	●				
	WBGW 151505T00315℄-SE	T00315	WBGW 080202T00815℄-SE	0.008	0.091	1		Ⓛ	Ⓛ						●	●				
	15151T00315℄-SE		080204T00815℄-SE	1/64	0.091			Ⓛ	Ⓛ						●	●				
Small Edge Tough 	WBGW 12105S00435℄-SET	S00435	WBGW 060102S01035℄SET	0.008	0.075	1		Ⓛ	Ⓛ							Ⓛ				
	1211S00435℄-SET		060104S01035℄SET	1/64	0.075			Ⓛ	Ⓛ							Ⓛ				
	WBGW 151505S00435℄-SET	S00435	WBGW 080202S01035℄SET	0.008	0.091	1		Ⓛ	Ⓛ											
	15151S00435℄-SET		080204S01035℄SET	1/64	0.091			Ⓛ	Ⓛ							Ⓛ				

A GRADES
B INSERTS
C CBN & PCD
E TURNING
F BORING
G GROOVING
H CUT-OFF
J THREADING
L SOLID END MILLS
M MILLING
P SPARE PARTS
R TECHNICAL
T INDEX

CBN & PCD tools sold in 1 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

NEW ITEMS!

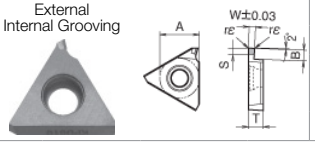
External Grooving Inserts

1 - Edge

Grooving Inserts (1-edge)

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

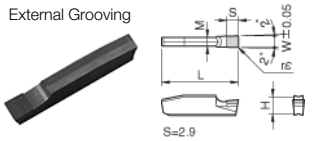
		KBN510	KBN525
K	Gray Cast Iron (with Scale)		
	Nodular Cast Iron (without Scale)		
	Nodular Cast Iron (with Scale)		
H	Hard Materials (Roughing)		
	Hard Materials (Finishing)	○	●
	Hard Materials (Chip Control)		
	Powdered Steel		

Insert	ANSI Part Number	ANSI Old Part Number	Edge Prep (in)	Unit	W±0.0012 (in)	W±0.03 (mm)	B	rε	A	T	Ød	S	No. of Edges	KBN510	KBN525	Toolholder Page
External Internal Grooving 	GBA43℄ 125-020	GBA43℄ 125	E003	mm	0.049	1.25	2.0	0.2	12.7	4.76	5.5	1.9	1	○	○	
	150-020	150			0.059	1.50	3.5	0.2	12.7	4.76	5.5	1.9		Ⓛ	○	→ G12
	200-020	200			0.079	2.00	3.5	0.2	12.7	4.76	5.5	1.9		Ⓛ	○	→ G13
	250-020	250			0.098	2.50	4.0	0.2	12.7	4.76	5.5	1.9				
	300-020	300			0.118	3.00	4.0	0.2	12.7	4.76	5.5	1.9			Ⓡ	

Deep Grooving Inserts (1-edge)

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

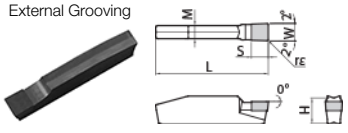
		KBN510	KBN525
K	Gray Cast Iron (with Scale)		
	Nodular Cast Iron (without Scale)		
	Nodular Cast Iron (with Scale)		
H	Hard Materials (Roughing)		
	Hard Materials (Finishing)	○	●
	Hard Materials (Chip Control)		
	Powdered Steel		

Insert	ANSI Part Number	ANSI Old Part Number	Edge Prep (in)	Unit	W±0.002 (in)	W±0.05 (mm)	rε	L	H	M	S	No. of Edges	KBN510	KBN525	Toolholder Page
External Grooving 	GMN 2	-	E003	mm	0.079	2	0.2	20	4.3	1.8	2.9	1	○	○	
	3	-			0.118	3	0.4	20	4.3	2.3	2.9		○		→ G30
	4	-			0.158	4	0.4	20	4.3	3.3	2.9		○	○	→ G31
	5	-			0.197	5	0.4	20	4.3	4.2	2.9		○	○	
	6	-			0.236	6	0.4	20	4.3	5.2	2.9		○	○	

Deep Grooving Inserts (1-edge)

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

		KBN05M	KBN570
K	Gray Cast Iron (with Scale)		
	Nodular Cast Iron (without Scale)		
	Nodular Cast Iron (with Scale)		
H	Hard Materials (Roughing)		
	Hard Materials (Finishing)	●	
	Hard Materials (Chip Control)		
	Powdered Steel		●

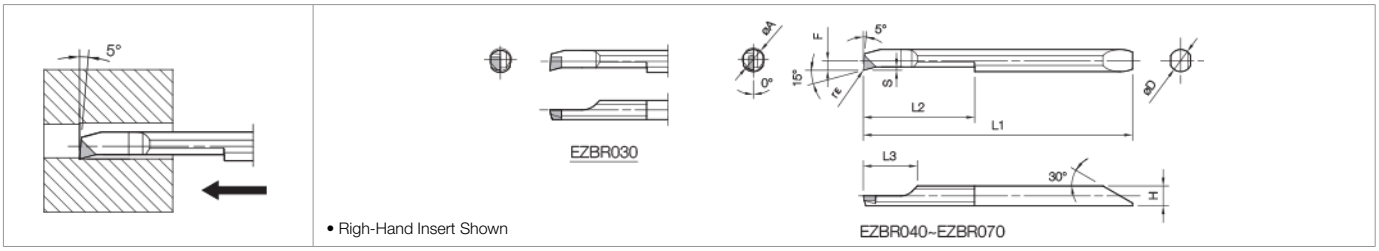
Insert	ANSI Part Number	Edge Prep (in)	Unit	W±0.0008 (in)	W±0.02 (mm)	rε	L	H	M	S	No. of Edges	KBN05M	KBN570	Toolholder Page
NEW External Grooving 	GDGS 2020N-020NB	E003	mm	0.079	2.0	0.2	20	4.3	1.8	2.9		○		
		E001		0.079	2.0	0.2	20	4.3	1.8	2.9			○	
	3020N-040NB	E003	mm	0.118	3.0	0.4	20	4.3	2.3	2.9	1	○		
		E001		0.118	3.0	0.4	20	4.3	2.3	2.9			○	
	4020N-040NB	E003	mm	0.158	4.0	0.4	20	4.3	3.3	2.9		○		→ G19 ~ → G21
		E001		0.158	4.0	0.4	20	4.3	3.3	2.9			○	
	5020N-040NB	E003	mm	0.197	5.0	0.4	20	4.3	4.2	2.9		○		
		E001		0.197	5.0	0.4	20	4.3	4.2	2.9			○	
	6020N-040NB	E003	mm	0.236	6.0	0.4	20	4.3	5.2	2.9		○		
		E001		0.236	6.0	0.4	20	4.3	5.2	2.9			○	

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

CBN & PCD tools sold in 1 piece boxes.

EZ Bars

EZB-NB: CBN NEW



• Righ-Hand Insert Shown

EZ Bar Dimensions

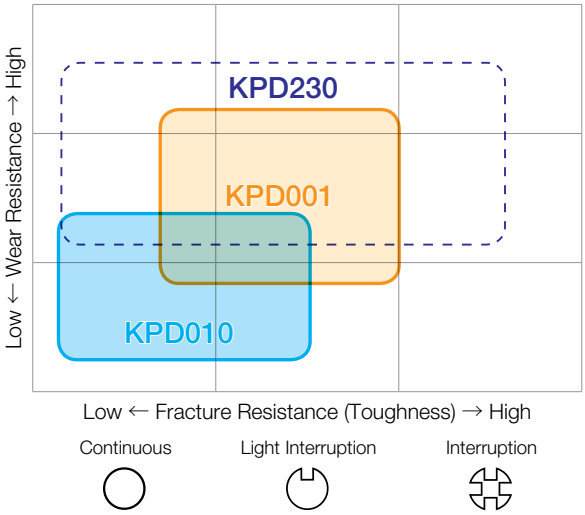
Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)	
	Nodular Cast Iron (without Scale)	
	Nodular Cast Iron (with Scale)	
H	Hard Materials (Roughing)	
	Hard Materials (Finishing)	●
	Hard Materials (Chip Control)	
	Powdered Steel	

ANSI Part Number		Edge Prep	Min. Bore Dia. ØA	ØD	H	L1	L2	L3	F	S	rε	No. of Edges	CBN KBN05M	Applicable Sleeves Page
			Dimensions (mm)											
EZBR	030030-003NB	T00315	3	3	2.6	38.8	13	6.8	1.25	0.3	0.035±0.015	1	○	F21 ~ F25
	040040-003NB	T00315	4	4	3.6	48.8	20	9.8	1.75	0.5			○	
	050050-003NB	T00315	5	5	4.6	58.1	25	9.8	2.25	0.5			○	
	060060-003NB	T00315	6	6	5.6	66.1	30	11.8	2.75	0.5			○	
	070070-003NB	T00315	7	7	6.6	74.1	35	11.8	3.25	0.5			○	

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

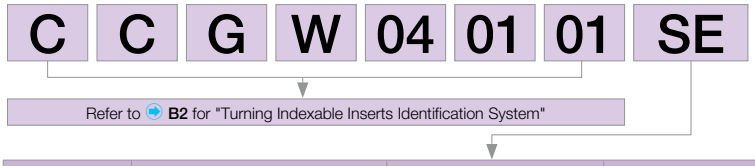
Application Map



About Insert Grades

Grades	Applications	Advantages
KPD001 (Average grain size under 1μm)	• High speed machining of non-ferrous metals and brass • High speed machining of glass fiber and plastics • Machining of carbide and ceramics	• Smallest micro-grain possible in PCD • High edge strength with superior wear resistance, fracture resistance, and edge sharpening performance
KPD010 (Average grain size 10μm)	• High speed machining of non-ferrous metals and brass • High speed machining of glass fiber and plastics • Machining of carbide and ceramics	• Well balanced wear resistance and flexural strength • General Purpose
KPD230 (Mixture of fine grain with average grain size 2-30μm and rough)	• High speed milling of aluminum alloy and non-ferrous metals such as brass • High speed milling of glass fiber and plastics	• High density PCD with mixture of both rough and fine grains with excellent abrasive wear and chipping resistance

Turning Insert Identification System



Insert Type	Part Number	Manufacture's Option	Series Name	Cutting Edge Length	No. of Edges	Regrinding
Positive	**CCGW040101SE**	SE	Small Edge	Short (Small Edge)	1	Not Recommended
	CCGW040101NE	NE	New Value Edge	Long (85% length compared to no indication's cutting edge)	1	Possible
	CCGW040101	No Indication	-		1	

Note) 1. No edge preparation symbols for PCD inserts. Most of the PCD inserts' edge preparations are sharp edge.
2. Refer to **Page** ➡ **B6** for insert color.

• About Regrinding

1) Regrinding is possible with the inserts with "NE" and no symbol in manufacturer's option 2. Regrinding can not be available on the edge condition.
2) Regrinding is not recommended for inserts with "SE" in manufacturer's option 2.

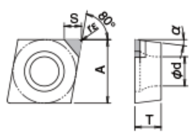
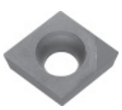
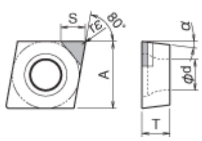
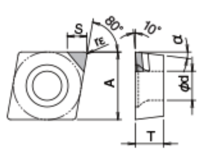
Recommended Cutting Conditions (Turning)

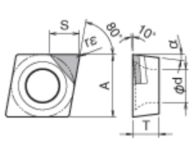
Workpiece Material	Insert Grades		Cutting Conditions			Remarks
	KPD001	KPD010	Cutting Speed (sfm)	D.O.C. (in) Positive Inserts	Feed Rate (ipr)	
Aluminum Alloys Zinc Alloys	★	☆	975 - 4925	~0.039	0.001~0.020	Both Dry and Wet Cutting Available
Copper, Brass, Bronze	★	☆	975 - 3275	~0.039	0.001~0.020	
Magnesium Alloys	★	☆	1300 - 3925	~0.039	0.001~0.020	
Carbide	★	☆	25 - 100	~0.012	0.001~0.004	
Titanium Alloys	★	☆	325 - 650	~0.039	0.002~0.008	Wet
Glass Fiber Reinforced Plastics Carbon Fiber	★	☆	325 - 1975	~0.039	0.002~0.020	Dry
Silica Filling Plastic Particle Board	★	☆	1300 - 2625	~0.039	0.002~0.020	

★: 1st Recommendation ☆: 2nd Recommendation

Positive

Positive Insert with Hole



Edge Prep.													
N: Non-Ferrous Metals (with Interruption) ◐; Non-Ferrous Metals (without Interruption) ●; S: Titanium Alloys (with Interruption) ◐; Titanium Alloys (without Interruption) ●													
All PCD Items / Sharp Edge													
Insert: ANSI Part Number		ISO Part Number		A	T	Ød	rε	S	α (°)	No. of Edges	KPD001	KPD010	Toolholder Page
CCGW	141102SE	CCGW	040101SE	0.169	0.071	0.091	0.004	0.051	7°		○		F18, F39
	141105SE (NEW)		040102SE	0.169	0.071	0.091	0.008	0.051	7°	1	○		
	14111SE		040104SE	0.169	0.071	0.091	1/64	0.051	7°		○		
CCGW	21502SE	CCGW	060201SE	1/4	3/32	0.110	0.004	0.091	7°		○		See Table Below
	21505SE (NEW)		060202SE	1/4	3/32	0.110	0.008	0.091	7°	1	○		
	2151SE		060204SE	1/4	3/32	0.110	1/64	0.091	7°		○		
CCGW	32505SE	CCGW	09T302SE	3/8	5/32	0.173	0.008	0.106	7°		○		
	3251SE (NEW)		09T304SE	3/8	5/32	0.173	1/64	0.106	7°	1	○		
	3252SE		09T308SE	3/8	5/32	0.173	1/32	0.106	7°		○		
CCGW	141102NE	CCGW	040101NE	0.169	0.071	0.091	0.004	0.067	7°		○		F18, F39
	141105NE		040102NE	0.169	0.071	0.091	0.008	0.063	7°	1	○		
	14111NE		040104NE	0.169	0.071	0.091	1/64	0.063	7°		○		
CCGW	21502NE	CCGW	060201NE	1/4	3/32	0.110	0.004	0.122	7°		●		See Table Below
	21505NE		060202NE	1/4	3/32	0.110	0.008	0.118	7°	1	○		
	2151NE		060204NE	1/4	3/32	0.110	1/64	0.118	7°		○		
CCGW	32502NE	CCGW	09T301NE	3/8	5/32	0.173	0.004	0.134	7°		○		
	32505NE		09T302NE	3/8	5/32	0.173	0.008	0.134	7°		○		
	3251NE		09T304NE	3/8	5/32	0.173	1/64	0.134	7°	1	○		
	3252NE		09T308NE	3/8	5/32	0.173	1/32	0.130	7°		○		
CCGW	141102	CCGW	40101	0.169	0.071	0.091	0.004	0.075	7°		○	○	F18, F39
	141105		40102	0.169	0.071	0.091	0.008	0.075	7°	1	○	○	
	14111		40104	0.169	0.071	0.091	1/64	0.075	7°		○	○	
CCGW	21502	CCGW	60201	1/4	3/32	0.110	0.004	0.138	7°			○	Reference Table Below
	21505		60202	1/4	3/32	0.110	0.008	0.138	7°	1		○	
	2151		60204	1/4	3/32	0.110	1/64	0.138	7°			○	
CCGW	32502	CCGW	09T301	3/8	5/32	0.173	0.004	0.150	7°		○	○	
	32505		09T302	3/8	5/32	0.173	0.008	0.150	7°	1	○	○	
	3251		09T304	3/8	5/32	0.173	1/64	0.146	7°		○	○	
	3252		09T308	3/8	5/32	0.173	1/32	0.142	7°			○	
CCMT	21505SE	CCMT	060202SE	1/4	3/32	0.110	0.008	0.087	7°	1	○		
	2151SE (NEW)		060204SE	1/4	3/32	0.110	1/64	0.087	7°		○		
CCMT	32502SE	CCMT	09T301SE	3/8	5/32	0.173	0.004	0.106	7°		○		
	32505SE (NEW)		09T302SE	3/8	5/32	0.173	0.008	0.106	7°	1	○		
	3251SE		09T304SE	3/8	5/32	0.173	1/64	0.106	7°		○		
	3252SE		09T308SE	3/8	5/32	0.173	1/32	0.106	7°		○		
CCMT	21502NE	CCMT	060201NE	1/4	3/32	0.110	0.004	0.110	7°		○		
	21505NE		060202NE	1/4	3/32	0.110	0.008	0.110	7°	1	○		
	2151NE		060204NE	1/4	3/32	0.110	1/64	0.110	7°		○		
CCMT	32502NE	CCMT	09T301NE	3/8	5/32	0.173	0.004	0.134	7°		○		
	32505NE		09T302NE	3/8	5/32	0.173	0.008	0.134	7°	1	○		
	3251NE		09T304NE	3/8	5/32	0.173	1/64	0.134	7°		○		
	3252NE		09T308NE	3/8	5/32	0.173	1/32	0.130	7°		○		
CCMT	21502	CCMT	60201	1/4	3/32	0.110	0.004	0.130	7°		○	○	
	21505		60202	1/4	3/32	0.110	0.008	0.130	7°	1	●	●	
	2151		60204	1/4	3/32	0.110	1/64	0.126	7°		●	●	
CCMT	32502	CCMT	09T301	3/8	5/32	0.173	0.004	0.154	7°		○	○	
	32505		09T302	3/8	5/32	0.173	0.008	0.154	7°	1	●	●	
	3251		09T304	3/8	5/32	0.173	1/64	0.154	7°		●	●	
	3252		09T308	3/8	5/32	0.173	1/32	0.150	7°			●	

Part Number	*Applicable Toolholder Page*
CC..215_	E22~ E23, E34, F39
CC..325_	E22~ E23, E34, F39

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

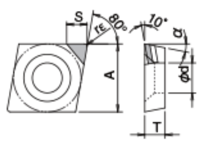
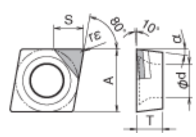
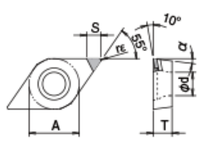
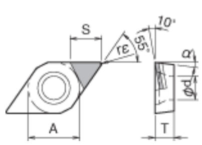
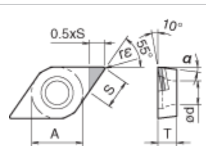
CBN & PCD tools sold in 1 piece boxes.

NEW ITEMS!

Positive

Positive Insert with Hole

Edge Prep.											KPD001	KPD010	
			N	Non-Ferrous Metals (with Interruption)							◐		
			N	Non-Ferrous Metals (without Interruption)							●		
			S	Titanium Alloys (with Interruption)							◐		
			S	Titanium Alloys (without Interruption)							●		
All PCD Items		Sharp Edge											

Insert		ANSI Part Number	ISO Part Number	A	T	Ød	rε	S	α	No. of Edges	KPD001	KPD010	Toolholder Page
		CPMH 3205SE NEW	CPMH 090302SE	3/8	0.071	0.177	0.008	0.106	11°	1	○		F41
		321SE	090304SE	3/8	0.071	0.177	1/64	0.106	11°		○		
		CPMH 251505NE	CPMH 080202NE	5/16	3/32	0.138	0.008	0.126	11°	1	○		
		25151NE	080204NE	5/16	3/32	0.138	1/64	0.126	11°		○		
		CPMH 3202NE	CPMH 090301NE	3/8	0.071	0.177	0.004	0.134	11°	1	○		
		3205NE	090302NE	3/8	0.071	0.177	0.008	0.134	11°		○		
		321NE	090304NE	3/8	0.071	0.177	1/64	0.134	11°		○		
		322NE	090308NE	3/8	0.071	0.177	1/32	0.134	11°		○		
		CPMH 251502	CPMH 80201	5/16	3/32	0.138	0.004	0.146	11°	1	○	○	
		251505	80202	5/16	3/32	0.138	0.008	0.146	11°		●	○	
		25151	80204	5/16	3/32	0.138	1/64	0.146	11°		●	○	
		CPMH 3202	CPMH 90301	3/8	0.071	0.177	0.004	0.158	11°	1	○	○	
		3205	90302	3/8	0.071	0.177	0.008	0.154	11°		○	●	
		321	90304	3/8	0.071	0.177	1/64	0.154	11°		○	○	
		322	90308	3/8	0.071	0.177	1/32	0.150	11°			●	
		DCMT 21502SE	DCMT 070201SE	1/4	3/32	0.110	0.004	0.106	7°	1	○		Reference Table Below
		21505SE NEW	070202SE	1/4	3/32	0.110	0.008	0.106	7°		○		
		2151SE	070204SE	1/4	3/32	0.110	1/64	0.106	7°		○		
		DCMT 32502SE	DCMT 11T301SE	3/8	5/32	0.173	0.004	0.106	7°	1	○		
		32505SE NEW	11T302SE	3/8	5/32	0.173	0.008	0.106	7°		○		
		3251SE	11T304SE	3/8	5/32	0.173	1/64	0.106	7°		●		
		3252SE	11T308SE	3/8	5/32	0.173	1/32	0.106	7°		●		
		DCMT 21502NE	DCMT 070201NE	1/4	3/32	0.110	0.004	0.134	7°	1	○		
		21505NE	070202NE	1/4	3/32	0.110	0.008	0.134	7°		○		
		2151NE	070204NE	1/4	3/32	0.110	1/64	0.126	7°		○		
		DCMT 32502NE	DCMT 11T301NE	3/8	5/32	0.173	0.004	0.134	7°	1	○		
		32505NE	11T302NE	3/8	5/32	0.173	0.008	0.130	7°		○		
		3251NE	11T304NE	3/8	5/32	0.173	1/64	0.126	7°		○		
		3252NE	11T308NE	3/8	5/32	0.173	1/32	0.110	7°		○		
		DCMT 21502	DCMT 70201	1/4	3/32	0.110	0.004	0.158	7°	1	○	○	
		21505	70202	1/4	3/32	0.110	0.008	0.154	7°		●	●	
		2151	70204	1/4	3/32	0.110	1/64	0.146	7°		●	●	
		DCMT 32502	DCMT 11T301	3/8	5/32	0.173	0.004	0.158	7°	1	○	○	
		32505	11T302	3/8	5/32	0.173	0.008	0.154	7°		●	○	
		3251	11T304	3/8	5/32	0.173	1/64	0.146	7°		●	●	
		3252	11T308	3/8	5/32	0.173	1/32	0.130	7°		●	●	
		DCMT 21505R/L-NE	DCMT 070202R/L-NE	1/4	3/32	0.110	0.008	0.130	7°	1	○		
		2151R/L-NE	070204R/L-NE	1/4	3/32	0.110	1/64	0.126	7°		○		
		DCMT 32505R/L-NE	DCMT 11T302R/L-NE	3/8	5/32	0.173	0.008	0.130	7°	1	○		
		3251R/L-NE	11T304R/L-NE	3/8	5/32	0.173	1/64	0.126	7°		○		

Part Number	*Applicable Toolholder Page*
DC..215_	E24~ E27, E35, F45~ F49
DC..325_	E20, E24~ E27, E35, F45~ F49

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

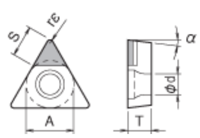
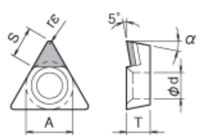
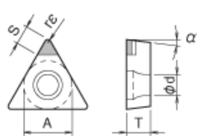
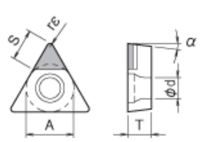
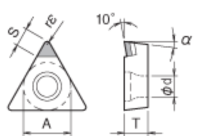
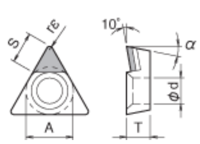
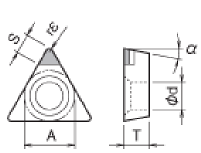
CBN & PCD tools sold in 1 piece boxes.

A GRADES
B INSERTS
C CBN & PCD
E TURNING
F BORING
G GROOVING
H CUT-OFF
J THREADING
L SOLID END MILLS
M MILLING
P SPARE PARTS
R TECHNICAL
T INDEX

Positive

Positive Insert with Hole

Edge Prep.			KPD001	KPD010
N	Non-Ferrous Metals (with Interruption)		●	
	Non-Ferrous Metals (without Interruption)		●	
S	Titanium Alloys (with Interruption)		●	
	Titanium Alloys (without Interruption)		●	

Insert		ANSI Part Number (All PCD Items)		ISO Part Number (Sharp Edge)		A	T	Ød	rε	S	α	No. of Edges	PCD KPD001	PCD KPD010	Toolholder Page
		TBGW	12105NE	TBGW	060102NE	5/32	1/16	0.091	0.008	0.083	5°	1	○		
			1211NE		060104NE	5/32	1/16	0.091	1/64	0.075	5°		○		
		TBGW	12105	TBGW	060102	5/32	1/16	0.091	0.008	0.094	5°	1	○	○	
			1211		060104	5/32	1/16	0.091	1/64	0.087	5°		○	○	
		TBMT	12102NE	TBMT	060101NE	5/32	1/16	0.091	0.004	0.087	5°	1	○		F53
			12105NE		060102NE	5/32	1/16	0.091	0.008	0.083	5°		○		F55
			1211NE		060104NE	5/32	1/16	0.091	1/64	0.079	5°		○		F57
			1212NE		060108NE	5/32	1/16	0.091	1/32	0.067	5°		○		
		TBMT	12102	TBMT	060101	5/32	1/16	0.091	0.004	0.102	5°	1		○	
			12105		060102	5/32	1/16	0.091	0.008	0.098	5°		○	○	
			1211		060104	5/32	1/16	0.091	1/64	0.091	5°		○	○	
			1212		060108	5/32	1/16	0.091	1/32	0.079	5°		○	○	
		TCGW	2205SE	TCGW	110302SE	1/4	0.071	0.110	0.008	0.098	7°	1		○	
			221SE		110304SE	1/4	0.071	0.110	1/64	0.094	7°			○	
		TCGW	2205NE	TCGW	110302NE	1/4	0.071	0.110	0.008	0.130	7°	1	○		
			221NE		110304NE	1/4	0.071	0.110	1/64	0.126	7°		○		
		TCGW	2205	TCGW	110302	1/4	0.071	0.110	0.008	0.154	7°	1		○	
			221		110304	1/4	0.071	0.110	1/64	0.146	7°			○	
		TCMT	2202SE	TCMT	110301SE	1/4	0.071	0.110	0.004	0.102	7°	1		○	E29
			2205SE		110302SE	1/4	0.071	0.110	0.008	0.098	7°			○	
			221SE		110304SE	1/4	0.071	0.110	1/64	0.094	7°			○	
		TCMT	151505NE	TCMT	080202NE	3/16	3/32	0.091	0.008	0.083	7°	1	○		
		TCMT	2205NE	TCMT	110302NE	1/4	0.071	0.110	0.008	0.134	7°	1	○		
			221NE		110304NE	1/4	0.071	0.110	1/64	0.130	7°		○		
		TCMT	151505	TCMT	080202	3/16	3/32	0.091	0.008	0.094	7°	1		○	
			15151		080204	3/16	3/32	0.091	1/64	0.087	7°			○	
		TCMT	2205	TCMT	110302	1/4	3/32	0.110	0.008	0.154	7°	1		○	
		TPGB	181505SE	TPGB	090202SE	7/32	3/32	0.118	0.008	0.083	11°	1	○		
			18151SE		090204SE	7/32	3/32	0.118	1/64	0.083	11°		○		
			18152SE		090208SE	7/32	3/32	0.118	1/32	0.083	11°		○		E29
		TPGB	2202SE	TPGB	110301SE	1/4	0.071	0.130	0.004	0.106	11°	1	○	○	F53
			2205SE		110302SE	1/4	0.071	0.130	0.008	0.102	11°		○	○	
			221SE		110304SE	1/4	0.071	0.130	1/64	0.098	11°		○	○	

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

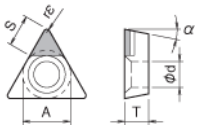
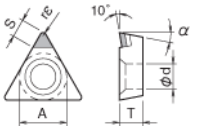
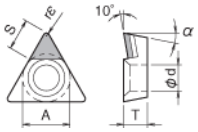
CBN & PCD tools sold in 1 piece boxes.

NEW ITEMS!

Positive

Positive Insert with Hole

Edge Prep.				N	Non-Ferrous Metals (with Interruption)	●	
All PCD Items	Sharp Edge				Non-Ferrous Metals (without Interruption)	●	
				S	Titanium Alloys (with Interruption)	●	
					Titanium Alloys (without Interruption)	●	

Insert		ANSI Part Number	ISO Part Number	Dimensions (in) A	T	Ød	rε	S	Angle (°) α	No. of Edges	PCD KPD001	PCD KPD010	Toolholder Page
		TPGB 151505NE	TPGB 080202NE	3/16	3/32	0.098	0.008	0.087	11°		○		Reference Table Below
		15151NE	080204NE	3/16	3/32	0.098	1/64	0.083	11°	1	○		
		15152NE	080208NE	3/16	3/32	0.098	1/32	0.071	11°		○		
		TPGB 181505NE	TPGB 090202NE	7/32	3/32	0.118	0.008	0.106	11°		○		
		18151NE	090204NE	7/32	3/32	0.118	1/64	0.102	11°	1	○		
		18152NE	090208NE	7/32	3/32	0.118	1/32	0.091	11°		○		
		TPGB 2205NE	TPGB 110302NE	1/4	1/8	0.130	0.008	0.134	11°		○		
		221NE	110304NE	1/4	1/8	0.130	1/64	0.130	11°	1	○		
		222NE	110308NE	1/4	1/8	0.130	1/32	0.118	11°		○		
		TPGB 151505	TPGB 80202	3/16	3/32	0.098	0.008	0.102	11°		○	○	
		15151	80204	3/16	3/32	0.098	1/64	0.094	11°	1	○	○	
		TPGB 181505	TPGB 90202	7/32	3/32	0.118	0.008	0.126	11°		○	○	
		18151	90204	7/32	3/32	0.118	1/64	0.118	11°	1	○	○	
		TPGB 2205	TPGB 110302	1/4	1/8	0.130	0.008	0.154	11°		○	○	
		221	110304	1/4	1/8	0.130	1/64	0.146	11°	1	○	○	
		222	110308	1/4	1/8	0.130	1/32	0.134	11°		○	○	
		TPMH 151505SE	TPMH 080202SE	3/16	3/32	0.098	0.008	0.067	11°		○		
		NEW 15151SE	080204SE	3/16	3/32	0.098	1/64	0.067	11°	1	○		
		TPMH 181505SE	TPMH 090202SE	7/32	3/32	0.118	0.008	0.079	11°		○		
		NEW 18151SE	090204SE	7/32	3/32	0.118	1/64	0.079	11°	1	○		
		TPMH 2202SE	TPMH 110301SE	1/4	1/8	0.138	0.004	0.106	11°		○	○	
		2205SE	110302SE	1/4	1/8	0.138	0.008	0.102	11°	1	○	○	
		221SE	110304SE	1/4	1/8	0.138	1/64	0.098	11°		○	○	
		TPMH 151502NE	TPMH 080201NE	3/16	3/32	0.098	0.004	0.091	11°		○		
		151505NE	080202NE	3/16	3/32	0.098	0.008	0.087	11°	1	○		
		15151NE	080204NE	3/16	3/32	0.098	1/64	0.083	11°		○		
		TPMH 181502NE	TPMH 090201NE	7/32	3/32	0.118	0.004	0.106	11°		○		
		181505NE	090202NE	7/32	3/32	0.118	0.008	0.102	11°	1	○		
		18151NE	090204NE	7/32	3/32	0.118	1/64	0.098	11°		○		
		18152NE	090208NE	7/32	3/32	0.118	1/32	0.087	11°		○		
		TPMH 2202NE	TPMH 110301NE	1/4	1/8	0.130	0.004	0.134	11°		○		
		2205NE	110302NE	1/4	1/8	0.130	0.008	0.130	11°	1	○		
		221NE	110304NE	1/4	1/8	0.130	1/64	0.126	11°		○		
		222NE	110308NE	1/4	1/8	0.130	1/32	0.114	11°		●		
		TPMH 151502	TPMH 80201	3/16	3/32	0.098	0.004	0.102	11°			○	
		151505	80202	3/16	3/32	0.098	0.008	0.098	11°	1	○	○	
		15151	80204	3/16	3/32	0.098	1/64	0.091	11°		○	○	
		TPMH 181502	TPMH 90201	7/32	3/32	0.118	0.004	0.118	11°		○	○	
		181505	90202	7/32	3/32	0.118	0.008	0.114	11°	1	○	○	
		18151	90204	7/32	3/32	0.118	1/64	0.091	11°		○	○	
		18152	90208	7/32	3/32	0.118	1/32	0.098	11°		○	○	
		TPMH 2202	TPMH 110301	1/4	1/8	0.130	0.004	0.154	11°		○	○	
		2205	110302	1/4	1/8	0.130	0.008	0.154	11°	1	○		
		221	110304	1/4	1/8	0.130	1/64	0.146	11°		○	●	
		222	110308	1/4	1/8	0.130	1/32	0.134	11°		○	○	

Part Number	Applicable Toolholder Page
TP..1515_	E29, F53~ F57
TP..1815_	F53~ F57
TP..22_	E29, F53~ F57

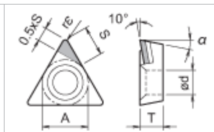
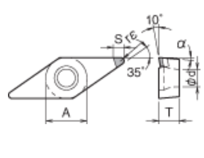
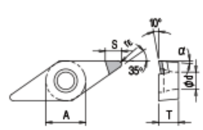
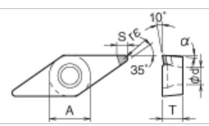
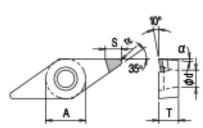
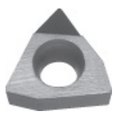
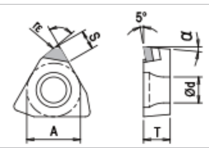
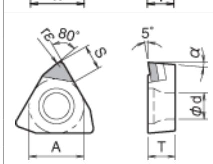
● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

CBN & PCD tools sold in 1 piece boxes.

Positive

Positive Insert with Hole

Edge Prep.		N	Non-Ferrous Metals (with Interruption)	◐
			Non-Ferrous Metals (without Interruption)	●
All PCD Items	Sharp Edge	S	Titanium Alloys (with Interruption)	◐
			Titanium Alloys (without Interruption)	●

Insert		ANSI Part Number	ISO Part Number	A	T	Ød	rε	S	α (°)	No. of Edges	KPD001	KPD010	Toolholder Page
		TPMH 2205R/L-NE	TPMH 110302R/L-NE	1/4	1/8	0.130	0.008	0.150	11°	1	○		Reference Table Below
		221R/L-NE	110304R/L-NE	1/4	1/8	0.130	1/64	0.142	11°		○		
		VBMT 2202SE	VBMT 110301SE	1/4	1/8	0.110	0.004	0.098	5°	1	○		
		NEW 2205SE	110302SE	1/4	1/8	0.110	0.008	0.091	5°		○		
		221SE	110304SE	1/4	1/8	0.110	1/64	0.075	5°		○		
		222SE	110308SE	1/4	1/8	0.110	1/32	0.075	5°		○		
		VBMT 3302SE	VBMT 160401SE	3/8	3/16	0.173	0.004	0.106	5°	1	○		
		NEW 3305SE	160402SE	3/8	3/16	0.173	0.008	0.098	5°		○		
		331SE	160404SE	3/8	3/16	0.173	1/64	0.083	5°		○		
		332SE	160408SE	3/8	3/16	0.173	1/32	0.079	5°		○		
		VBMT 2202NE	VBMT 110301NE	1/4	1/8	0.110	0.004	0.102	5°	1	○		
		2205NE	110302NE	1/4	1/8	0.110	0.008	0.094	5°		○		
		221NE	110304NE	1/4	1/8	0.110	1/64	0.079	5°		○		
		222NE	110308NE	1/4	1/8	0.110	1/32	0.122	5°		○		
		VBMT 3302NE	VBMT 160401NE	3/8	3/16	0.173	0.004	0.110	5°	1	○		
		3305NE	160402NE	3/8	3/16	0.173	0.008	0.102	5°		○		
		331NE	160404NE	3/8	3/16	0.173	1/64	0.087	5°		○		
		332NE	160408NE	3/8	3/16	0.173	1/32	0.118	5°		○		
		VBMT 2202	VBMT 110301	1/4	1/8	0.110	0.004	0.118	5°	1	○	○	
		2205	110302	1/4	1/8	0.110	0.008	0.110	5°		○	○	
		221	110304	1/4	1/8	0.110	1/64	0.094	5°		●	●	
		222	110308	1/4	1/8	0.110	1/32	0.138	5°		○	○	
		VBMT 3302	VBMT 160401	3/8	3/16	0.173	0.004	0.126	5°	1	○	○	
		3305	160402	3/8	3/16	0.173	0.008	0.118	5°		●	●	
		331	160404	3/8	3/16	0.173	1/64	0.102	5°		●	○	
		332	160408	3/8	3/16	0.173	1/32	0.138	5°			●	
		VCMT 151505SE	VCMT 080202SE	3/16	3/32	0.091	0.008	0.055	7°	1	○		E36, F61, F63
		NEW 15151SE	080204SE	3/16	3/32	0.091	1/64	0.055	7°		○		
		15152SE	080208SE	3/16	3/32	0.091	1/32	0.055	7°		○		
		VCMT 151502NE	VCMT 080201NE	3/16	3/32	0.091	0.004	0.067	7°	1	○		
		151505NE	080202NE	3/16	3/32	0.091	0.008	0.067	7°		○		
		15151NE	080204NE	3/16	3/32	0.091	1/64	0.071	7°		○		
		15152NE	080208NE	3/16	3/32	0.091	1/32	0.075	7°		○		
		VCMT 151502	VCMT 080201	3/16	3/32	0.091	0.004	0.079	7°	1	○	○	
		151505	080202	3/16	3/32	0.091	0.008	0.079	7°		○	○	
		15151	080204	3/16	3/32	0.091	1/64	0.083	7°		○	○	
		15152	080208	3/16	3/32	0.091	1/32	0.087	7°		○	○	
		WBMT 12105L-SE	WBMT 060102L-SE	5/32	1/16	0.091	0.008	0.051	5°	1	○		F65, F66, F67
		WBMT 12102L-NE	WBMT 060101L-NE	5/32	1/16	0.091	0.004	0.067	5°	1	○		
		NEW 12105L-NE	060102L-NE	5/32	1/16	0.091	0.008	0.063	5°		○		
		1211L-NE	060104L-NE	5/32	1/16	0.091	1/64	0.063	5°		○		
		WBMT 12102L	WBMT 060101L	5/32	1/16	0.091	0.004	0.075	5°	1	○	○	
		12105L	060102L	5/32	1/16	0.091	0.008	0.075	5°		○	○	
		1211L	060104L	5/32	1/16	0.091	1/64	0.075	5°		○	●	

Part Number	Applicable Toolholder Page
TP..22_	E29, F49~ F50

Part Number	Applicable Toolholder Page
VB..22_	E30~ E31, E36, F61~ F63
VB..33_	E30~ E31, F61~ F63

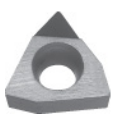
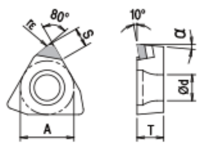
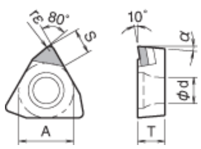
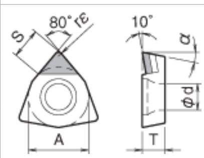
● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

CBN & PCD tools sold in 1 piece boxes.

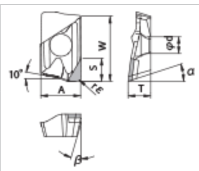
NEW ITEMS!

Positive

Positive Insert with Hole

Edge Prep.			N	Non-Ferrous Metals (with Interruption)							◕		
			N	Non-Ferrous Metals (without Interruption)							●		
All PCD Items	Sharp Edge		S	Titanium Alloys (with Interruption)							◕		
			S	Titanium Alloys (without Interruption)							●		
Insert	ANSI Part Number	ISO Part Number	Dimensions (in) A	T	Ød	rε	S	Angle (°) α	No. of Edges	PCD KPD001	KPD010	Toolholder Page	
 	WBMT 151505L-SE NEW	WBMT 080202L-SE	3/16	3/32	0.091	0.008	0.063	5°	1	○		F65 F66 F67	
	WBMT 151505L-NE	WBMT 080202L-NE	3/16	3/32	0.091	0.008	0.083	5°	1	○			
	15151L-NE	080204L-NE	3/16	3/32	0.091	1/64	0.083			○			
	WBMT 151505L	WBMT 080202L	3/16	3/32	0.091	0.008	0.094	5°	1	○	○		
	15151L	080204L	3/16	3/32	0.091	1/64	0.091			○	○		
 	WPMT 21505SE	WPMT 110202SE	1/4	3/32	0.110	0.008	0.083	11°	1	○			
	WPMT 21505NE	WPMT 110202NE	1/4	3/32	0.110	0.008	0.106	11°	1	○			
	WPMT 21505	WPMT 110202	1/4	3/32	0.110	0.008	0.122	11°	1		●		

Milling Inserts

Edge Prep.		N	Non-Ferrous Metals (with Interruption)								○		◕	
All PCD Items	Sharp Edge	S	Titanium Alloys (with Interruption)								○		◕	
Insert	ANSI Part Number	Dimensions (mm) A	T	Ød	W	rε	S	α	Angle (°) β	No. of Edges	PCD KPD001	KPD010	KPD230	Toolholder Page
 	BDMT 11T302FR	6.7	3.8	2.8	11.0	0.2	3.6	18°	13°	1	●		○	M3
	11T304FR	6.7	3.8	2.8	11.0	0.4	3.6	18°	13°		●		○	

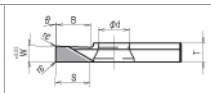
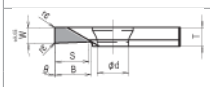
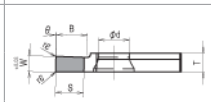
● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

CBN & PCD tools sold in 1 piece boxes.

Grooving

1 - E d g e

Edge Prep.			N	Non-Ferrous Metals (with Interruption)	●
All PCD Items	Sharp Edge			Non-Ferrous Metals (without Interruption)	●
			S	Titanium Alloys (with Interruption)	●
				Titanium Alloys (without Interruption)	●

Insert		ANSI Part Number	Dimensions (mm) W±0.0012 (in)	W±0.03 (mm)	B	+0.00 -0.05 rε	T	H	h1	Ød	S	Angle (°) θ	No. of Edges	PCD KPD001	Toolholder Page
Turning Grooving		TKF12R/L 200-AS	0.079	2.0	5.0	0.1	3	8.7	7.3	5	5.5	0°	1	Ⓡ	E12
		250-AS	0.098	2.5	5.0	0.1	3	8.7	7.3	5	5.5	0°		○	
		TKF16R/L 250-AS	0.098	2.5	8.0	0.1	4	9.5	8.0	5	6.5	0°	1	○	
		TKF12R/L 200-ASR	0.079	2.0	5.0	0.1	3	8.7	7.3	5	5.5	0°	1	Ⓛ	
		NEW 250-ASR	0.098	2.5	5.0	0.1	3	8.7	7.3	5	5.5	0°		Ⓛ	
	 Left-hand insert shown with right-hand PCD edge	TKF16R/L 250-ASR	0.098	2.5	8.0	0.1	4	9.5	8.0	5	6.5	0°	1	Ⓛ	
External Grooving (Turning is Possible)		TKF12R/L 150-NB	0.059	1.5	3.5	0.1	3	8.7	8.3	5	2.0	0°	1	○	
		200-NB	0.079	2.0	4.0	0.1	3	8.7	8.3	5	3.0	0°		○	
		250-NB	0.098	2.5	4.0	0.1	3	8.7	8.3	5	3.0	0°		○	
		250-NB4.5	0.098	2.5	5.0	0.1	3	8.7	8.3	5	4.5	0°		○	

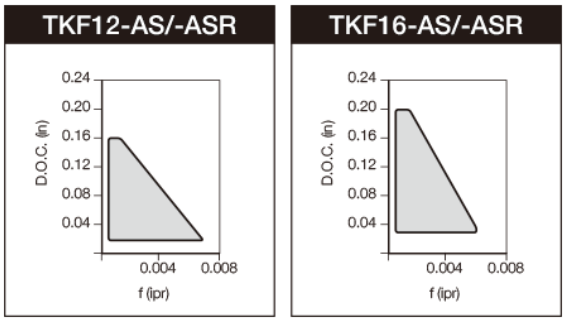
- Lead angle (front cutting edge angle: θ) shows the angle when installed into toolholder
- TKF PCD inserts are only for turning and grooving
- Cut-off is not recommended.
- Dimension B shows available grooving depth

◆ Insert Identification System

TKF	12	R	200	-	AS	
TKF	12	L	200	-	AS	R

- TKF / TKF: Insert Type
- 12 / 12: Insert Size
- R / L: Insert Hand
  - R : Right-hand
  - L : Left-hand
- 200 / 200: Width (Edge Width)
- AS / AS: Name of Chipbreaker
  - AS : AS Chipbreaker
  - NB : Without Chipbreaker
- R: PCD Insert Hand
  - Without Indication: The edge hand is the same as the insert hand.
  - R : Right-hand

● Applicable Range



- TKF PCD inserts are only for turning and grooving
- Cut-off is not recommended

Note) 1. The cutting edge of the TKF-AS/-ASR will be 1mm lower than the center line when attached to the KTKF toolholder (Ref. **Fig.1**). Adjust the height by making NC lathe parameter settings or inserting a plete.

2. If the 1mm adjustment is not possible on your automatic lathe, use the TKF-NB (Ref. **Fig.2**).

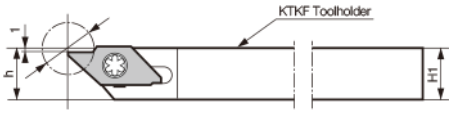


Fig.1 When a TKF-AS/-ASR insert is attached
(The cutting edge is 1mm lower than the center line.)

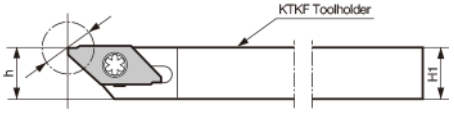
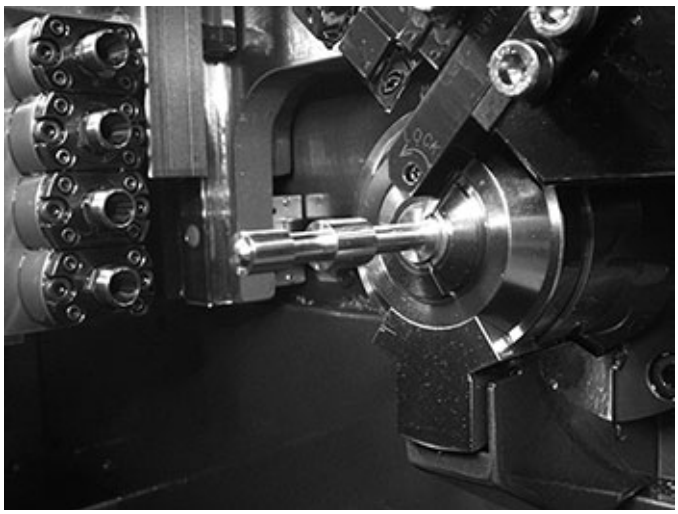


Fig.2 When a TKF-NB insert is attached

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

When Using TKF-AS Inserts

KTKF toolholder is multi-functional for non-ferrous and non-metal materials when combined with a TKF-AS insert. **(Fig.1)**



Example of Spool Cutting

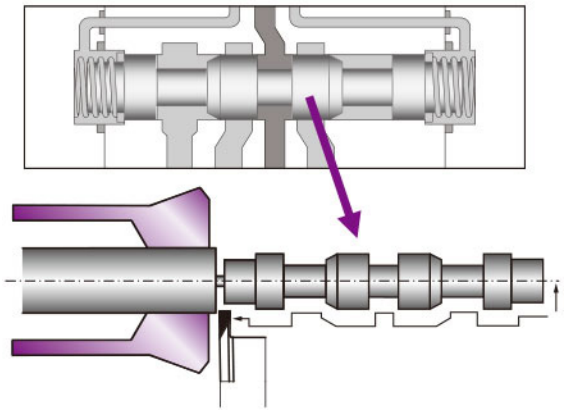


Fig.1 Example of the pass of KTKF toolholder + TKF-AS insert

Recommended Cutting Conditions (TKF12 / TKF16)

Workpiece Material		PCD		Remarks
		KPD001		
		Grooving	Turning	
Aluminum alloys	Cutting speed Vc (sfm)	975~4925		Wet
	Feed rate f (ipr)	0.0004~0.0012	0.0008~0.0047	
Brass	Cutting speed Vc (sfm)	325~1150		
	Feed rate f (ipr)	0.0004~0.0020	0.0008~0.0059	

External Grooving Inserts

1 - Edge

Grooving Inserts (1-edge)

Edge Prep.: All PCD Items / Sharp Edge

N	Non-Ferrous Metals (with Interruption) ●
	Non-Ferrous Metals (without Interruption) ●
S	Titanium Alloys (with Interruption) ●
	Titanium Alloys (without Interruption) ●

Insert	ANSI Part Number	ANSI Old Part Number	W±0.0012 (in)	W±0.03 (mm)	B	rε	A	T	Ød	S	No. of Edges	PCD KPD001	PCD KPD010	Toolholder Page
External Internal Grooving	GBA32R/L 125-010	GBA32R/L 125	0.049	1.25	2.0	0.1	9.525	3.18	4.4	1.7	1		Ⓡ	
	150-010	150	0.059	1.50	2.0	0.1	9.525	3.18	4.4	1.7		Ⓡ	Ⓡ	
	GBA43R/L 125-010	GBA43R/L 125	0.049	1.25	2.0	0.1	12.700	4.76	5.5	1.9			○	
	150-010	150	0.059	1.50	3.5	0.1	12.700	4.76	5.5	1.9		○	○	G12 G13
	200-010	200	0.079	2.00	3.5	0.1	12.700	4.76	5.5	1.9	1	○	○	
	250-010	250	0.098	2.50	4.0	0.1	12.700	4.76	5.5	1.9		○	○	
	300-010	300	0.118	3.00	4.0	0.1	12.700	4.76	5.5	1.9		○	○	
External Grooving	TGF32R/L 125-010	-	0.049	1.25	2.0	0.1	9.525	3.18	4.5	1.7		Ⓡ		
	150-010	-	0.059	1.50	2.0	0.1	9.525	3.18	4.5	1.7	1	Ⓡ		G4 G5
	200-010	-	0.079	2.00	2.5	0.1	9.525	3.18	4.5	1.9		Ⓡ		

Insert	ANSI Part Number	ANSI Old Part Number	W±0.0020 (in)	W±0.05 (mm)	rε	L	H	M	S	No. of Edges	PCD KPD001	PCD KPD010	Toolholder Page
External Grooving	GMN 2	-	0.079	2.00	0.2	20	4.3	1.8	2.9		○	○	
	3	-	0.118	3.00	0.2	20	4.3	2.3	2.9		○	○	
	4	-	0.157	4.00	0.2	20	4.3	3.3	2.9	1	○	○	G30 G31
	5	-	0.197	5.00	0.2	20	4.3	4.2	2.9		○	○	
	6	-	0.236	6.00	0.2	20	4.3	5.2	2.9			○	

Deep Grooving Inserts (1-edge)

Edge Prep.: All PCD Items / Sharp Edge

N	Non-Ferrous Metals (with Interruption) ●
	Non-Ferrous Metals (without Interruption) ●
S	Titanium Alloys (with Interruption) ●
	Titanium Alloys (without Interruption) ●

Insert	ANSI Part Number	W±0.0008 (in)	W±0.02 (mm)	rε	L	H	M	S	No. of Edges	PCD KPD001	Toolholder Page
External Deep Grooving NEW	GDGS 2020N-020NB	0.079	2.0	0.2	20	4.3	1.8	2.9		○	
	3020N-020NB	0.118	3.0	0.2	20	4.3	2.3	2.9		○	
	4020N-020NB	0.157	4.0	0.2	20	4.3	3.3	2.9	1	○	G19 ~ G21
	5020N-020NB	0.197	5.0	0.2	20	4.3	4.2	2.9		○	
	6020N-020NB	0.236	6.0	0.2	20	4.3	5.2	2.9		○	

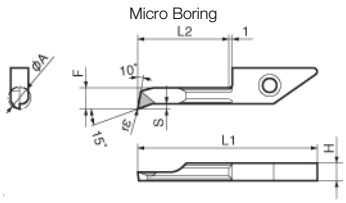
● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

NEW ITEMS!

System Tip-Bars

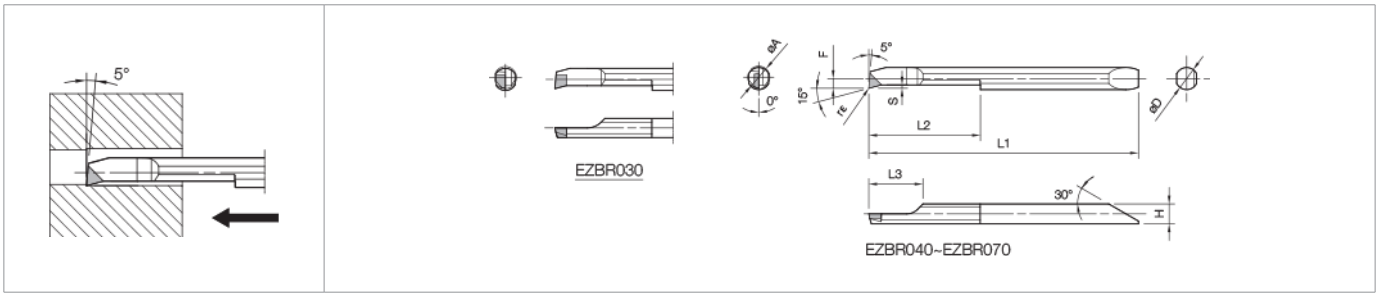
Micro Boring

Edge Prep.			N	Non-Ferrous Metals (with Interruption)	●		
				Non-Ferrous Metals (without Interruption)	●		
All PCD Items	Sharp Edge		S	Titanium Alloys (with Interruption)	●		
				Titanium Alloys (without Interruption)	●		

Insert	ANSI Part Number	Min. Bore Dia. ØA	Dimensions (mm) H	L1	L2	F	S	rε	No. of Edges	PCD KPD001	PCD KPD010	Toolholder Page
Micro Boring 	VNBR 0411-02NB	4	3.9	30.8	11	3.5	0.5	0.2	1	○	○	
	0420-02NB	4	3.9	39.8	20	3.5	0.5	0.2		○	○	
	VNBR 0511-02NB	5	3.9	30.8	11	4.5	0.7	0.2	1	○	○	
	0520-02NB	5	3.9	39.8	20	4.5	0.7	0.2		○	○	F32 F33
	VNBR 0620-02NB	6	3.9	39.8	20	5.3	1.0	0.2	1	○	○	
	0630-02NB	6	3.9	49.8	30	5.3	1.0	0.2		○	○	
	VNBR 0720-02NB	7	3.9	39.8	20	6.2	1.0	0.2	1	○	○	
	0730-02NB	7	3.9	49.8	30	6.2	1.0	0.2		○	○	

EZ Bar

EZB-NB : PCD NEW



EZ Bar Dimensions

Edge Prep.			N	Non-Ferrous Metals (with Interruption)	●	
				Non-Ferrous Metals (without Interruption)	●	
All PCD Items	Sharp Edge		S	Titanium Alloys (with Interruption)	●	
				Titanium Alloys (without Interruption)	●	

ANSI Part Number	Min. Bore Dia. ØA	ØD	H	L1	L2	L3	F	S	rε	No. of Edges	PCD KPD001	Applicable Sleeves Page
EZBR 040040-003NB	4	4	3.6	48.8	20	9.8	1.75	0.5	$0.035^{+0.015}$	1	○	F20 ~ F24
050050-003NB	5	5	4.6	58.1	25	9.8	2.25	0.5			○	
060060-003NB	6	6	5.6	66.1	30	11.8	2.75	0.5			○	
070070-003NB	7	7	6.6	74.1	35	11.8	3.25	0.5			○	

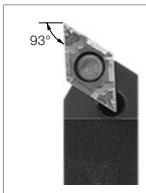
CBN & PCD tools sold in 1 piece boxes.

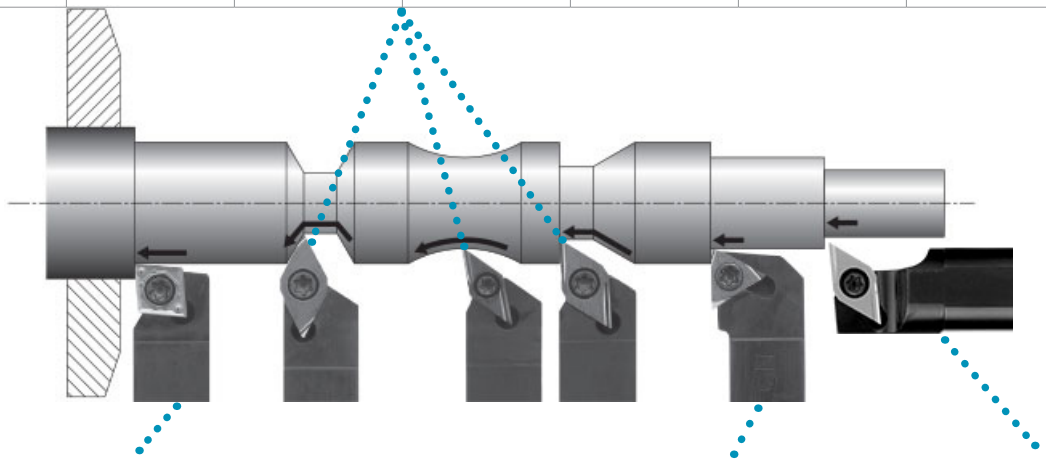
● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

TURNING

E1 - E45

External / Copying

						
ADJC-FF	SDJC-FF	SDJC	SDLC-FF SDLP-FF	SDLN	SDNC-F	SDNC
Back Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp	Screw Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp	Screw Clamp
E24	E25	E25	E26, E28	E38	E27	E27



External / Facing

			
ACLC-FF	SCLC-FF	SCLC	SCLN-FF
Back Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp	Screw Clamp Without Offset
E22	E23	E23	E38

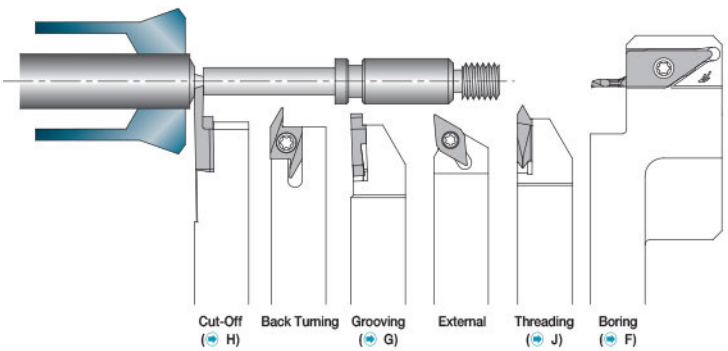
External

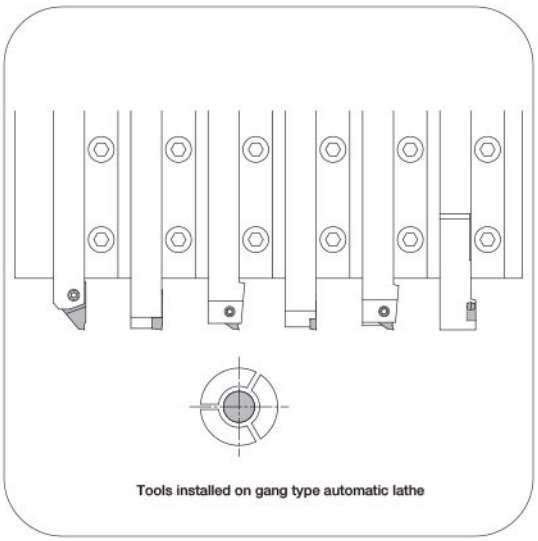
	
STGC(P)	STLN-FF
Screw Clamp	Screw Clamp Without Offset
E29	E39

External Sleeve Holder


S...SDLC
Screw Clamp Shank Dia. Ø12.0mm~Ø25.4mm
E35

Tooling Example ① - CNC Automatic Lathe (Gang Type)

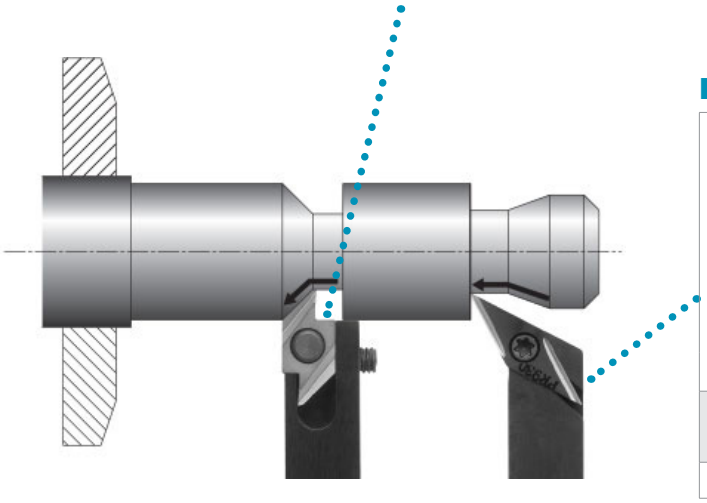




Tools installed on gang type automatic lathe

Back Turning

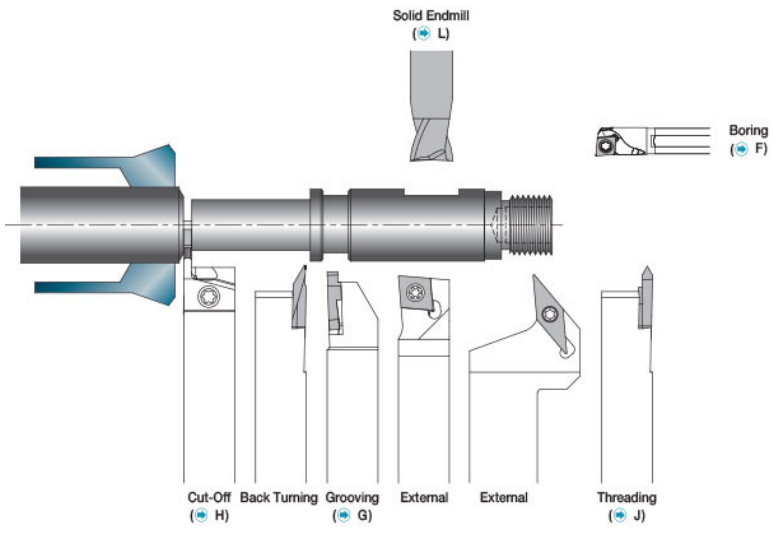
						
AABS-40F	SABS-40F	AABW-40F	SABW-40F	AABW-50F	SABW-50F	KTKF
Back Clamp Edge Width : 2.8mm D.O.C. : ~4.0mm	Screw Clamp Edge Width : 2.8mm D.O.C. : ~4.0mm	Back Clamp Edge Width : 4.7mm D.O.C. : ~4.0mm	Screw Clamp Edge Width : 4.7mm D.O.C. : ~4.0mm	Back Clamp Edge Width : 4.7mm D.O.C. : ~5.0mm	Screw Clamp Edge Width : 4.7mm D.O.C. : ~5.0mm	Screw Clamp Edge Width : 1.5mm~3.8mm D.O.C. : 1.8mm~5.5mm
E17	E17	E18	E18	E19	E19	E12

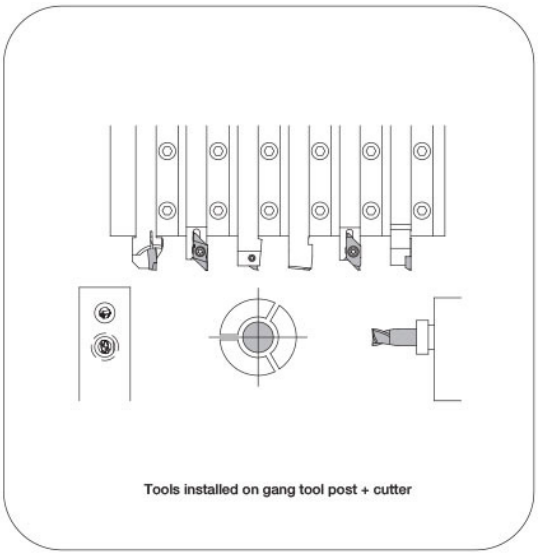


External / Facing / Copying / Undercutting

	
SVPB	SVPP-FF
Screw Clamp	Screw Clamp (Without Offset)
E31	E33

Tooling Example ② - CNC Automatic Lathe (Gang Type)





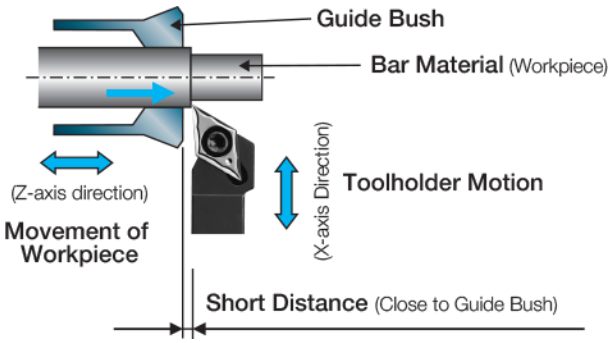
Goose-neck Toolholder

for Swiss Tool Automatic Lathe (Gang Edge Tool Post)

Swiss Tool Automatic Lathe (Guide BushingSystem)

The Goose-neck Holder works with automatic lathes that do not move toolholders in longitudinal direction (Z-axis)

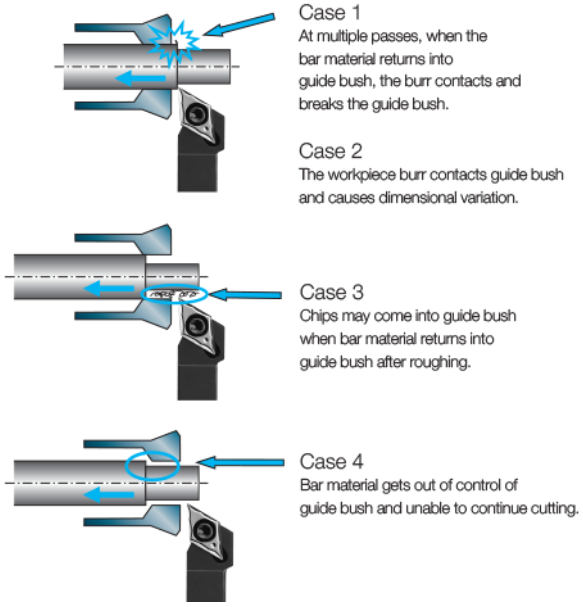
When Using a Conventional Toolholder



Tool position is fixed and workpiece moves longitudinally

Problems When Using a Conventional Toolholder

Problems When Machining with a Conventional Toolholder



Case 1
At multiple passes, when the bar material returns into guide bush, the burr contacts and breaks the guide bush.

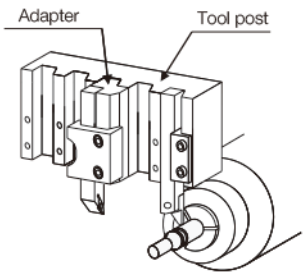
Case 2
The workpiece burr contacts guide bush and causes dimensional variation.

Case 3
Chips may come into guide bush when bar material returns into guide bush after roughing.

Case 4
Bar material gets out of control of guide bush and unable to continue cutting.

Toolholder Installation Problems When Using a Conventional Toolholder

1) Additional space is required for an adapter.
2) Toolholder's handlingis difficult due to limited space.
3) It is necessary to buy an adapter.
4) An adapter may interfere with the next toolpost



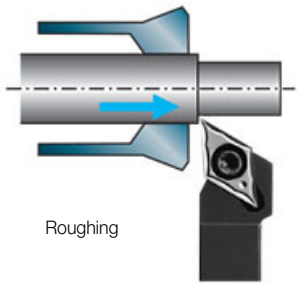
ADVANTAGES

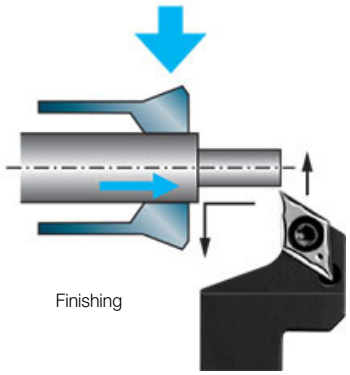
of the Goose-Neck Holder

1) Additional finishing process improves machining precision
2) Chips do not enter guide bushing
3) Large chip evacuation space produces better chip control

Available for machining after roughing without returning bar material into guide bushing, prevents damages and improves precision.

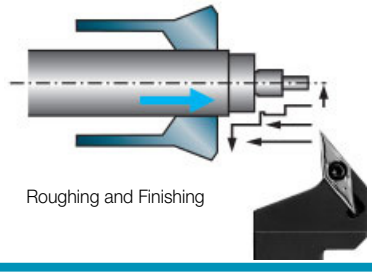
Pattern 1



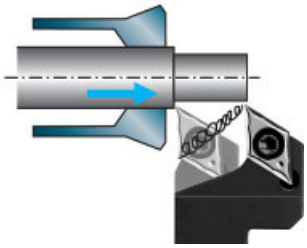


Available for machining from roughing to finishing with a single Goose-neck Holder.

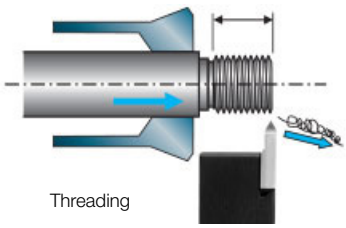
Pattern 2



For smooth chip control



Optimized location of the cutting edge makes enough space for smooth chip evacuation of long chipping materials

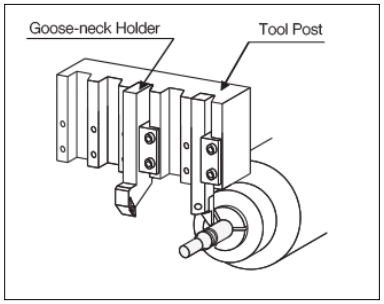


With conventional toolholders, chips can be involved in guide bushing and damage workpiece

Advantages of Toolholder Installation

Using Goose-neck Holder

1) Maximum number of toolholders can be attached
2) No interference with next tool post

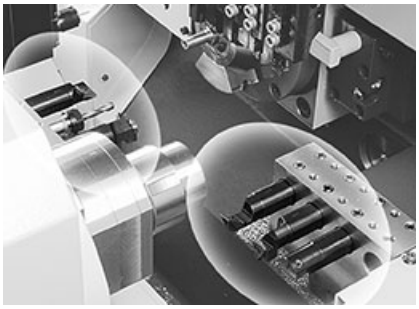


External Sleeve Holder Tools

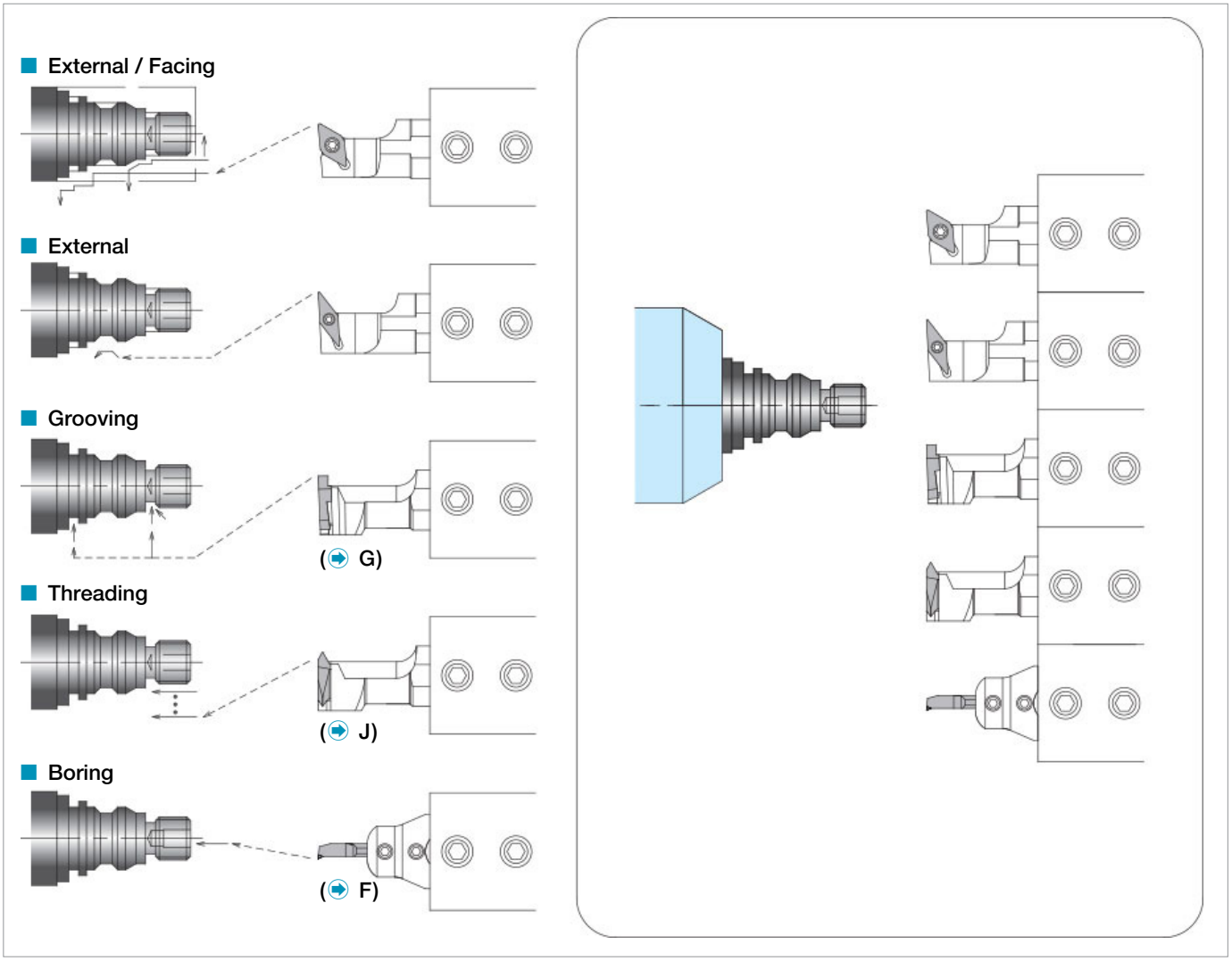
More Tools for CNC Automatic Lathe

Use External Sleeve Holders ➡➡➡ With Attachable Tools During Intricate Part Machining

			
S...SCLC	S...SDUC	S...SDLC	S...SVUB(C)
Screw Clamp Shank Dia. Ø12.0mm~Ø25.4mm	Screw Clamp Shank Dia. Ø14.0mm~Ø25.4mm	Screw Clamp Shank Dia. Ø12.0mm~Ø25.4mm	Screw Clamp Shank Dia. Ø12.0mm~Ø25.4mm
➡ E34	➡ E35	➡ E35	➡ E36



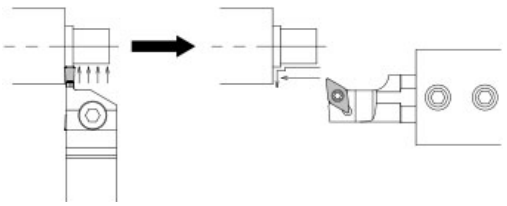
Tooling Example ③ - CNC Automatic Lathe (Opposed Gang Type)



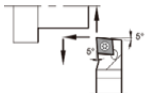
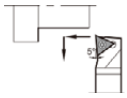
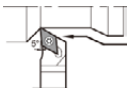
See **Page** ➡ **R19~R24** for Automatic Lathe List of Machine Manufacturer and Tooling Examples

Examples of Finishing by Sleeve Holder

1) Roughing by Grooving Toolholder
2) Finishing by Sleeve Holder Improves Chip Control and Reduces Cutting Time

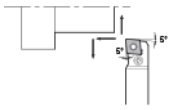
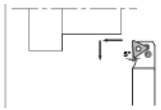


Double-Sided Swiss Tools (Screw Clamp)

Application	External / Facing	External / Up Facing	External / Copying
Cutting Edge Angle	95°	95°	95°
Screw Clamp (Without Offset)			
Ref. Page	E38	E39	E38

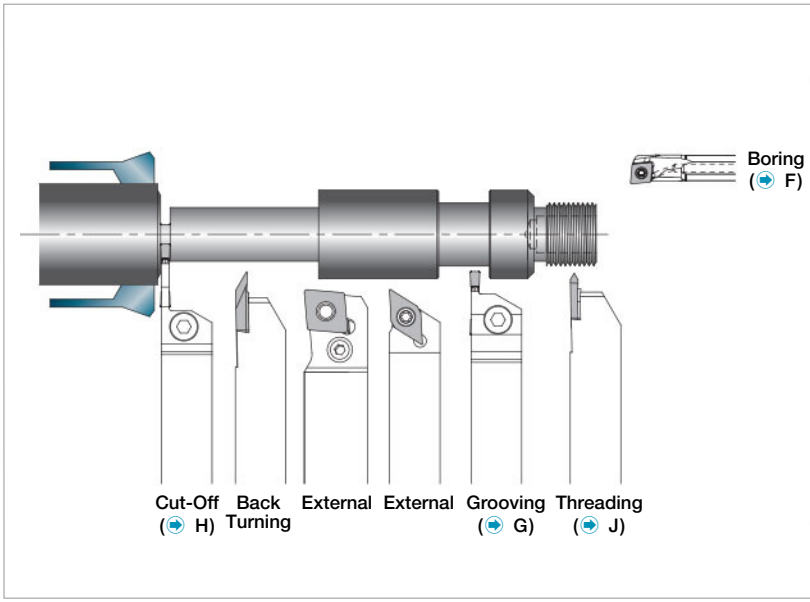
The double-sided design offers less cost per insert and more stability.
Sharp cutting performance equivalent to conventional positive inserts.

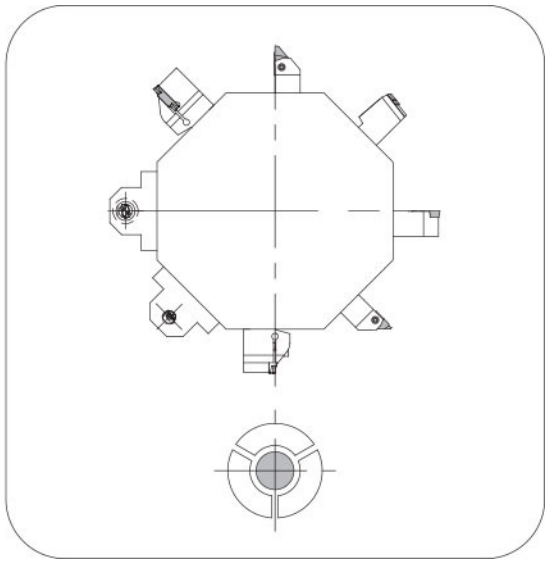
Double-Sided Toolholder for Automatic Lathe (Without Offset / Lever Lock)

Application	External / Facing	External / Up Facing
Cutting Edge Angle	95°	95°
Screw Clamp (Without Offset)		
Ref. Page	E40	E41

The Lever Lock type is available for small tools with external turning.

Double-Sided Toolholder for Automatic Lathe (Without Offset / Lever Lock)





See **Page** **R19~R24** for Automatic Lathe List of Machine Manufacturer and Tooling Examples

Achieving Better Chip Control During External Turning

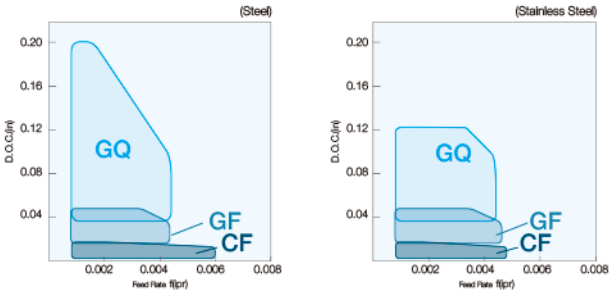
1) Use chipbreakers for various depths of cut

- Applicable to high precision cutting due to a finely ground sharp edge.
- The mirror polished insert provides improved adhesion resistance and surface finish.

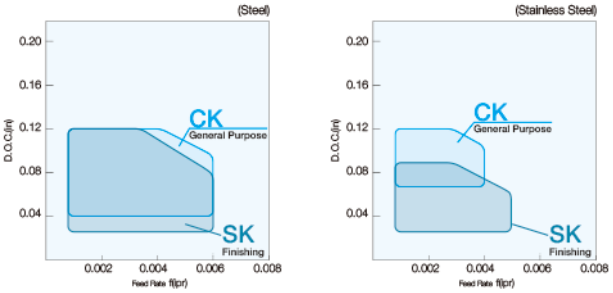
2) Improved chip control by cutting in 2 passes; roughing and finishing

- If chip control is not improved in 1 pass, use Goose-neck Holders or Sleeve Holders

Chip Processing



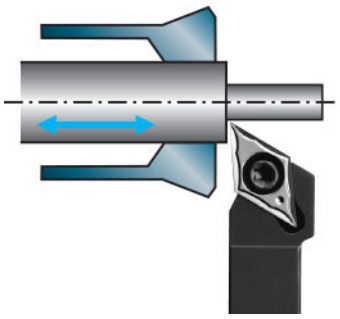
Low Resistance



Problems

Finishing with a General Toolholder

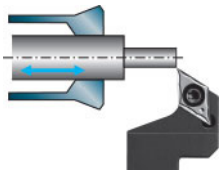
Bad Chip Control



After Roughing

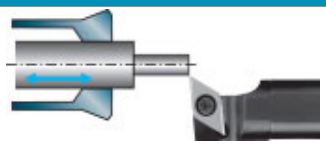
Solution ①

Finishing with a Goose-neck Holder



Solution ②

Finishing with a Sleeve Holder



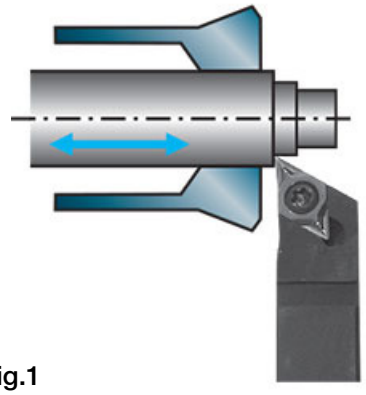
Choosing Toolholders to Improve Productivity

Application	Tooling Example	Toolholder	Advantages	Workpiece diameter	D.O.C. for medium to roughing of carbon steel
Medium to Roughing	SCLN-FF SDLN-FF STLN-FF	Small Double-Sided Tooling	Cost Reduction	Ø6mm or more	D.O.C.=~2.5mm
	PCLN-FF PTLN-FF	Toolholder for Double Sided Tooling (Lever Lock) FP-TK Chipbreaker	Cost Reduction	Ø16mm or more	D.O.C.=1.5~5.0mm
Medium to Roughing + Finishing	➡ E9 Fig.1	Small Double-Sided tooling (Screw Clamp)	Cost Reduction	Ø16mm or more	D.O.C.=~2.5mm
		Goose-neck Holder (Sleeve Holder)	Better Chip Control	-	-
	➡ E9 Fig.2	Toolholder for Double-Sided Tooling (Lever Lock) FP-TK Chipbreaker	Cost Reduction	Ø16mm ~ Ø32mm	D.O.C.=1.5~5.0mm
		Goose-neck Holder (Sleeve Holder)	Better Chip Control	-	-
	➡ E9 Fig.3	Grooving Toolholders	Long curled chips are evacuated toward a fixed direction.	Ø16mm ~ Ø32mm	D.O.C.=4.0mm or more
		Goose-neck Holder (Sleeve Holder)	Better Chip Control	-	-

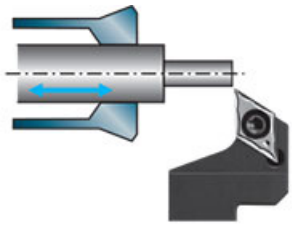
Tool Selection Examples for Productivity Improvement

Guideline for Roughing: D.O.C.=~2.5mm

Roughing
Double-Sided Tooling for Automatic Lathe



Finishing ①
Goose-neck Holder



Finishing ②
Sleeve Holder

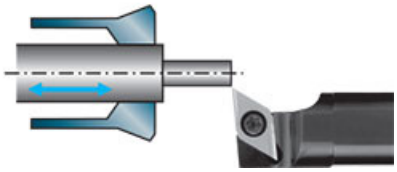
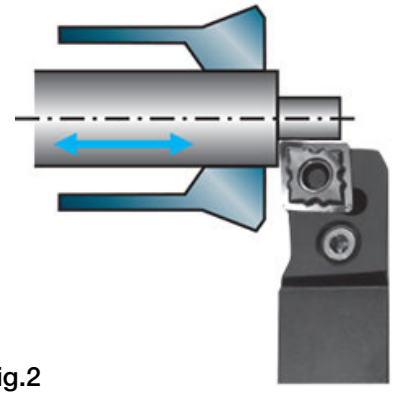


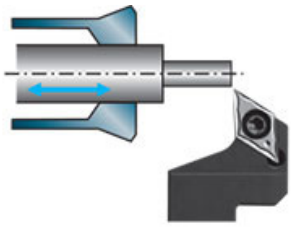
Fig.1

Guideline for Roughing: D.O.C.=1.5mm~5.0mm

Roughing
Ground Insert with FP-TK Chipbreaker



Finishing ①
Goose-neck Holder



Finishing ②
Sleeve Holder

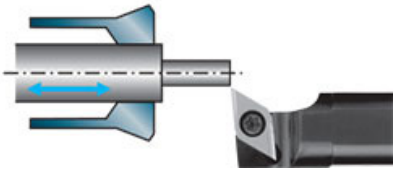
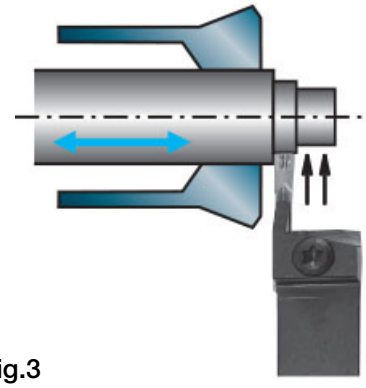


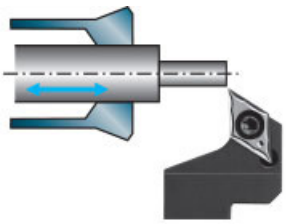
Fig.2

Guideline for Roughing: D.O.C.=4.0mm

Roughing
Grooving Toolholder



Finishing ①
Goose-neck Holder



Finishing ②
Sleeve Holder

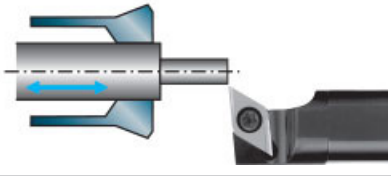
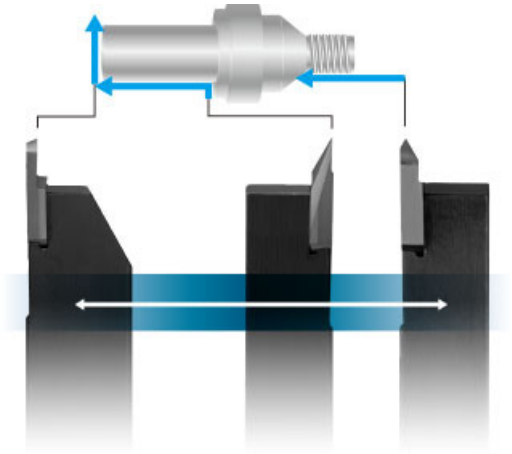


Fig.3

Small Parts Machining

KTKF

E12



Back Turning

TKFB

E12

NEW

GQ Chipbreaker

Double function chipbreaker for improved chip control

PR1425
Insert grade for steel

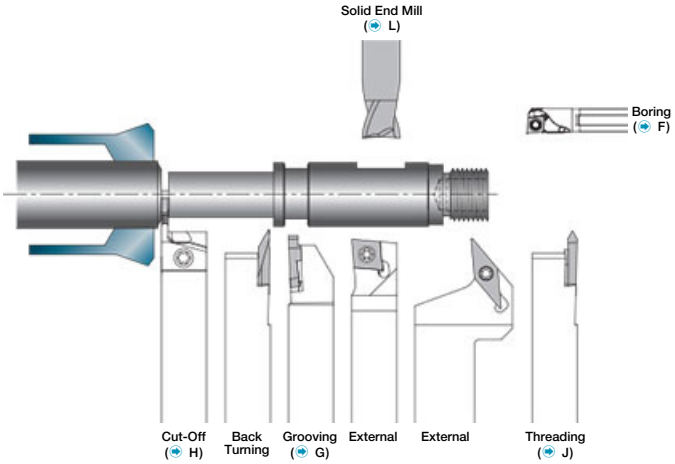
PR1225
Insert grade for stainless steel

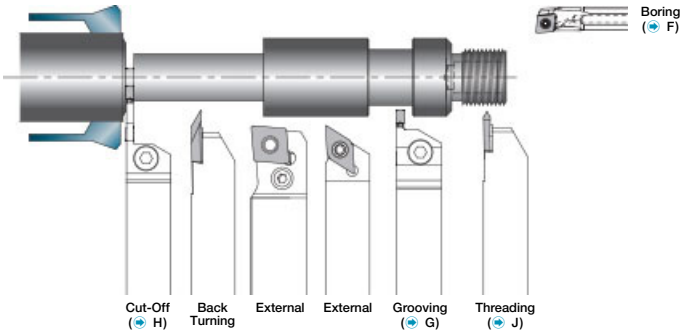
New "TKF..L-ASR" insert added to "TKF-AS" PCD Inserts

GQ Chipbreaker

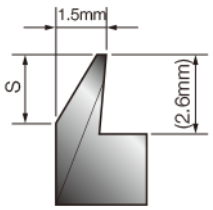
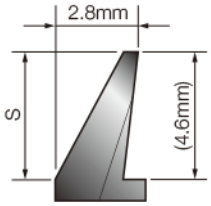
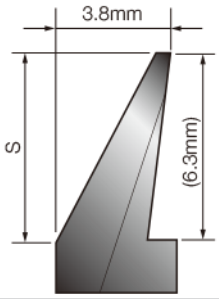
TKF-AS Type

Tooling Examples of KTKF Toolholders





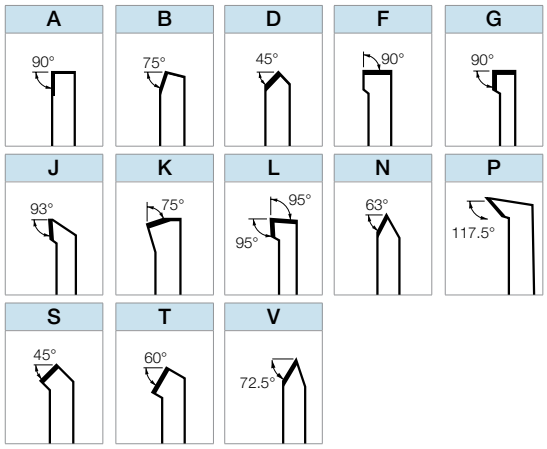
Cutting Edge Shape

For Small D.O.C.		For General Purpose		For Large D.O.C.	
					
Part Number	Cutting Edge Length **S**	Part Number	Cutting Edge Length **S**	Part Number	Cutting Edge Length **S**
TKFB12R15..	2.1	**TKFB12R28..**	4.2	**TKFB16R38..**	5.8
-	-	**TKFB12L28..**	4.4	**TKFB16L38..**	6.2
For small diameter workpieces or shorter lengths Minimum overhang length of toolholder, stable machining		For General Purpose Good Chip Control		Large D.O.C. Per Pass	

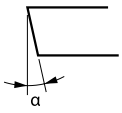
Square Shank Identification System

Clamping System	Insert Shape	Hand of Tool	Shank Height	Shank Width	Others					
A : Back Clamp **C** : Top Clamp **P** : Level Lock **S** : Screw Clamp	**C** : 80° Rhombic **D** : 55° Rhombic **S** : Square **T** : Triangle **V** : 35° Rhombic	**R** : Right-Hand **L** : Left-Hand **N** : Neutral	Shank Height (mm)	Shank Width (mm)	Optional Code Optional Mark or Number (FF : Without Offset)					
S	**C**	**L**	**C**	**R**	**12**	**12**	**JX**	–	**09**	**FF**

Lead Angle

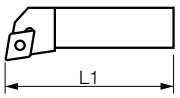


Insert Relief Angle



B : 5° Positive
C : 7° Positive
N : 0° Negative
P : 11° Positive

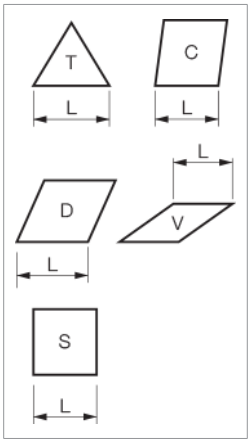
Toolholder Length



(mm)

F : 80 (85)	**JX** : 120
H : 100	**K** : 125
	M : 150

Insert Size



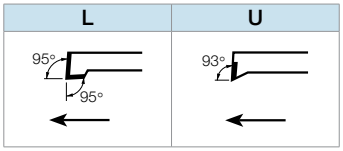
• Some back turning toolholders have Kyocera's unique descriptions

Sleeve Holder

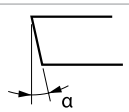
Shank	Toolholder Length	Clamping System	Insert Shape	Hand of Tool
S Steel	**F** : 80 (85) **G** : 90 **H** : 100 **K** : 125 (120)	**S** : Screw Clamp	**C** : 80° Rhombic **D** : 55° Rhombic **V** : 35° Rhombic	**L** : Left-Hand
S	**20**	**K** –	**S**	**C**	**L**	**C**	**L**	**09**

Shank Diameter

Cutting Edge Angle

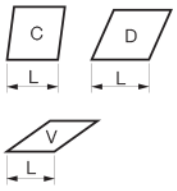


Insert Relief Angle



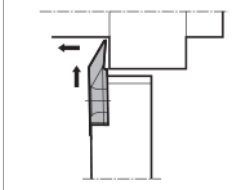
B : 5° Positive
C : 7° Positive

Insert Size



• The dimensions and specifications are subject to change for improvement without notice.
• Depending on the machine specifications such as attachment Dimensions, the symbol may not match the actual toolholder length.

KTKF / KTKF Goose-neck Holder



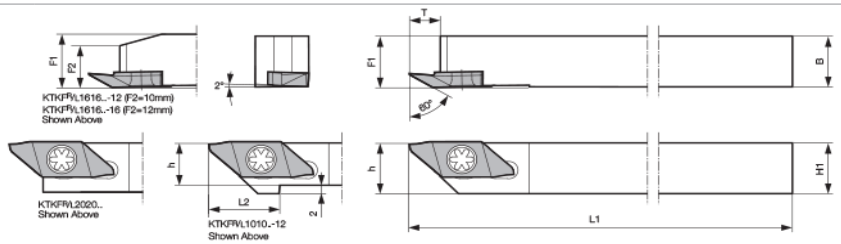
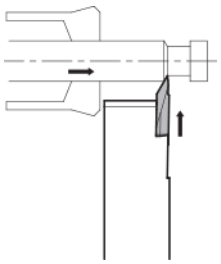


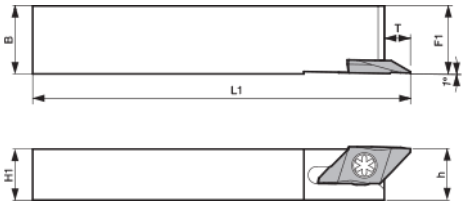
Fig.1

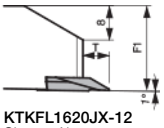
Right-hand Shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder



Goose-neck Holder





KTKFL1620JX-12
Shown Above

Fig.2

Left-hand Shown

Left-hand Insert for Left-hand Toolholder

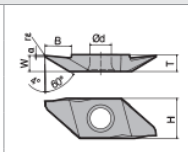
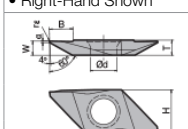
KTKF / KTKF Goose-neck Holder

Part Number		Stock R	Stock L	Unit	Dimensions H1=h	B	L1	L2	F1	T	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts
KTKFR/L	6-12JX	●	●	inch	0.375	0.375	4.750	0.590	0.375	0.236	Fig.1	SB-4590TRWN	LTW-10S	TKFB12R/L...
	8-12JX	●	●		0.500	0.500	4.750	-	0.500	0.236	Fig.1			
	10-12JX	●	●		0.625	0.625	4.750	-	0.625	0.236	Fig.1			
KTKFR/L	6-16JX	●	●		0.375	0.375	4.750	0.787	0.375	0.315	Fig.1	SB-4590TRWN	LTW-10S	TKFB16R/L...
	8-16JX	●	●		0.500	0.500	4.750	-	0.500	0.315	Fig.1			
	10-16JX	●	●		0.625	0.625	4.750	-	0.625	0.315	Fig.1			
KTKFR/L	1010JX-12	●	○	mm	10	10	120	15	10	6	Fig.1	SB-4590TRWN	LTW-10S	TKFB12R/L...
	1212JX-12	●	○		12	12	120	-	12	6	Fig.1			
	1616JX-12	●	○		16	16	120	-	16	6	Fig.1			
NEW	2020JX-12	●			20	20	120	-	20	6	Fig.1			
KTKFR/L	1010JX-16	○	○		10	10	120	20	10	8	Fig.1	SB-4590TRWN	LTW-10S	TKFB16R/L...
	1212JX-16	○	○		12	12	120	-	12	8	Fig.1			
	1616JX-16	○	○		16	16	120	-	16	8	Fig.1			
NEW	2020JX-16	○			20	20	120	-	20	8	Fig.1			
KTKFR/L	1212F-12	○			12	12	85	-	12	6	Fig.1	SB-4590TRWN	LTW-10S	TKFB12R/L...
	1212F-16	○			12	12	85	-	12	8	Fig.1			TKFB16R/L...
KTKFL	52-12JX		●	inch	0.500	0.625	4.750	-	0.625	0.236	Fig.2	SB-4590TRWN	LTW-10S	TKFB12L...
	62.5-12JX		●		0.625	0.750	4.750	-	0.750	0.236	Fig.2			
KTKFL	1216JX-12		○	mm	12	16	120	-	16	6	Fig.2	SB-4590TRWN	LTW-10S	TKFB12L...
	1620JX-12		○		16	20	120	-	20	6	Fig.2			

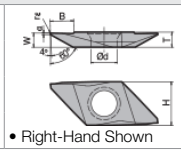
• Dimensions T shows the distance from the toolholder to the cutting edge

Recommended Cutting Conditions ➡ E45
For applicable PCD inserts, see page ➡ E16

Applicable Inserts ➡ B35

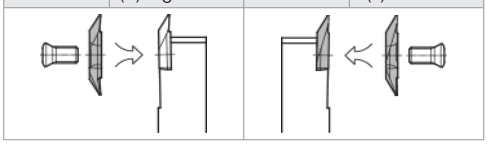
Insert (Photo Shows Right-Hand)	Part Number	Corner-R rε:mm (inch)
  • Right-Hand Shown	TKFB 12R15005M	<0.05 (<0.002)
	12R28005M	<0.05 (<0.002)
	12R28010M	<0.01 (<0.004)
	TKFB 16R38005M	<0.05 (<0.002)
	16R38010M	<0.01 (<0.004)
 • Left-Hand Shown	TKFB 12L28005MR	<0.05 (<0.002)
	12L28010MR	<0.01 (<0.004)
	TKFB 16L38005MR	<0.05 (<0.002)
	16L38010MR	<0.01 (<0.004)

Applicable Inserts (GQ Chipbreaker) ➡ B36

Insert (Photo Shows Right-Hand)	Part Number	Corner-R rε:mm (inch)
  • Right-Hand Shown	TKFB 12R28005-GQ	0.05 (<0.002)
	12R28015-GQ	0.15 (<0.006)
	TKFB 16R28005-GQ	0.05 (<0.002)
	16R28015-GQ	0.15 (<0.006)

Combination of Toolholders & Inserts (See Fig Below)

Toolholders	(R) Right hand	Toolholders	(L) Left hand
Inserts	(R) Right hand	Inserts	(L) Left hand



(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

TKFB-GQ Chipbreaker NEW

for Back-Turning

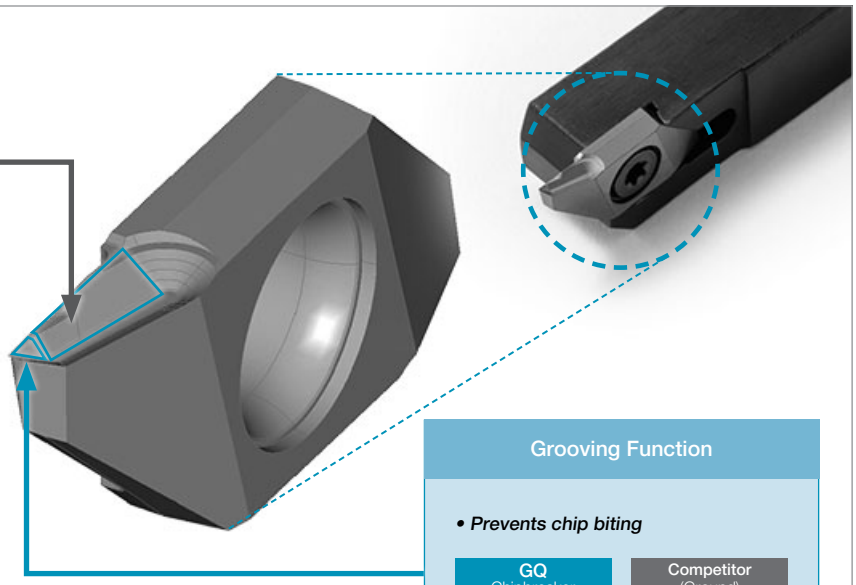
1 Orginal double-function chipbr

Turning Function

- *Prevents chip entanglement*

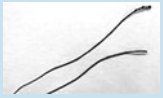
GQ Chipbreaker

Competitor (Ground)



Grooving Function

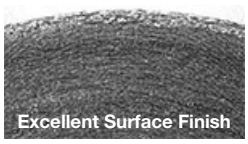
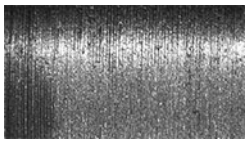
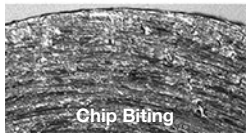
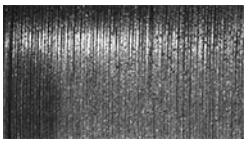
- *Prevents chip biting*

GQ Chipbreaker	Competitor (Ground)
	

2 Prevents chip biting and clogging for excellent surface finishes

Surface Finish Comparison

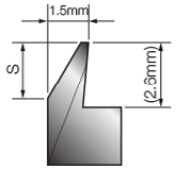
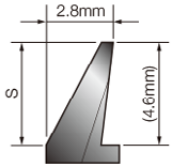
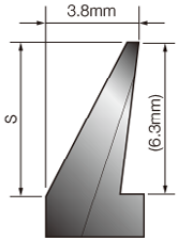
Cutting Conditions: Vc = 330sfm D.O.C. = 0.112" f = 0.008ipr (Grooving), 0.002ipr (Turning)
Workpiece: 1045 Steel

	GQ Chipbreaker		Competitor (Ground)	
	Grooving	Turning	Grooving	Turning
Worpiece Surface	 Excellent Surface Finish		 Chip Biting	
	Rz = 2.92 μm	Rz = 3.85 μm	Rz = 31.23 μm	Rz = 7.67 μm

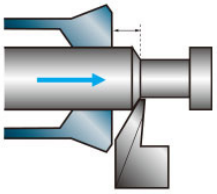
Reduced cycle time with excellent surface finish in a single pass!

Edge Tips Details and Selection Guide

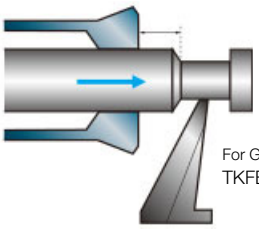
Cutting Edge Shape

For Small D.O.C.		For General Purpose		For Large D.O.C.	
					
Part Number	Cutting Edge Length **S**	Part Number	Cutting Edge Length **S**	Part Number	Cutting Edge Length **S**
TKFB12R15..	2.1	**TKFB12R28..**	4.2	**TKFB16R38..**	5.8
-	-	**TKFB12L28..**	4.4	**TKFB16L38..**	6.2
For small diameter workpieces or short length Minimum overhang length of toolholder, stable machining		For general purpose Good chip control		D.O.C. per pass is large.	

How to Select



For Small D.O.C.
TKFB12R15..

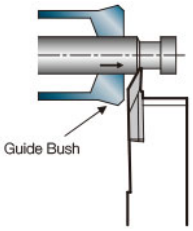
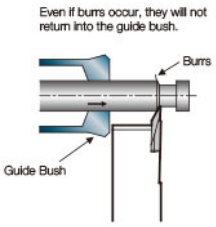


For General Purpose
TKFB12R28..

In case D.O.C. is same, if insert with narrower edge width is used, overhang length from guide bushing is shorter, which enables better stability due to less workpiece vibration.

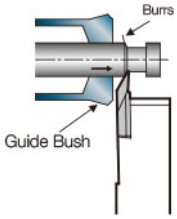
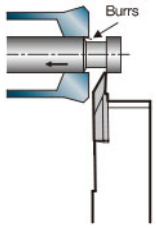
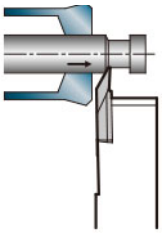
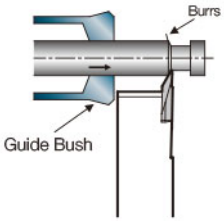
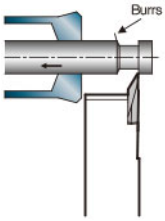
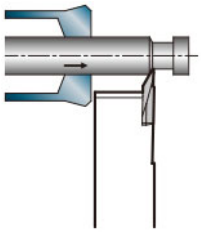
➡High Precusion Cutting

Choosing Hand of Back Turning Toolholder

(R) Right hand		Cutting close to guide bushing is possible Since TKFB12R15005M has a narrow cutting edge (width=0.059"), cutting close to guide bushing is possible ➡Good for small parts and high precision cutting
(L) Left hand		Cutting with distance from guide bushing Good chip control due to large space between the guide bushing and the tool. ➡How to improve chip control for roughing to finishing In case of using a left-hand toolholder in finishing, the burred portions of workpiece do not return into the guide bushing, which enables stability of external diameter. Also, a Left-hand toolholder prevents wear of guide bushing due to chip biting.

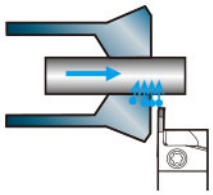
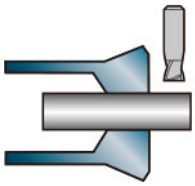
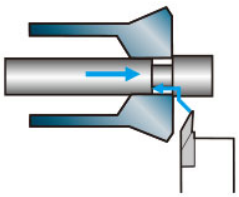
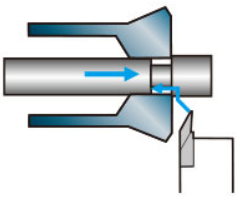
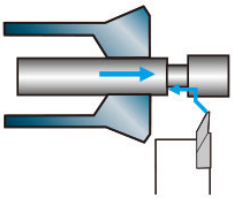
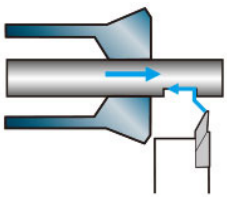
Workpiece Material Motion & How to Select Hand of Tool

When Roughing, Medium, & Finishing

	Roughing	Workpiece position after roughing	Finishing
(R) Right hand			
(L) Left hand			

※Good dimensional accuracy: If a L-hand toolholder is used, burrs on workpiece generated during roughing do not damage the guide bushing during finishing.

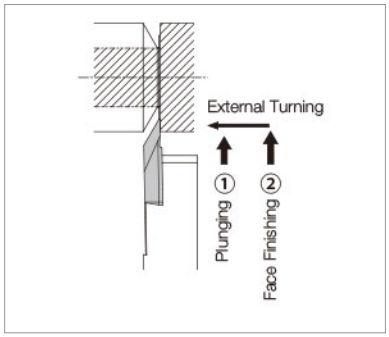
Chip Control Improvement During Back Turning

	① Chip control improvement by tool pass changes	② Chip control improvement by tool pass changes
Roughing / Pre-Stage Machining	● Roughing (1) GMM2420-020MW (Grooving) 	● Pre-stage Machining is Processed with Solid End Mill (1) 2FESW040-040-04 (Solid End Mill) 
Finishing (Countermeasure 1) Use Right-Hand Toolholder	(1) When Using TKFB12R28010M (Back Turning / Righ-hand)  **Advantages :** Smooth Surface Finish **Disadvantages :** If machining pass is long, the guide bushing can not support the workiece	(1) When Using TKFB12R28010M (Back Turning / Righ-hand)  **Advantages :** 1. Minimal deflection during long machining passes 2. Chips are broken into small pieces, though the workpiece material is elastic. **Disadvantages :** The pre-stage machining may cause fractures, because of interruption
Finishing (Countermeasure 2) Use Left-Hand Toolholder	(2) When Using TKFB12L28010M (Back Turning / Left-hand)  **Advantages :** 1. Smooth Surface Finish 2. High precision cutting if the machined portion does not contact the guide bushing **Disadvantages :** If machining pass is long, the guide bushing can not support the workiece	(2) When Using TKFB12L28010M (Back Turning / Left-hand)  **Advantages :** 1. Minimal deflection during long machining passes 2. Chips are broken into small pieces, though the workpiece material is elastic 3. High precision cutting if the machined portion does not contact the guide bushing **Disadvantages :** The pre-stage machining may cause fractures, because of interruption

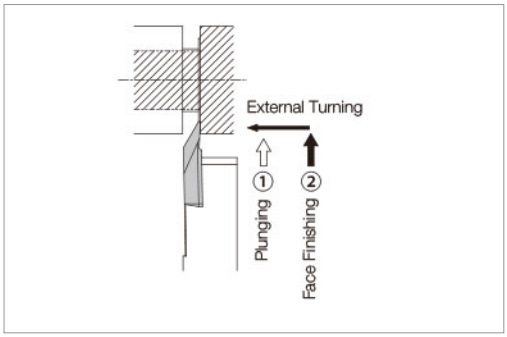
Peeled Surface Countermeasures During Face Back Turning

When peeled surface occurs on the workpiece face, please apply the countermeasures below.

● **Countermeasure 1** (Face Finishing)

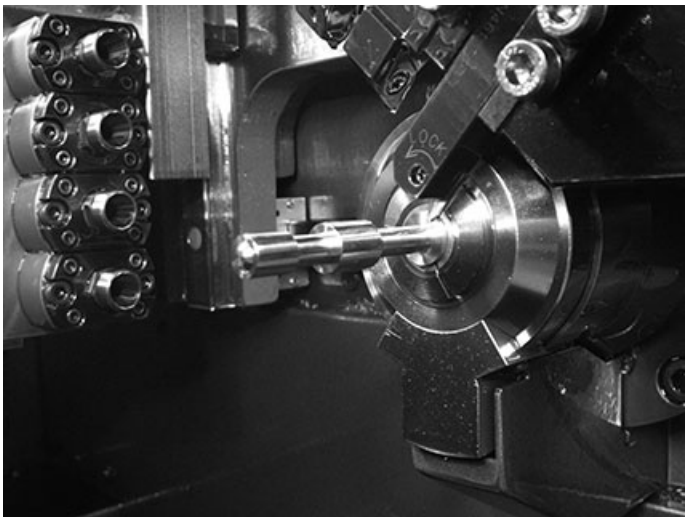


● **Countermeasure 2** (Face Finishing After Grooving)

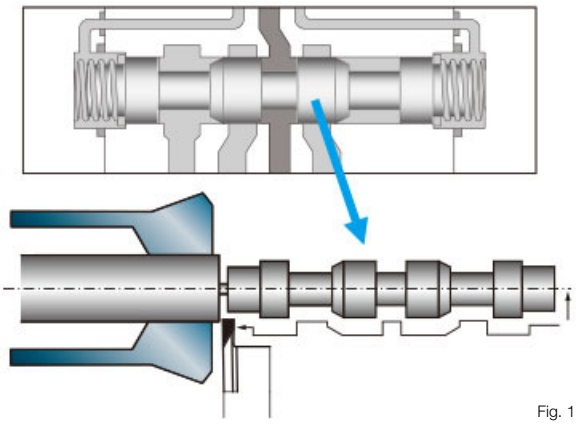


TKF-AS Inserts

The KTKF toolholder can be used as multi-functional tooling for non-ferrous and non-metal when combined with a TKF-AS insert. (See Fig. 1)



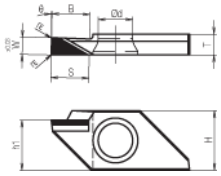
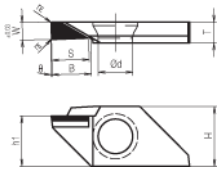
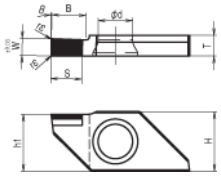
Example of Spool Cutting



Example of the pass of KTKF toolholder + TKF-AS insert

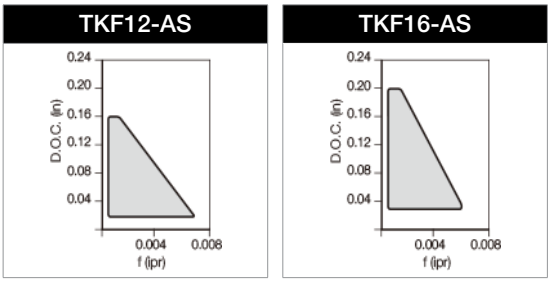
Fig. 1

Applicable Inserts C18

Inserts (Photo Shows Right-hand)		Part Number	
 Turning / Grooving	 Handed insert shows Right-hand	TKF12R/L	200-AS
			250-AS
		TKF16R/L	250-AS
	 Insert hand: L-hand / PCD edge hand: R-hand	TKF12L	200-ASR
			250-ASR
		TKF16L	250-ASR
 Grooving Inserts (Turning possible)	 Handed insert shows Right-hand	TKF12R/L	150-NB
			200-NB
			250-NB
			250-NB4.5

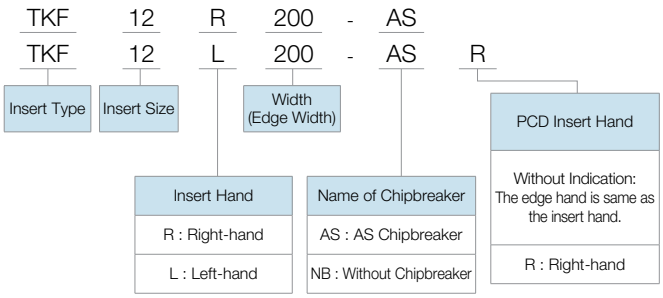
Applicable Toolholder E12
Recommended Cutting Conditions E45

Applicable Range



※ PCD inserts are for traversing and grooving.
※ Cut-off is not recommended with these inserts.

Insert Identification System



Note 1) When using TKF-AS/-ASR insert with KTKF toolholder, the edge position is 1.0mm below the center. (See **Fig.2**) Please adjust the edge height at the parameter of the NC lathe or using soleplates.

2) When the edge height can not be adjusted, please use TKF-NB insert. (**Fig.3**)

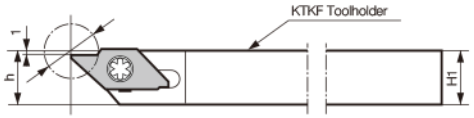


Fig.2 When TKF-AS/-ASR installed (the edge position: 1.0mm below the center)

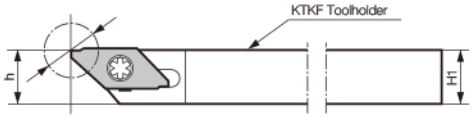
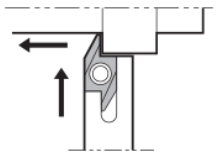
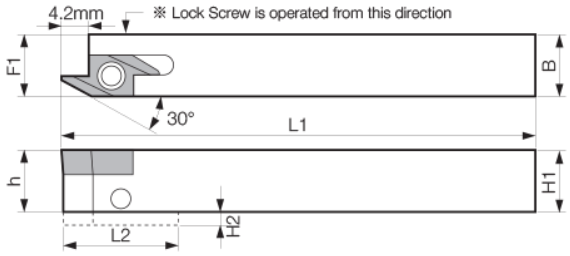


Fig.3 When TKF-NB installed

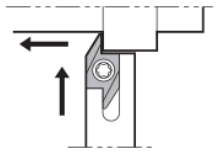
AABS (Screw Clamp 2.8mm • Depth 4.0mm MAX)

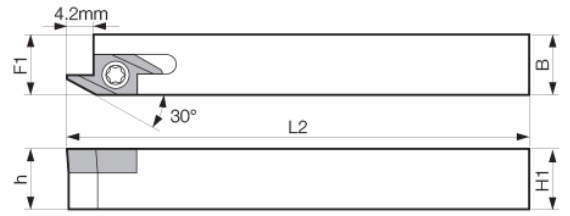




Right-hand Shown

SABS (Screw Clamp 2.8mm • Depth 4.0mm MAX)



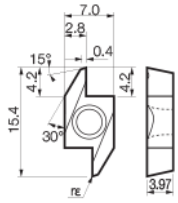


Right-hand Shown

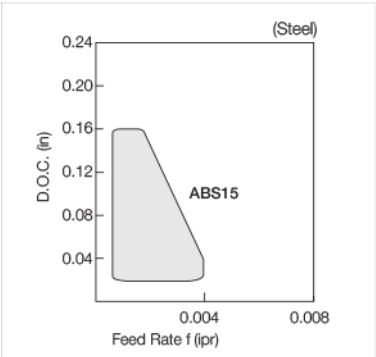
Toolholder Dimensions

Part Number		Stock	Unit	Dimensions H1=h	H2	B	L1	L2	F1	Standard Corner-R(rε)	Spare Parts: Anchor Pin	Lock Screw	Clamp Screw	Wrench
AABSR	6-15JXF	●	inch	0.375	-	0.375	4.750	-	0.383	0.006	LPA-11	HSB4X8R	-	FH-2
	8-15JXF	●		0.500	-	0.500	4.750	-	0.508	0.006	LPA-13			
	10-15JXF	●		0.625	-	0.625	4.750	-	0.633	0.006	LPA-17			
AABSR	1010JX-40F	○	mm	10	-	10	120	-	10.2	0.15	LPA-11	HSB4X8R	-	FH-2
	1212JX-40F	○		12	-	12	120	-	12.2	0.15	LPA-13			
	1616JX-40F	○		16	-	16	120	-	16.2	0.15	LPA-17			
SABSR	6-15JXF	●	inch	0.375	-	0.375	4.750	-	0.383	0.006	-	-	SB-3080TR	FT-10
	8-15JXF	●		0.500	-	0.500	4.750	-	0.508	0.006				
	10-15JXF	●		0.625	-	0.625	4.750	-	0.633	0.006				
SABSR	1010JX-40F	○	mm	10	-	10	120	-	10.2	0.15	-	-	SB-3080TR	FT-10
	1212JX-40F	○		12	-	12	120	-	12.2	0.15				
	1616JX-40F	●		16	-	16	120	-	16.2	0.15				
SABSR	1212F-40F	○		12	-	12	85	-	12.2	0.15	-	-	SB-3080TR	FT-10
	2020K-40F	○		20	-	20	125	-	20.2	0.15				

Applicable Inserts

Shape	Part Number	Corner-R rε : mm (inch)	Reference Page
  Dimensions are in millimeters.	ABS 15R4005	0.05 (0.002)	→ B37
	15R4015	0.15 (0.006)	
	ABS 15R4005M	<0.05 (<0.002)	
	15R4015M	<0.15 (<0.006)	

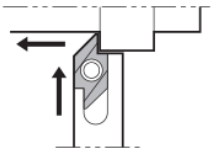
Application Range

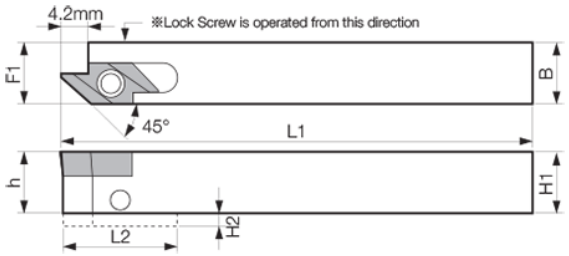


Recommended Cutting Conditions → **E45**

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

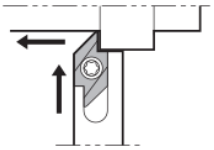
AABW (Screw Clamp 4.7mm • Depth 4mm MAX)

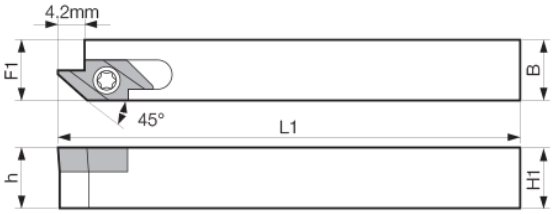




Right-hand Shown

SABW (Screw Clamp 4.7mm • Depth 4mm MAX)



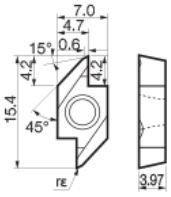


Right-hand Shown

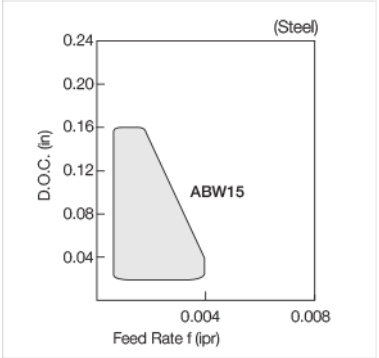
Toolholder Dimensions

Part Number	Stock	Unit	Dimensions						Standard Corner-R(rε)	Spare Parts			
			H1=h	H2	B	L1	L2	F1		Anchor Pin	Lock Screw	Clamp Screw	Wrench
AABWR 6-15JXF	●	inch	0.375	-	0.375	4.750	-	0.383	0.006	LPA-11	HSB4X8R	-	FH-2
8-15JXF	●		0.500	-	0.500	4.750	-	0.508	0.006	LPA-13			
10-15JXF	●		0.625	-	0.625	4.750	-	0.633	0.006	LPA-17			
AABWR 1010JX-40F	○	mm	10	-	10	120	-	10.2	0.15	LPA-11	HSB4X8R	-	FH-2
1212JX-50F	○		12	-	12	120	-	12.2	0.15	LPA-13			
1616JX-50F	●		16	-	16	120	-	16.2	0.15	LPA-17			
SABWR 6-15JXF	●	inch	0.375	-	0.375	4.750	-	0.383	0.006	-	-	SB-3080TR	FT-10
8-15JXF	●		0.500	-	0.500	4.750	-	0.508	0.006				
10-15JXF	●		0.625	-	0.625	4.750	-	0.633	0.006				
SABWR 1010JX-40F	○	mm	10	-	10	120	-	10.2	0.15	-	-	SB-3080TR	FT-10
1212JX-40F	○		12	-	12	120	-	12.2	0.15				
1616JX-40F	○		16	-	16	120	-	16.2	0.15				
SABWR 2020K-40F	○		20	-	20	125	-	20.2	0.15	-	-	SB-3080TR	FT-10

Applicable Inserts

Shape		Part Number	Corner-R rε : mm (inch)	Reference Page
	 Dimensions are in millimeters.	ABW 15R4005	0.05 (0.002)	B37
		15R4015	0.15 (0.006)	
		ABW 15R4005M	<0.05 (<0.002)	
		15R4015M	<0.15 (<0.006)	

Application Range

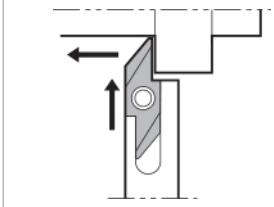


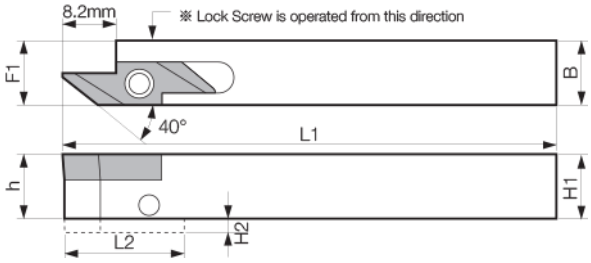
Recommended Cutting Conditions → **E45**

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

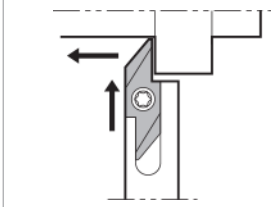
AABW (Screw Clamp 4.7mm • Depth 5.0mm MAX)

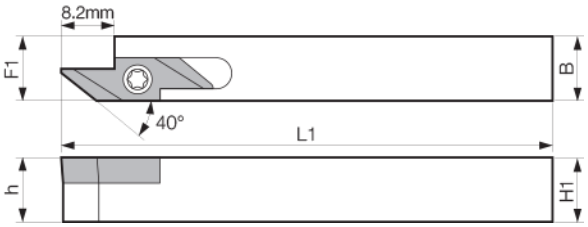




Right-hand Shown

SABW (Screw Clamp 4.7mm • Depth 5.0mm MAX)



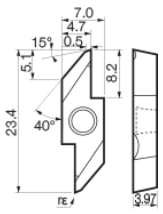


Right-hand Shown

Toolholder Dimensions

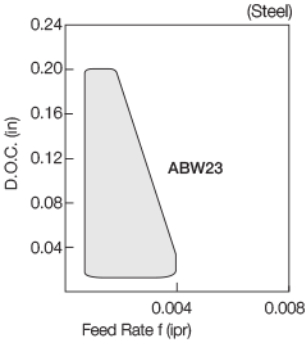
Part Number	Stock	Unit	Dimensions						Standard Corner-R(rε)	Spare Parts			
			H1=h	H2	B	L1	L2	F1		Anchor Pin	Lock Screw	Clamp Screw	Wrench
AABWR 6-23JXF	●	inch	0.375	-	0.375	4.750	-	0.383	0.006	LPA-11	HSB4X8R	-	FH-2
8-23JXF	●		0.500	-	0.500	4.750	-	0.508	0.006	LPA-13			
10-23JXF	●		0.625	-	0.625	4.750	-	0.633	0.006	LPA-17			
AABWR 1010JX-50F	○	mm	10	-	10	120	-	10.2	0.15	LPA-11	HSB4X8R	-	FH-2
1212JX-50F	○		12	-	12	120	-	12.2	0.15	LPA-13			
1616JX-50F	●		16	-	16	120	-	16.2	0.15	LPA-17			
SABWR 6-23JXF	●	inch	0.375	-	0.375	4.750	-	0.383	0.006	-	-	SB-3080TR	FT-10
8-23JXF	●		0.500	-	0.500	4.750	-	0.508	0.006				
10-23JXF	●		0.625	-	0.625	4.750	-	0.633	0.006				
SABWR 1010JX-50F	○	mm	10	-	10	120	-	10.2	0.15	-	-	SB-3080TR	FT-10
1212JX-50F	○		12	-	12	120	-	12.2	0.15				
1616JX-50F	○		16	-	16	120	-	16.2	0.15				
SABWR 2020K-50F	○		20	-	20	125	-	20.2	0.15	-	-	SB-3080TR	FT-10

Applicable Inserts

Shape		Part Number	Corner-R rε : mm (inch)	Reference Page
		**ABW 23R5005**	0.05 (0.002)	B37
		23R5015	0.15 (0.006)	
		ABW 23R5005M	<0.05 (<0.002)	
		23R5015M	<0.15 (<0.006)	

Dimensions are in millimeters.

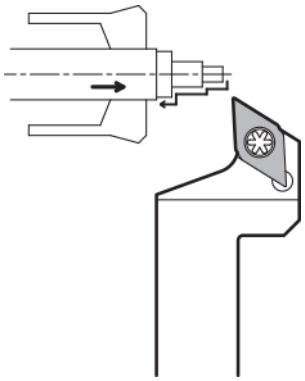
Application Range

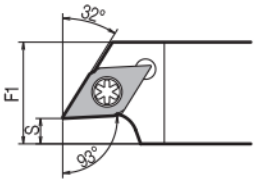


Recommended Cutting Conditions ➡ **E45**

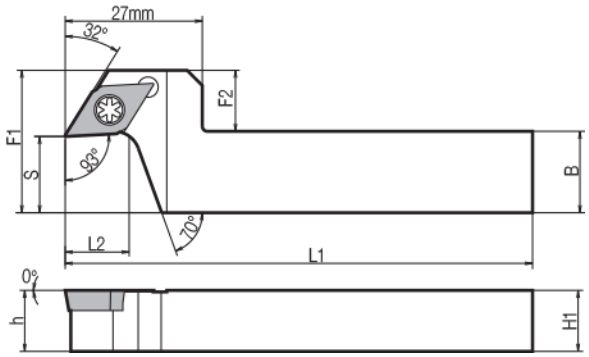
● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

SDJC (External / Copying)





SDJCR1620JX-11-F05
shown in figure above.



Right-hand Shown

Toolholder Dimensions

Part Number	Stock	Unit	Dimensions							Standard Corner-R(re)	Spare Parts	
			H1=h	B	L1	L2	F1	F2	S		Clamp Screw	Wrench
SDJCR 52-3JX-F3	●	inch	0.500	0.625	4.750	0.488	0.687	0.062	0.187	0.008	SB-4085TR	FT-15
52-3JX-F9	●		0.500	0.625	4.750	0.488	1.125	0.500	0.562	0.008		
62.5-3JX-F3	●		0.625	0.750	4.750	0.488	0.750	-	0.187	0.008		
62.5-3JX-F9	●		0.625	0.750	4.750	0.488	1.125	0.375	0.562	0.008		
SDJCR 1216JX-11-F05	○	mm	12	16	120	12.6	18	2	5	0.2	SB-4085TR	FT-15
1216JX-11-F15	○		12	16	120	12.6	28	12	15	0.2		
1620JX-11-F05	○		16	20	120	12.6	20	-	5	0.2		
1620JX-11-F15	○		16	20	120	12.6	28	8	15	0.2		

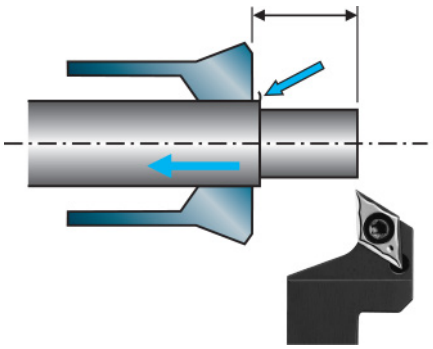
Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	Finishing / Precision	Low Feed
Ref. Page	➡ B15	➡ B15	➡ B16	➡ B16	➡ B16	➡ B18	➡ B18	➡ B20	➡ B19	➡ B20
Shape / Toolholder	CF	GF	PP	GK	GQ	R-F	R-FSF	(E/F) R-U	FR-USF	(E/F)R-J
SDJCR..-3JX-F.. SDJCR..-11-F..	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..	DC_T325..

Application	Low Feed / Precision	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard materials
Ref. Page	➡ B20	➡ B17	➡ B17	➡ B17	➡ B21	➡ B21	➡ B21	➡ C13	➡ C5
Shape / Toolholder	FR-JSF	XP	XQ	MQ	Without Chipbreaker	AH	R-A3	PCD	CBN
SDJCR..-3JX-F.. SDJCR..-11-F..	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..

Recommended Cutting Conditions ➡ E44

Goose-neck Designed for Multiple Passes, Both Roughing & Finishing!

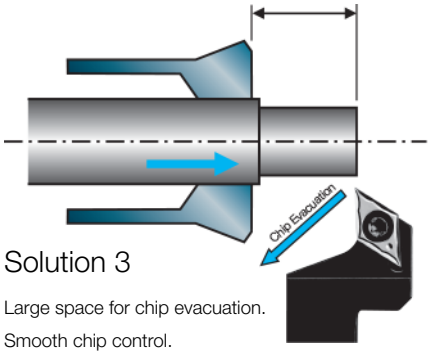


Solution 1

No breakage will occur because the burrs do not contact the guide bushing.

Solution 2

Longitudinal dimensions will be stable. External diameter will be stable by multiple pass machining (roughing and finishing).



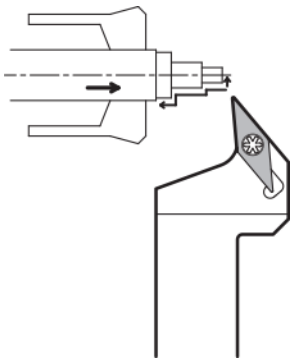
Solution 3

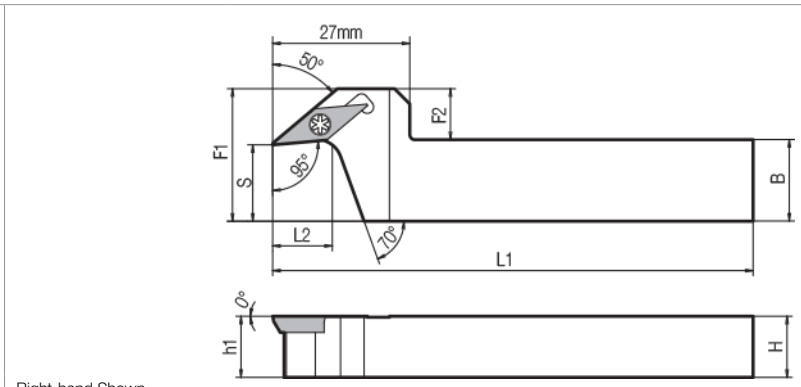
Large space for chip evacuation. Smooth chip control.

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

SVLP (External / Copying)





Right-hand Shown

Toolholder Dimensions

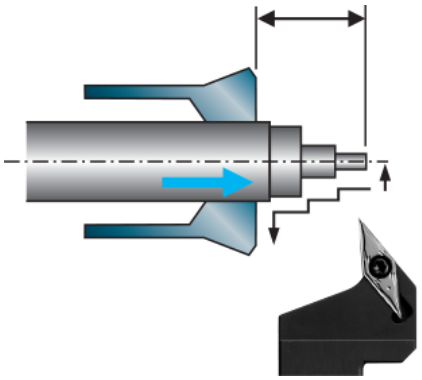
Part Number		Stock	Unit	Dimensions							Standard Corner-R(re)	Spare Parts	
				H1=h	B	L1	L2	F1	F2	S		Clamp Screw	Wrench
SVLPR	52-2JX-F9	●	inch	0.500	0.625	4.750	0.472	1.000	0.375	0.562	0.008	SB-2570TR	FT-15
	62.5-2JX-F9	●		0.625	0.750	4.750	0.472	1.000	0.250	0.562	0.008		
SVLPR	1216JX-11-F15	○	mm	12	16	120	12	26	10	15	0.2	SB-2570TR	FT-8
	1620JX-11-F15	○		16	20	120	12	26	6	15	0.2		

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	➡ B31	➡ B31	➡ B31	➡ B32	➡ B32	➡ B32
Shape / Toolholder	CF	CK	GF	R-FSF	FR-U	FR-USF
SVLPR..-2JX-F.. SDJCR..-11-F..	VPGT22..	VPGT22..	VPGT22..	VPET22..	VPET22..	VPET22..

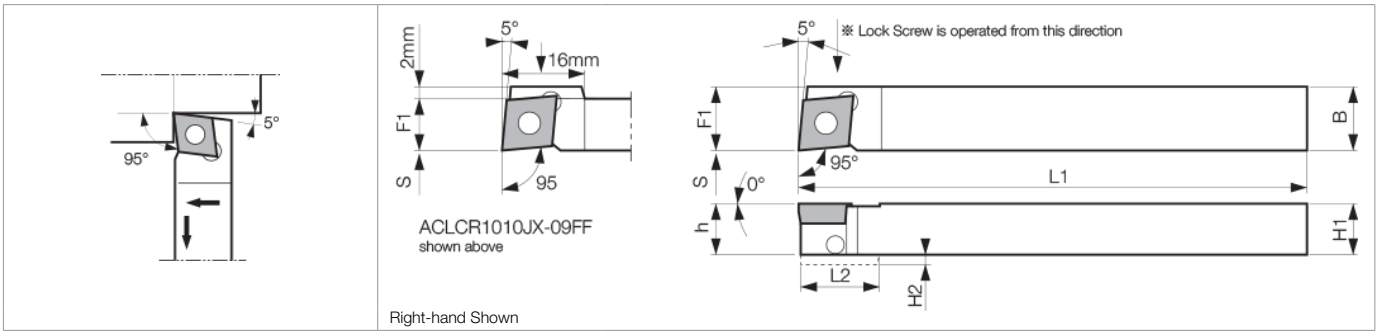
Recommended Cutting Conditions ➡ **E44**

One Toolholder for Complex Workpieces



Toolholder for VP type inserts.
Complex workpieces can be processed with one toolholder.
It is available for undercutting and external/face finishing.

ACLC-FF (Without Offset • External / Facing)



Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H1=h	H2	B	L1	L2	F1	S	Standard Corner-R(re)	Spare Parts: Anchor Pin	Spare Parts: Lock Screw	Spare Parts: Wrench
ACLC□ 6-2JXFF	●	●	inch	0.375	-	0.375	4.750	-	0.375	0	0.008	LPF-11	HSB4X8□	FH-2
6-3JXFF	●	●	inch	0.375	0.097	0.375	4.750	0.630	0.375	0	0.008	LPF-13		
8-3JXFF	●	●	inch	0.500	-	0.500	4.750	-	0.500	0	0.008			
10-3JXFF	●	●	inch	0.625	-	0.625	4.750	-	0.625	0	0.008	LPF-17		
ACLC□ 1010JX-06FF	○	○	mm	10	-	10	120	-	10	0	0.2	LPF-11	HSB4X8□	FH-2
1010JX-09FF	○	○	mm	10	2	10	120	16	10	0	0.2	LPF-13		
1212JX-09FF	○	○	mm	12	-	12	120	-	12	0	0.2			
1616JX-09FF	●	○	mm	16	-	16	120	-	16	0	0.2	LPF-17		

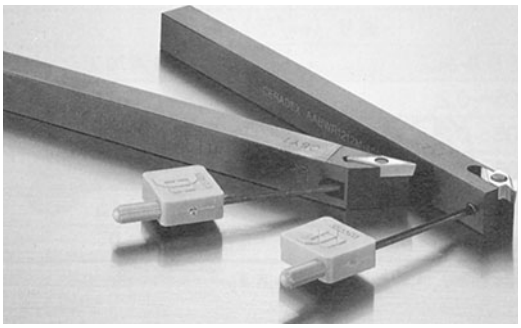
• Lock Screw : HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder

Applicable Inserts

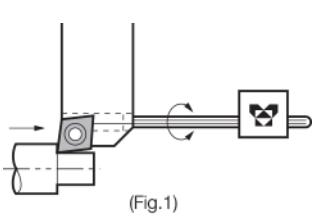
Application	Finishing	Finishing-Medium	Finishing-Medium	Low Feed	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Material
Ref. Page	B8	B9	B9	B12	B10	B13	B12	B13	C12	C4
Shape / Toolholder	GF	GK	GQ	(E/F)□-U	MQ	Without Chipbreaker	AH	□-A3	PCD	CBN
ACLC□..-2JXFF ACLC□..-06FF	CCGT21..	CCMT21..	CCGT21..	CCGT21..	-	CCGW21..	-	-	CCMT21.. CCGW21..	CCMW21..
ACLC□..-3JXFF ACLC□..-09FF	CCGT325..	CCMT325..	CCGT325..	CCGT325..	CCMT325..	CCGW325..	CCGT325..	CCGT325..	CCMT325.. CCGW325..	CCMW325..

Recommended Cutting Conditions ➔ E44

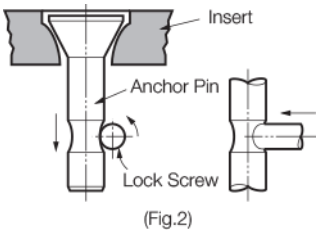
Back Clamp Holders



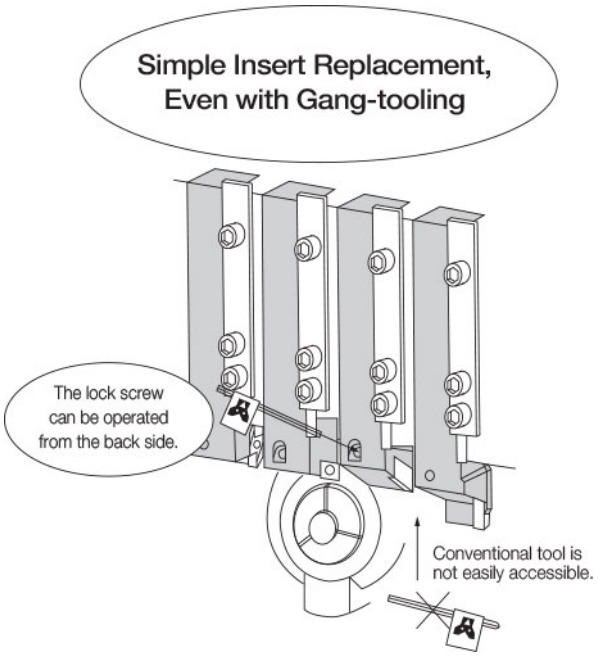
1. The lock screw can be operated from the back side and allows simple insert replacement on Swiss automatic lathes. (**Fig.1**)
2. Simple insert replacement by slightly turning the wrench.
3. Rigid clamping with anchor pin and lock screw. (**Fig.2**)



(Fig.1)



(Fig.2)



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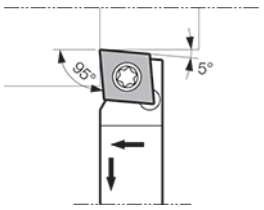
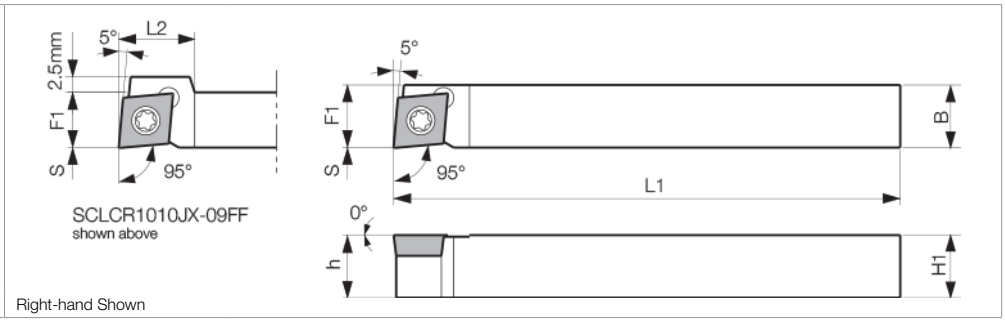
SCLC-FF (Without Offset • External / Facing)



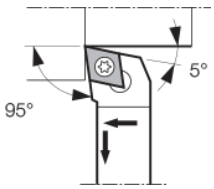


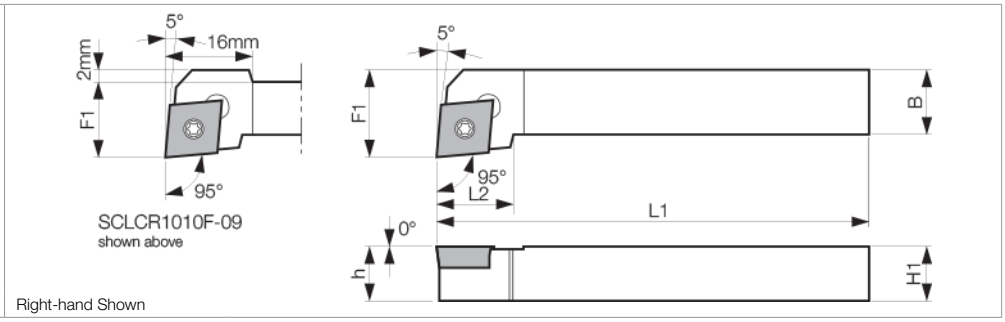
Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H1=h	B	L1	L2	F1	S	Standard Corner-R(re)	Spare Parts Clamp Screw	Spare Parts Wrench
SCLC□	6-2JXFF	●	●	inch	0.375	0.375	4.750	-	0.375	0	0.008	SB-2570TR	FT-8
	6-3JXFF	●	●		0.375	0.375	4.750	0.590	0.375	0	0.008	SB-4085TR	FT-15
	8-3JXFF	●	●		0.500	0.500	4.750	-	0.500	0	0.008		
	10-3JXFF	●	●		0.625	0.625	4.750	-	0.625	0	0.008		
SCLC□	0808F-06FF	○	○	mm	8	8	85	-	8	0	0.2	SB-2570TR	FT-8
	1212F-09FF	○	○		12	12	85	-	12	0	0.2	SB-4085TR	FT-15
SCLC□	1010JX-06FF	○	○		10	10	120	-	10	0	0.2	SB-2570TR	FT-8
	1010JX-09FF	○	○		10	10	120	15	10	0	0.2	SB-4085TR	FT-15
	1212JX-09FF	○	○		12	12	120	-	12	0	0.2		
	1616JX-09FF	●	○		16	16	120	-	16	0	0.2		

SCLC (External / Facing)





Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Dimensions (mm) H1=h	B	L1	L2	F1	Standard Corner-R(re)	Spare Parts Clamp Screw	Spare Parts Wrench	Spare Parts Wrench
SCLC□	1010F-06	○	○	10	10	80	9	12	0.2	SB-2570TR	FT-8	-
	1010F-09	○	○	10	10	80	14	14	0.2	SB-4085TR	FT-15	-
	1212H-09	○	○	12	12	100	14	16	0.2			
	1616H-09	○	○	16	16	100	15	20	0.2			
	2020K-09	○	○	20	20	125	20	25	0.2			
	1616H-12	○	○	16	16	100	20	20	0.4	SB-5090TR	-	LTW-20
	2020K-12	○	○	20	20	125	22	25	0.4			

Applicable Inserts

Application	Finishing	Finishing-Medium	Finishing-Medium	Low Feed	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Material
Ref. Page	B8	B9	B9	B12	B10	B13	B12	B13	C12	C4
Shape / Toolholder	GF	GK	GQ	(E/F□-□	MQ	Without Chipbreaker	AH	□-A□	PCD	CBN
SCLC□..-2JXFF SCLC□..-06FF/-06	CCGT215..	CCMT215..	CCGT215..	CCGT215..	-	CCGW21..	-	-	CCMT215.. CCGW215..	CCMW215..
SCLC□..-3JXFF SCLC□..-09FF/-09	CCGT325..	CCMT325..	CCGT325..	CCGT325..	CCMT325..	CCGW325..	CCGT325..	CCGT325..	CCMT325.. CCGW325..	CCMW325..
SCLC□..-12	-	CCMT43..	-	-	-	-	-	CCGT43..	-	-

Recommended Cutting Conditions ➡ E44

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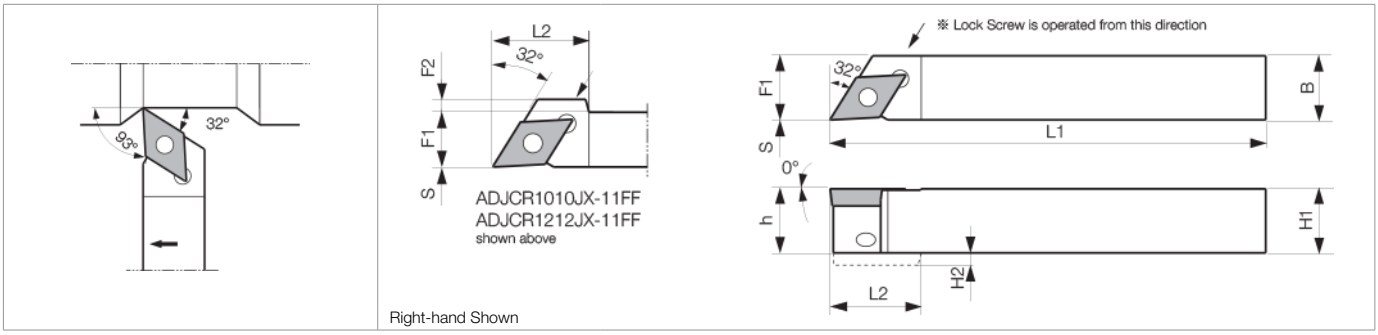
ADJC-FF (Without Offset • External / Copying)



Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H1=h	H2	B	L1	L2	F1	F2	S	Standard Corner-R(re)	Spare Parts: Anchor Pin	Spare Parts: Lock Screw	Spare Parts: Wrench
ADJC□	6-2JXFF	●	●	inch	0.375	-	0.375	4.750	-	0.375	-	0	0.008	LPF-11	HSB4X8□	FH-2
	6-3JXFF	●	●		0.375	0.097	0.375	4.750	0.787	0.375	0.137	0	0.008	LPF-13		
	8-3JXFF	●	●		0.500	-	0.500	4.750	-	0.500	-	0	0.008			
	10-3JXFF	●	●		0.625	-	0.625	4.750	-	0.625	-	0	0.008	LPF-17		
ADJC□	1010JX-07FF	○	○	mm	10	-	10	120	-	10	-	0	0.2	LPF-11	HSB4X8□	FH-2
	1010JX-11FF	○	○		10	2	10	120	20	10	3	0	0.2	LPF-13		
	1212JX-11FF	○	○		12	-	12	120	20	12	1	0	0.2			
	1616JX-11FF	●	○		16	-	16	120	-	16	-	0	0.2	LPF-17		

• Lock Screw : HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	Finishing / Precision
Ref. Page	B15	B15	B15, B16	B16	B16	B16	B18	B18	B20	B19
Shape / Toolholder	CF	GF	CK	PP	GK	GQ	□-F	□-FSF	(E/F) □-U	F□-USF
ADJC□..-2JXFF ADJC□..-07FF	DCGT215..	DCGT215..	DCGT215..	DCMT215..	DCMT215..	DCGT215..	DCGT215..	DCET215..	DCGT215..	DCET215..
ADJC□..-3JXFF ADJC□..-11FF	DCGT325..	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..

Application	Low Feed	Low Feed / Precision	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard materials
Ref. Page	B20	B20	B17	B17	B17	B21	B21	B21	C13	C5
Shape / Toolholder	(E/F)□-J	F□-JSF	XP	XQ	MQ	Without Chipbreaker	AH	□-A3	PCD	CBN
ADJC□..-2JXFF ADJC□..-07FF	DCET215..	-	DCMT215..	-	DCMT215..	DCGW215..	-	-	DCMT215..	DCMW215..
ADJC□..-3JXFF ADJC□..-11FF	DC_T325..	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..

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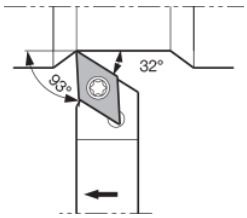
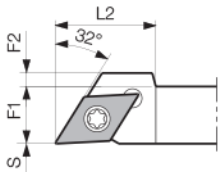
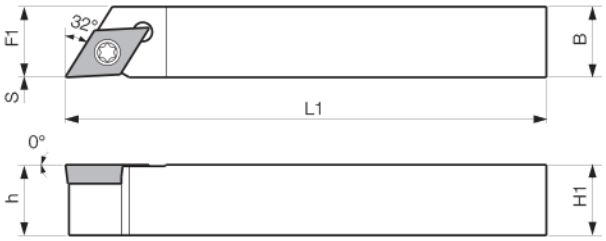




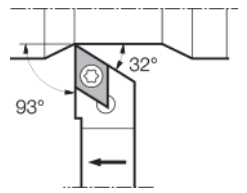


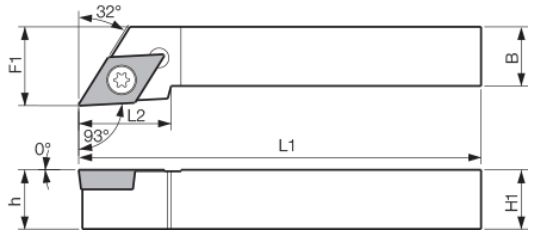
Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H1=h	B	L1	L2	F1	F2	S	Standard Corner-R(rε)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SDJC□	6-2JXFF	●	●	inch	0.375	0.375	4.750	-	0.375	-	0	0.008	SB-2570TR	FT-8
	6-3JXFF	●	●		0.375	0.375	4.750	0.787	0.375	0.137	0	0.008	SB-4085TR	FT-15
	8-3JXFF	●	●		0.500	0.500	4.750	-	0.500	-	0	0.008		
	10-3JXFF	●	●		0.625	0.625	4.750	-	0.625	-	0	0.008		
SDJC□	0808F-07FF	○	○	mm	8	8	85	14	8	0.5	0	0.2	SB-2570TR	FT-8
	1212F-11FF	○	○		12	12	85	20	12	1.0	0	0.2	SB-4085TR	FT-15
SDJC□	1010JX-07FF	○	○		10	10	120	-	10	-	0	0.2	SB-2570TR	FT-8
	1010JX-11FF	○	○		10	10	120	20	10	3.0	0	0.2	SB-4085TR	FT-15
	1212JX-11FF	○	○		12	12	120	20	12	1.0	0	0.2		
	1616JX-11FF	●	○		16	16	120	-	16	-	0	0.2		

SDJC (External / Copying)





Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Dimensions (mm) H1=h	B	L1	L2	F1	Standard Corner-R(rε)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SDJC□	1010F-07	○	○	10	10	80	12	12	0.2	SB-2570TR	FT-8
SDJC□	1010F-11	○	○	10	10	80	18	12	0.2	SB-4085TR	FT-15
	1212H-11	○	○	12	12	100	18	16	0.2		
	1616H-11	○	○	16	16	100	18	20	0.2		
	2020K-11	○	○	20	20	125	18	25	0.2		

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	Finishing / Precision
Ref. Page	➡ B15	➡ B15	➡ B15, ➡ B16	➡ B16	➡ B16	➡ B16	➡ B18	➡ B18	➡ B20	➡ B19
Shape / Toolholder	CF	GF	CK	PP	GK	GQ	□-F	□-FSF	(E/F) □-U	F□-USF
SDJC□...-2JXFF SDJC□...-07FF/-07	DCGT215..	DCGT215..	DCGT215..	DCMT215..	DCMT215..	DCGT215..	DCGT215..	DCET215..	DCGT215..	DCET215..
SDJC□...-3JXFF SDJC□...-11FF/-11	DCGT325..	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..
Application	Low Feed	Low Feed / Precision	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard materials
Ref. Page	➡ B20	➡ B20	➡ B17	➡ B17	➡ B17	➡ B21	➡ B21	➡ B21	➡ C13	➡ C5
Shape / Toolholder	(E/F) □-J	F□-JSF	XP	XQ	MQ	Without Chipbreaker	AH	□-A3	PCD	CBN
SDJC□...-2JXFF SDJC□...-07FF/-07	DCET215..	-	DCMT215..	-	DCMT215..	DCGW215..	-	-	DCMT215..	DCMW215..
SDJC□...-3JXFF SDJC□...-11FF/-11	DC_T325..	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..

Recommended Cutting Conditions ➡ E44

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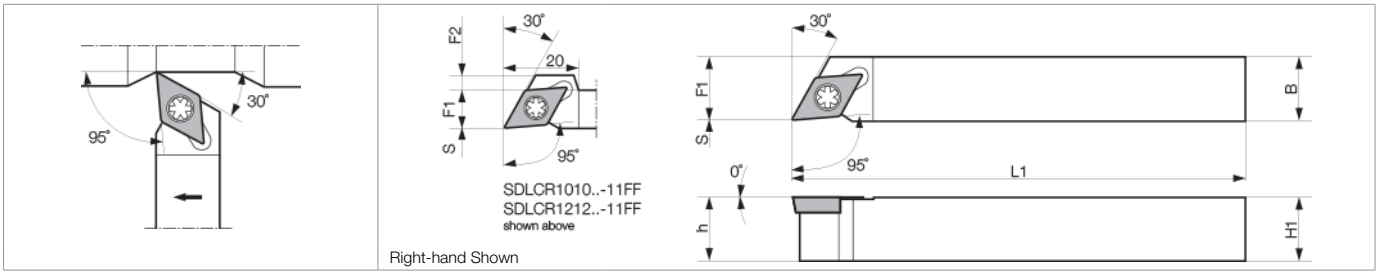
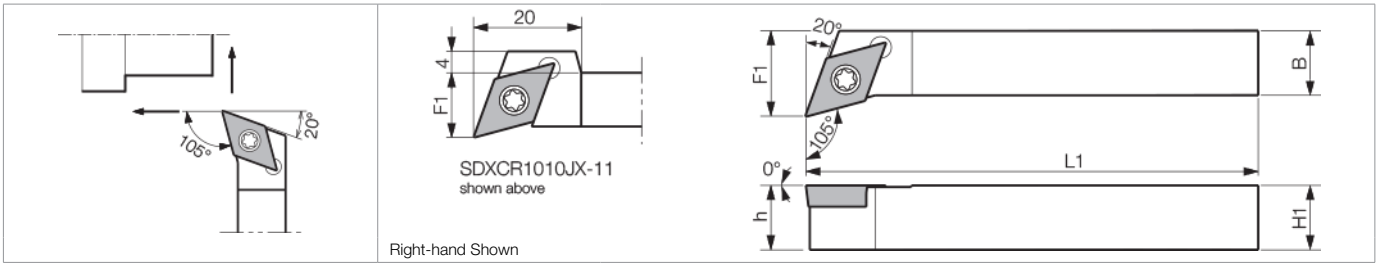


Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H1=h	B	L1	F1	F2	S	Standard Corner-R(re)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SDLC□ 6-2JXFF	●	●	inch	0.375	0.375	4.750	0.375	-	0	0.008	SB-2570TR	FT-8
6-3JXFF	●	●		0.375	0.375	4.750	0.375	0.176	0	0.008	SB-4085TR	FT-15
8-3JXFF	●	●		0.500	0.500	4.750	0.500	0.051	0	0.008		
10-3JXFF	●	●		0.625	0.625	4.750	0.625	-	0	0.008		
SDLC□ 1010JX-07FF	○	○	mm	10	10	120	10	-	0	0.2	SB-2570TR	FT-8
1212JX-07FF	○	○		12	12	120	12	-	0	0.2		
1616JX-07FF	○	○		16	16	120	16	-	0	0.2		
SDLC□ 1010JX-11FF	○	○		10	10	120	10	4	0	0.2	SB-4085TR	FT-15
1212JX-11FF	○	○		12	12	120	12	2	0	0.2		
1616JX-11FF	○	○		16	16	120	16	-	0	0.2		
SDLC□ 1212F-07FF	○			12	12	85	12	-	0	0.2	SB-2570TR	FT-8
SDLC□ 1010F-11FF	○	○		10	10	80	10	4	0	0.2	SB-4085TR	FT-15
1212F-11FF	○			12	12	85	12	2	0	0.2		
1616H-11FF	○			16	16	100	16	-	0	0.2		

SDXC (External / Facing / Copying)



Toolholder Dimensions

Part Number	Stock R	Stock L	Dimensions (mm) H1=h	B	L1	F1	Standard Corner-R(re)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SDXC□ 1010JX-07	○	○	10	10	120	12	0.2	SB-2570TR	FT-8
1010JX-11	○	○	10	10	120	12	0.2	SB-4085TR	FT-15
1212JX-11	○	○	12	12	120	16	0.2		
1616JX-11	○	○	16	16	120	20	0.2		

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	Finishing / Precision
Ref. Page	B15	B15	B15, B16	B16	B16	B16	B18	B18	B20	B19
Shape / Toolholder	CF	GF	CK	PP	GK	GQ	□-F	□-FSF	(E/F) □-U	F□-USF
SDLC□..-2JXFF / -07FF SDXC□..-07	DCGT215..	DCGT215..	DCGT215..	DCMT215..	DCMT215..	DCGT215..	DCGT215..	DCET215..	DCGT215..	DCET215..
SDLC□..-3JXFF / -11FF SDXC□..-11	DCGT325..	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..

Application	Low Feed	Low Feed / Precision	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard materials
Ref. Page	B20	B20	B17	B17	B17	B21	B21	B21	C13	C5
Shape / Toolholder	(E/F)□-J	F□-JSF	XP	XQ	MQ	Without Chipbreaker	AH	□-A3	PCD	CBN
SDLC□..-2JXFF / -07FF SDXC□..-07	DCET215..	-	DCMT215..	-	DCMT215..	DCGW215..	-	-	DCMT215..	DCMW215..
SDLC□..-3JXFF / -11FF SDXC□..-11	DC_T325..	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..

Recommended Cutting Conditions ➡ E44

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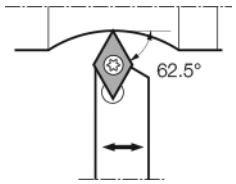
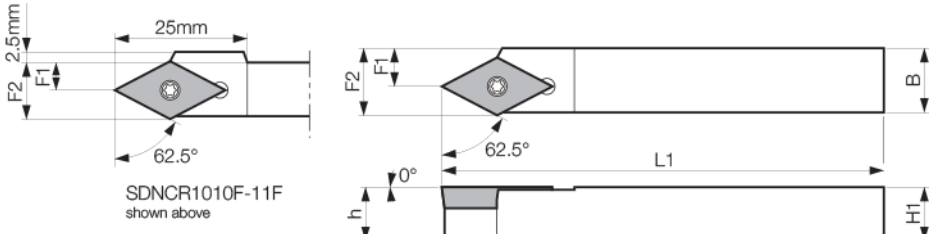
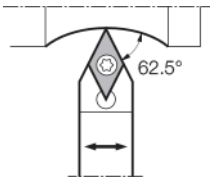
SDNC-F (External / Copying)

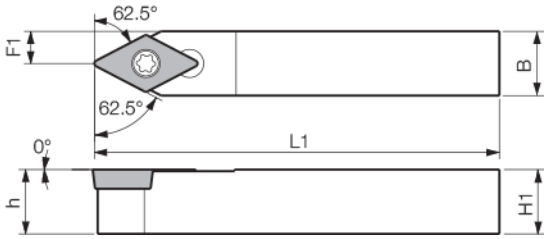




Right-hand Shown

SDNC (External / Copying)





Right-hand Shown

Toolholder Dimensions

Part Number	Stock R	Stock N	Stock L	Unit	Dimensions H1=h	B	L1	F1	F2	Standard Corner-R(re)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SDNC□ 6-2JXF	●		●	inch	0.375	0.375	4.750	0.257	0.395	0.008	SB-2570TR	FT-8
SDNC□ 1010JX-07F	○		○	mm	10	10	120	7	10.5	0.2	SB-2570TR	FT-8
SDNCN 6-2JX		●		inch	0.375	0.375	4.750	0.187	-	0.008	SB-2570TR	FT-8
8-2JX		●			0.500	0.500	4.750	0.250	-	0.008		
6-3JX		●			0.375	0.375	4.750	0.187	-	0.008	SB-4085TR	FT-15
8-3JX		●			0.500	0.500	4.750	0.250	-	0.008		
10-3JX		●			0.625	0.625	4.750	0.312	-	0.008		
SDNCN 1010JX-07		○		mm	10	10	120	5	-	0.2	SB-2570TR	FT-8
1212JX-07		○			12	12	120	6	-	0.2		
1010JX-11		○			10	10	120	5	-	0.2	SB-4085TR	FT-15
1212JX-11		○			12	12	120	6	-	0.2		
1616JX-11		●			16	16	120	8	-	0.2		
SDNCN 0808F-07		○			8	8	85	4	-	0.2	SB-2570TR	FT-8
SDNCN 1010F-11		○			10	10	80	5	-	0.2	SB-4085TR	FT-15
1212F-11		○			12	12	85	6	-	0.2		
1616H-11		○			16	16	100	8	-	0.2		

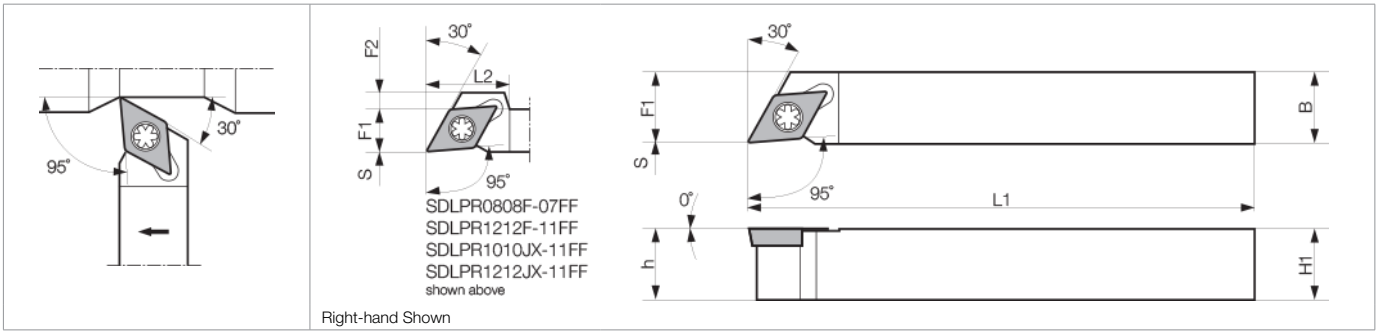
Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	Finishing / Precision
Ref. Page	➡ B15	➡ B15	➡ B15, ➡ B16	➡ B16	➡ B16	➡ B16	➡ B18	➡ B18	➡ B20	➡ B19
Shape / Toolholder	CF	GF	CK	PP	GK	GQ	□-F	□-FSF	(E/F) □-U	F□-USF
SDNC□..-2JXF / -07F SDNCN..-07	DCGT215..	DCGT215..	DCGT215..	DCMT215..	DCMT215..	DCGT215..	DCGT215..	DCET215..	DCGT215..	DCET215..
SDNCN..-3JX / -11	DCGT325..	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..
Application	Low Feed	Low Feed / Precision	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard materials
Ref. Page	➡ B20	➡ B20	➡ B17	➡ B17	➡ B17	➡ B21	➡ B21	➡ B21	➡ C13	➡ C5
Shape / Toolholder	(E/F)□-J	F□-JSF	XP	XQ	MQ	Without Chipbreaker	AH	□-A3	PCD	CBN
SDNC□..-2JXF / -07F SDNCN..-07	DCET215..	-	DCMT215..	-	DCMT215..	DCGW215..	-	-	DCMT215..	DCMW215..
SDNCN..-3JX / -11	DC_T325..	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..

Recommended Cutting Conditions ➡ E44

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

SDLP-FF (Without Offset • External / Copying)



Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H1=h	B	L1	L2	F1	F2	S	Standard Corner-R(rε)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SDLP□	6-2JXFF	●	●	inch	0.375	0.375	4.750	-	0.375	-	0	0.008	SB-2570TR	FT-8
	6-3JXFF	●	●		0.375	0.375	4.750	-	0.375	0.176	0	0.008	SB-4085TR	FT-15
	8-3JXFF	●	●		0.500	0.500	4.750	0.375	0.500	0.051	0	0.008		
	10-3JXFF	●	●		0.625	0.625	4.750	-	0.625	-	0	0.008		
SDLP□	0808F-07FF	○	○	mm	8	8	85	14	8	0.5	0	0.2	SB-2570TR	FT-8
	1212F-11FF	○			12	12	85	20	12	2.0	0	0.2	SB-4085TR	FT-15
SDLP□	1010JX-07FF	○	○		10	10	120	-	10	-	0	0.2	SB-2570TR	FT-8
	1010JX-11FF	○	○		10	10	120	20	10	4.0	0	0.2	SB-4085TR	FT-15
	1212JX-11FF	○	○		12	12	120	20	12	2.0	0	0.2		
	1616JX-11FF	○	○		16	16	120	-	16	-	0	0.2		

Applicable Inserts

Application	Finishing / Precision	Low Feed / Precision
Ref. Page	B21	B21
Shape / Toolholder	□-FSF	F□-USF
SDLP□..-2JXFF SDLP□..-07FF	DPET215..	DPET215..
SDLP□..-3JXFF SDLP□..-11FF	DPET325..	DPET325..

Recommended Cutting Conditions E44

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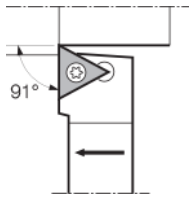
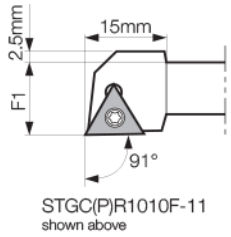
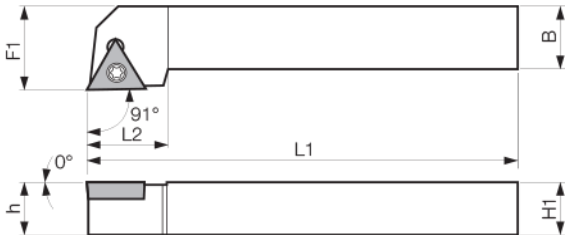
World Express (Shipping: 7-10 Business Days) : ○

STGC(P) (External / Copying)







Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Dimensions (mm) H1=h	B	L1	L2	F1	Standard Corner-R(rε)	Spare Parts: Clamp Screw	Spare Parts: Wrench
STGC□	0808E-08	○	○	8	8	70	12	10	0.2	SB-2050TR	FT-6
	1010F-08	○	○	10	10	80	12	12	0.2		
STGC□	1010F-11	○	○	10	10	80	15	14	0.4	SB-2570TR	FT-8
	1212H-11	○	○	12	12	100	15	16	0.4		
	1616H-11	○	○	16	16	100	15	20	0.4		
	2020K-11	○	○	20	20	125	15	25	0.4		
STGP□	0808E-08	○	○	8	8	70	12	10	0.2	SB-2050TR	FT-6
	1010F-08	○	○	10	10	80	12	12	0.2		
STGP□	1010F-11	○	○	10	10	80	15	14	0.2	SB-3080TR	FT-10
	1212H-11	○	○	12	12	100	15	16	0.2		
	1616H-11	○	○	16	16	100	15	20	0.2		

Applicable Inserts (STGC)

Application	Low Feed	Low Feed / Precision	Cast Iron	Non-ferrous Metals	Non-ferrous Metals
Ref. Page	B24	B24	B25	B24	C14
Shape / Toolholder	(E/F) □-U	F□-USF	Without Chipbreaker	□-A3	PCD
STGC□..-08	TCGT1515..	TCET1515..	TCGW1515..	-	TCMT1515..
STGC□..-11	TCGT22..	TCET22..	TCGW22..	TCGT22..	TCMT22.. TCGW22..

Applicable Inserts (STGP)

Application	Minute D.O.C.	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Low Feed / Precision	Medium	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Cast Iron
Ref. Page	B25	B25	B25	B26	B27	B27	B27	B25	B26	B27
Shape / Toolholder	CF	PP	HQ	□	□-FSF	F□-USF	□-H	XP	XQ	Without Chipbreaker
STGP□..-08	TPGT1515..	-	-	TPGH1515..	TPET1515..	TPET1515..	-	-	-	TPGB1515..
STGP□..-11	-	TPMT22..	TPMT22..	TPGH22..	TPET22..	TPET22..	TPGH22..	TPMT22..	TPMT22..	TPGB22..

Application	Non-ferrous Metals	Hard Materials
Ref. Page	C14~C16	C6
Shape / Toolholder	PCD	CBN
STGP□..-08	TPMH1515.. TPGB1515..	TPGB1515..
STGP□..-11	TPMH22.. TPGB22..	TPGB22..

Recommended Cutting Conditions E44

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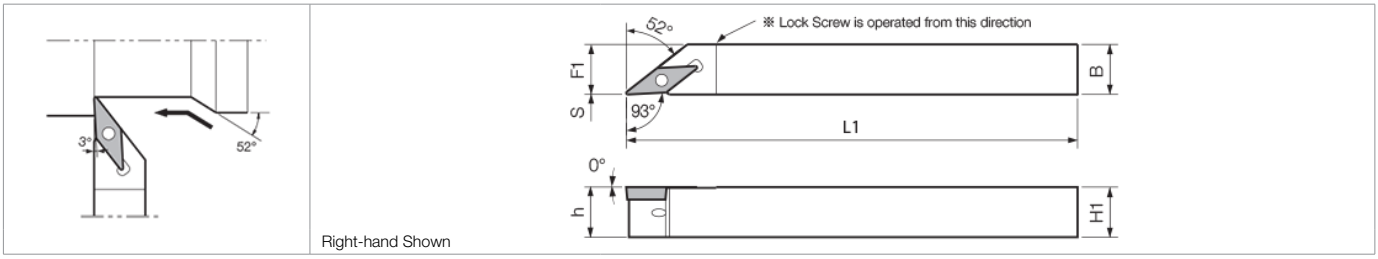
AVJB-FF / SVJB-FF (Without Offset • External / Copying)



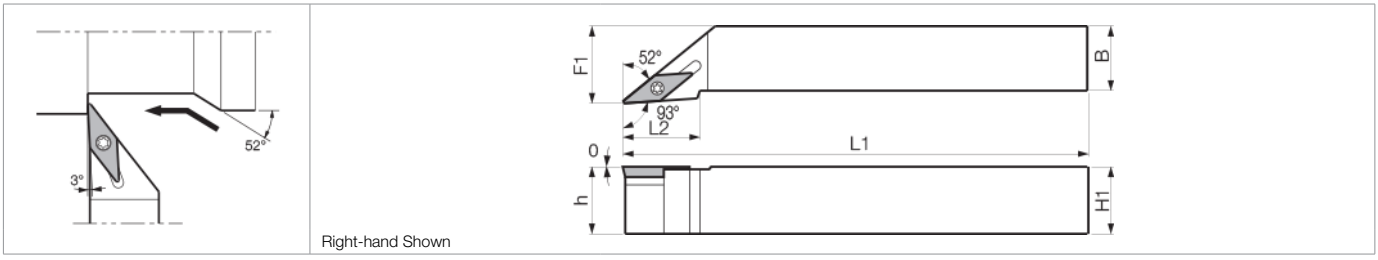
Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H1=h	B	L1	F1	S	Standard Corner-R(re)	Spare Parts: Anchor Pin	Lock Screw	Clamp Screw	Wrench
AVJB R/L	6-2JXFF	●	●	inch	0.375	0.375	4.750	0.375	0	0.016	LPF-11	HSB4X8 R/L	-	FH-2
	8-2JXFF	●	●		0.500	0.500	4.750	0.500	0	0.016	LPF-1113			
	10-2JXFF	●	●		0.625	0.625	4.750	0.625	0	0.016	LPF-1117			
AVJB R/L	1010JX-11FF	○	○	mm	10	10	120	10	0	0.4	LPF-11	HSB4X8 R/L	-	FH-2
	1212JX-11FF	●	○		12	12	120	12	0	0.4	LPF-1113			
	1616JX-11FF	●	○		16	16	120	16	0	0.4	LPF-1117			
SVJB R/L	6-2JXFF	●	●	inch	0.375	0.375	4.750	0.375	0	0.016	-	-	SB-2570TR	FT-8
	8-2JXFF	●	●		0.500	0.500	4.750	0.500	0	0.016				
	10-2JXFF	●	●		0.625	0.625	4.750	0.625	0	0.016				
SVJB R/L	1010JX-11FF	●	○	mm	10	10	120	10	0	0.4	-	-	SB-2570TR	FT-8
	1212JX-11FF	○	○		12	12	120	12	0	0.4				
	1616JX-11FF	○	○		16	16	120	16	0	0.4				

• Lock Screw : HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder

SVJB (External / Copying)



Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Dimensions (mm) H1=h	B	L1	L2	F1	Standard Corner-R(re)	Spare Parts: Clamp Screw	Wrench	Shim	Shim Screw	Wrench
SVJB R/L	2020K-11	○	○	20	20	125	30	25	0.4	SB-2570TR	FT-8	-	-	-
	2020K-16N	○	○	20	20	125	30	25	0.8	SB-40125TRN	FT-15	SVN-32N	SS-4N	LW-4

• Lock Screw : HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder

Applicable Inserts

Application	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. Page	B28	B28	B28	B29	B28	B29	B30	B30	C16	C7
Shape / Toolholder	GP	VF	HQ	R/L-F	R/L-FSF	R/L-Y	AH	R/L-A3	PCD	CBN
□VJB R/L..-2JXFF □VJB R/L..-11FF / -11	VBMT22..	VBMT22..	VBMT22..	VBGT22..	VBET22..	VBGT22..	-	-	VBMT22..	VBGW22..
SVJB R/L..-16N	VBMT33..	VBMT33..	VBMT33..	-	-	VBGT33..	VCGT33..	VCGT33..	VBMT33..	VBGW33..

Recommended Cutting Conditions ➡ E44

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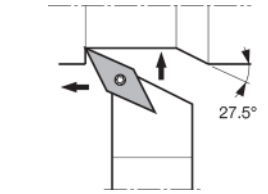
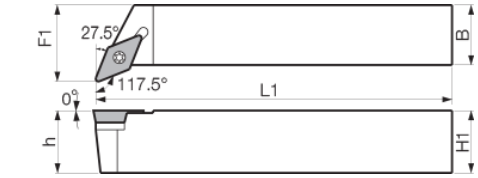
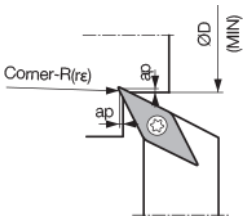
SVPB (External / Facing / Copying / Undercutting)





Right-hand Shown

Undercutting Diameter of SVPB

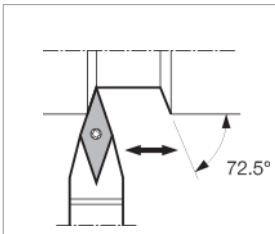


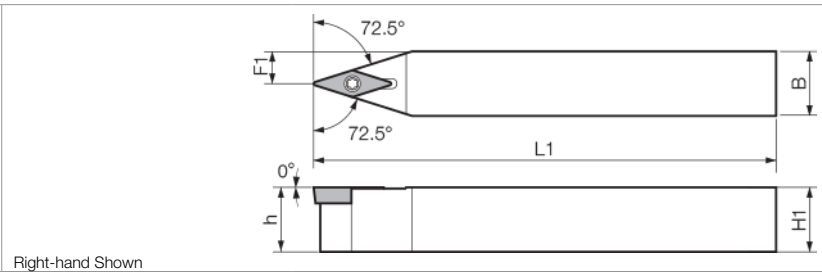
Corner-R (rε)	ap	ØD (MIN)
0.4	0.5	Ø25
	1.0	Ø30
0.8	0.5	Ø45
	1.0	Ø55

Toolholder Dimensions

Part Number		Stock		Dimensions (mm)					Standard Corner-R(rε)	Spare Parts				
		R	L	H1=h	B	L1	L2	F1		Clamp Screw	Wrench	Shim	Shim Screw	Wrench
SVPBR/L	1010JX-11	○	○	10	10	120	-	14.5	0.4	SB-2570TR	FT-8	-	-	-
	1212JX-11	○	○	12	12	120	-	16.5	0.4					
	1616JX-11	○	○	16	16	120	-	20.5	0.4					
SVPBR/L	2020K-11	○	○	20	20	125	-	25.0	0.4	SB-2570TR	FT-8	-	-	-
SVPBR/L	2020K-16N	○	○	20	20	125	-	25.0	0.8	SB-40125TRN	FT-15	SVN-32N	SS-4N	LW-4

SVVB (External / Copying)





Right-hand Shown

Toolholder Dimensions

Part Number		Stock	Unit	Dimensions				Standard Corner-R(rε)	Spare Parts				
				H1=h	B	L1	F1		Clamp Screw	Wrench	Shim	Shim Screw	Wrench
SVVBN	6-2JX	●	inch	0.375	0.375	4.750	0.187	0.016	SB-2570TR	FT-8	-	-	-
	8-2JX	●		0.500	0.500	4.750	0.250	0.016					
	10-2JX	●		0.625	0.625	4.750	0.312	0.016					
SVVBN	1212F-11	○	mm	12	12	85	6.0	0.4	SB-2570TR	FT-8	-	-	-
SVVBN	1010JX-11	○		10	10	120	5.0	0.4	SB-2570TR	FT-8	-	-	-
	1212JX-11	○		12	12	120	6.0	0.4					
	1616JX-11	○		16	16	120	8.0	0.4					
SVVBN	1010F-11	○		10	10	80	5.0	0.4	SB-2570TR	FT-8	-	-	-
	1616H-11	○		16	16	100	8.0	0.4					
	2020K-11	○		20	20	125	10.0	0.4					
SVVBN	2020K-16N	○		20	20	125	10.0	0.8	SB-40125TRN	FT-15	SVN-32N	SS-4N	LW-4

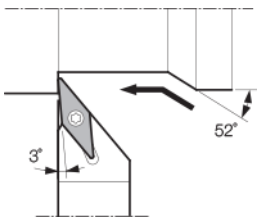
Applicable Inserts

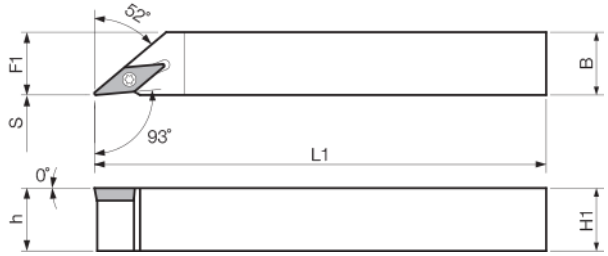
Application	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. Page	➡ B28	➡ B28	➡ B28	➡ B29	➡ B28	➡ B29	➡ B30	➡ B30	➡ C16	➡ C7
Shape / Toolholder	GP	VF	HQ	R/L-F	R/L-FSF	R/L-Y	AH	R/L-A3	PCD	CBN
SVPBR/L..-11	VBMT22..	VBMT22..	VBMT22..	VBGT22..	VBET22..	VBGT22..	-	-	VBMT22..	VBGW22..
SVVBN..-2JXFF SVVBN..-11										
SVPBR/L..-16N	VBMT33..	VBMT33..	VBMT33..	-	-	VBGT33..	VCGT33..	VCGT33..	VBMT33..	VBGW33..
SVVBN..-16N										

Recommended Cutting Conditions ➡ **E44**

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

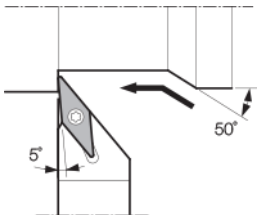
SVJP-FF (Without Offset • External / Copying)

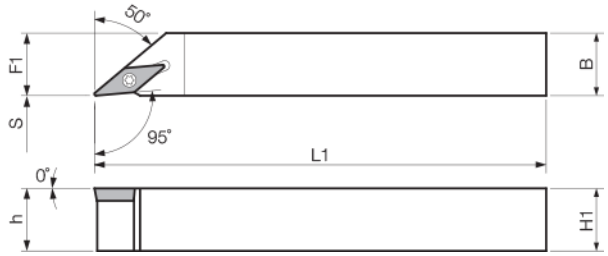




Right-hand Shown

SVLP-FF (Without Offset • External / Copying)





Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H1=h	B	L1	F1	S	Standard Corner-R(re)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SVJP□	8-2JXFF	●	●	inch	0.500	0.500	4.750	0.500	0	0.008	SB-2570TR	FT-8
	10-2JXFF	●	●		0.625	0.625	4.750	0.625	0	0.008		
SVJP□	1212F-11FF	○	○	mm	12	12	85	12	0	0.2	SB-2570TR	FT-8
	1212JX-11FF	○	○		12	12	120	12	0	0.2		
	1616JX-11FF	○	○		16	16	120	16	0	0.2		
SVLP□	6-15JXFF	●	●	inch	0.375	0.375	4.750	0.375	0	0.004	SB-2550TR	FT-6
	8-15JXFF	●	●		0.500	0.500	4.750	0.500	0	0.004		
	10-15JXFF	●	●		0.625	0.625	4.750	0.625	0	0.004		
	8-2JXFF	●	●		0.500	0.500	4.750	0.500	0	0.008	SB-2570TR	FT-8
	10-2JXFF	●	●		0.625	0.625	4.750	0.625	0	0.008		
SVLP□	1010JX-08FF	○	○	mm	10	10	120	10	0	0.1	SB-2050TR	FT-6
	1212JX-08FF	○	○		12	12	120	12	0	0.1		
	1616JX-08FF	○	○		16	16	120	16	0	0.1		
SVLP□	1212JX-11FF	○	○		12	12	120	12	0	0.2	SB-2570TR	FT-8
	1616JX-11FF	○	○		16	16	120	16	0	0.2		
SVLP□	1212F-08FF	○			12	12	85	12	0	0.1	SB-2050TR	FT-6
	1212F-11FF	○			12	12	85	12	0	0.2	SB-2570TR	FT-8

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	➡ B31	➡ B31	➡ B31	➡ B32	➡ B32	➡ B32
Shape / Toolholder	CF	CK	GF	□-FSF	F□-U	F□-USF
SVLP□...-15JXFF SVLP□...-08FF	-	VPGT1515..	-	VPET1515..	-	VPET1515..
SV□P□...-2JXFF SV□P□...-11FF	VPGT220..	VPGT220..	VPGT220..	VPET220..	VPET220..	VPET220..

Recommended Cutting Conditions ➡ E44

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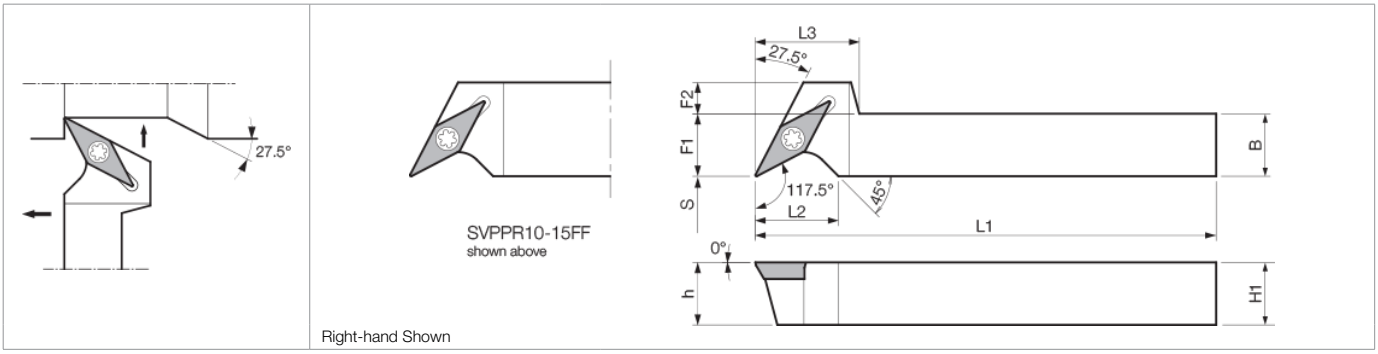
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

SVPP-FF (Without Offset • External / Facing / Copying / Undercutting)



Toolholder Dimensions

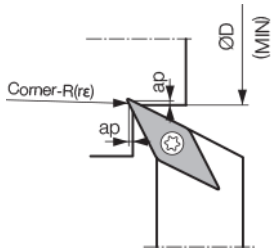
Part Number		Stock	Unit	Dimensions								Standard Corner-R(rε)	Spare Parts	
				H1=h	B	L1	L2	L3	F1	F2	S		Clamp Screw	Wrench
SVPPR	6-15JXFF	●	inch	0.375	0.375	4.750	0.472	0.630	0.375	0.176	0	0.004	SB-2050TR	FT-6
	8-15JXFF	●		0.500	0.500	4.750	0.551	0.630	0.500	0.051	0	0.004		
	10-15JXFF	●		0.625	0.625	4.750	0.787	-	0.625	-	0	0.004		
	6-2JXFF	●		0.375	0.375	4.750	0.630	0.787	0.375	0.334	0	0.008	SB-2570TR	FT-8
	8-2JXFF	●		0.500	0.500	4.750	0.630	0.787	0.500	0.209	0	0.008		
	10-2JXFF	●		0.625	0.625	4.750	0.787	0.787	0.625	0.084	0	0.008		
SVPPR	1010JX-08FF	○	mm	10	10	120	12	16	10.0	4	0	0.1	SB-2050TR	FT-6
	1212JX-08FF	○		12	12	120	12	16	12.0	2	0	0.1		
	1616JX-08FF	○		16	16	120	12	-	16.0	-	0	0.1		
SVPPR	1010JX-11FF	○		10	10	120	16	20	10.0	8	0	0.2	SB-2570TR	FT-8
	1212JX-11FF	○		12	12	120	16	20	12.0	6	0	0.2		
	1616JX-11FF	○		16	16	120	16	20	16.0	2	0	0.2		
SVPPR	1212F-08FF	○		12	12	85	12	16	12.0	2	0	0.1	SB-2050TR	FT-6
	1212F-11FF	○		12	12	85	16	20	12.0	6	0	0.2	SB-2570TR	FT-8

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	B31	B31	B31	B32	B32	B32
Shape / Toolholder	CF	CK	GF	₹%-FSF	F₹%-U	F₹%-USF
SVPPR...-15JXFF SVPPR...-08FF	-	VPGT1515..	-	VPET1515..	-	VPET1515..
SVPPR...-2JXFF SVPPR...-11FF	VPGT220..	VPGT220..	VPGT220..	VPET220..	VPET220..	VPET220..
SVPP₹%...-11	VPGT220..	VPGT220..	VPGT220..	VPET220..	VPET220..	VPET220..

Recommended Cutting Conditions ➡ E44

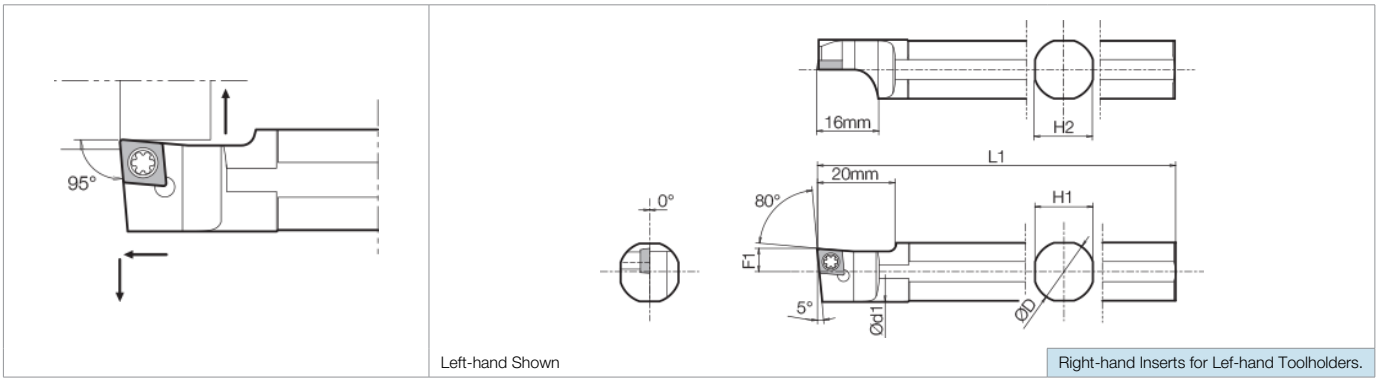
Undercutting Dia. of SVPP-FF



Corner-R(rε)	ap	ØD (MIN)
0.2	0.5	Ø20
	1.0	Ø25

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

S...SCLC (External / Facing)



Left-hand Shown

Right-hand Inserts for Lef-hand Toolholders.

Toolholder Dimensions

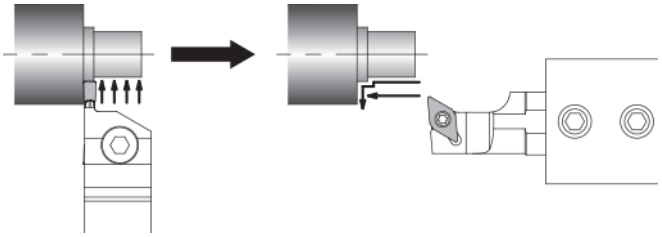
Part Number	Stock	Unit	Dimensions					Standard Corner-R(rε)	Spare Parts	
			ØD	L1	F1	Ød1	H1=H2		Clamp Screw	Wrench
S15F -SCLCL06	●	inch	0.625	3.346	0.236	0.606	0.590	0.016	SB-2570TR	FT-8
S19G -SCLCL06			0.750	3.543	0.236	0.724	0.669	0.016		
S19K -SCLCL06	○		0.750	4.724	0.236	0.724	0.669	0.016		
S19G -SCLCL09	●		0.750	3.543	0.393	0.724	0.669	0.016	SB-4065TR	FT-5
S19K -SCLCL09	○		0.750	4.724	0.393	0.724	0.669	0.016		
S25K -SCLCL09	●		1.000	4.724	0.393	0.976	0.905	0.016		
S12F -SCLCL06	○	mm	12	80	6	13.4	11	0.4	SB-2560TR	FT-8
S14H -SCLCL06	○		14	100	6	13.4	13	0.4		
S16F -SCLCL06	○		16	85	6	15.4	15	0.4	SB-2570TR	
S20G -SCLCL06	○		20	90	6	19.4	18	0.4		
S20K -SCLCL06	○		20	120	6	19.4	18	0.4		
S20G -SCLCL09	○		20	90	10	19.4	18	0.4	SB-4065TR	FT-5
S20K -SCLCL09	○		20	120	10	19.4	18	0.4		
S25.0H -SCLCL09	○		25	100	10	24.4	23	0.4		

Applicable Inserts

Application	Finishing	Finishing-Medium	Finishing-Medium	Low Feed	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. Page	➡ B8	➡ B9	➡ B8	➡ B12	➡ B10	➡ B13	➡ B12	➡ B13	➡ C12	➡ C4
Shape / Toolholder	GF	GK	GQ	(E/F)R-U	MQ	Without Chipbreaker	AH	R-A3	PCD	CBN
S...SCLCL06	CCGT215..	CCMT215..	CCGT215..	CCGT215..	-	CCGW215..	-	-	CCMT215.. CCGW215..	CCMW215..
S...SCLCL09	CCGT325..	CCMT325..	CCGT325..	CCGT325..	CCMT325..	CCGW325..	CCGT325..	CCGT325..	CCMT325.. CCGW325..	CCMW325..

Recommended Cutting Conditions ➡ E44

Finishing by Sleeve Holder



1) Roughing by grooving toolholder

2) Finishing by Sleeve Holder improves chip control and reduces cutting time

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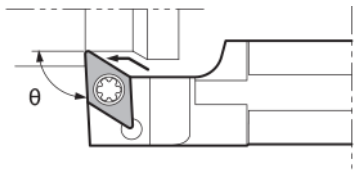
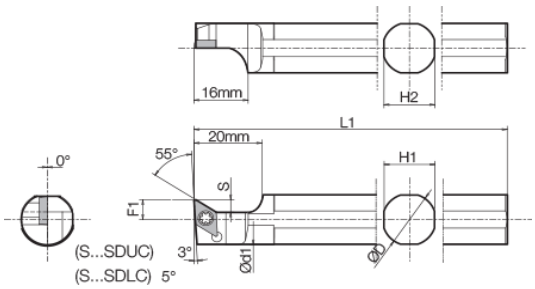
S...SDUC (External / Copying) / S...SDLC (External / Copying)



θ = 93° (S...SDUC)
θ = 95° (S...SDLC)



Left-hand Shown

Right-hand Inserts for Lef-hand Toolholders.

Toolholder Dimensions

Part Number	Stock	Unit	Dimensions						Standard Corner-R(re)	Spare Parts	
			ØD	L1	F1	Ød1	H1=H2	S		Clamp Screw	Wrench
S15F -SDUCL07	●	inch	0.625	3.346	0.236	0.606	0.590	0.150	0.016	SB-2560TR	FT-8
S19G -SDUCL07	●		0.750	3.543	0.236	0.724	0.669	0.150	0.016		
S19K -SDUCL07	○		0.750	4.724	0.236	0.724	0.669	0.150	0.016		
S19G -SDUCL11	●		0.750	3.543	0.393	0.724	0.669	0.228	0.016	SB-4085TR	FT-15
S19K -SDUCL11	○		0.750	4.724	0.393	0.724	0.669	0.228	0.016		
S25K -SDUCL11	●		1.000	4.724	0.393	0.976	0.905	0.228	0.016		
S15F -SDLCL07	●		0.625	3.346	0.236	0.606	0.590	0.150	0.016	SB-2560TR	FT-8
S19G -SDLCL07	●		0.750	3.543	0.236	0.724	0.669	0.150	0.016		
S19K -SDLCL07	○		0.750	4.724	0.236	0.724	0.669	0.150	0.016		
S19G -SDLCL11	●		0.750	3.543	0.393	0.724	0.669	0.228	0.016	SB-4085TR	FT-15
S19K -SDLCL11	○		0.750	4.724	0.393	0.724	0.669	0.228	0.016		
S25K -SDLCL11	●		1.000	4.724	0.393	0.976	0.905	0.228	0.016		
S14H -SDUCL07	○	mm	14	100	6	13.4	13	3.8	0.4	SB-2560TR	FT-8
S20G -SDUCL07	○		20	90	6	19.4	18	3.8	0.4		
S20K -SDUCL07	○		20	120	6	19.4	18	3.8	0.4		
S20G -SDUCL11	○		20	90	10	19.4	18	5.8	0.4	SB-4085TR	FT-15
S20K -SDUCL11	○		20	120	10	19.4	18	5.8	0.4		
S22K -SDUCL11	●		22	120	10	21.4	20	5.8	0.4		
S25.0H -SDUCL11	○		25	100	10	24.4	23	5.8	0.4		
S12F -SDLCL07	○		12	80	6	13.4	11	3.8	0.4	SB-2560TR	FT-8
S14H -SDLCL07	○		14	100	6	13.4	13	3.8	0.4		
S16F -SDLCL07	○		16	85	6	15.4	15	3.8	0.4		
S20G -SDLCL07	○		20	90	6	19.4	18	3.8	0.4		
S20K -SDLCL07	○		20	120	6	19.4	18	3.8	0.4		
S20G -SDLCL11	○		20	90	10	19.4	18	5.8	0.4	SB-4085TR	FT-15
S20K -SDLCL11	○		20	120	10	19.4	18	5.8	0.4		
S22K -SDLCL11	●		22	120	10	21.4	20	5.8	0.4		
S25.0H -SDLCL11	○		25	100	10	24.4	23	5.8	0.4		

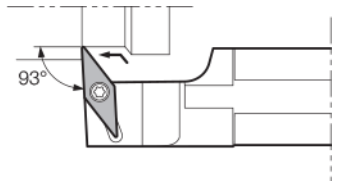
Applicable Inserts

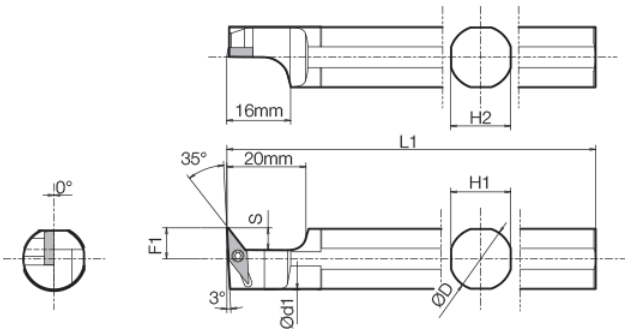
Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	Finishing / Precision
Ref. Page	➡ B15	➡ B15	➡ B15, ➡ B16	➡ B16	➡ B16	➡ B16	➡ B18	➡ B18	➡ B20	➡ B19
Shape / Toolholder	**CF**	**GF**	**CK**	**PP**	**GK**	**GQ**	**R-F**	**R-FSF**	**(E/F)R-U**	**FR-USF**
S...SD□CL07	DCGT215..	DCGT215..	DCGT215..	DCMT215..	DCMT215..	DCGT215..	DCGT215..	DCET215..	DCGT215..	DCET215..
S...SD□CL11	DCGT325..	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..
Application	Low Feed	Low Feed / Precision	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard materials
Ref. Page	➡ B20	➡ B20	➡ B17	➡ B17	➡ B17	➡ B21	➡ B21	➡ B21	➡ C13	➡ C5
Shape / Toolholder	**(E/F)R-J**	**FR-JSF**	**XP**	**XQ**	**MQ**	Without Chipbreaker	**AH**	**R-A3**	**PCD**	**CBN**
S...SD□CL07	DCET215..	-	DCMT215..	-	DCMT215..	DCGW215..	-	-	DCMT215..	DCMW215..
S...SD□CL11	DC_T325..	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..

Recommended Cutting Conditions ➡ **E44**

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

S...SVUB(C) (External / Copying)





Left-hand Shown

Right-hand Inserts for Lef-hand Toolholders.

Toolholder Dimensions

Part Number	Stock	Unit	Dimensions						Standard Corner-R(re)	Spare Parts	
			ØD	L1	F1	Ød1	H1=H2	S		Clamp Screw	Wrench
S15F -SVUCL08	●	inch	0.625	3.346	0.315	0.606	0.591	0.217	0.016	SB-2050TR	FT-6
S19G -SVUBL11	●		0.750	3.543	0.413	0.724	0.669	0.315	0.016		
S19K -SVUBL11	○		0.750	4.724	0.413	0.724	0.669	0.315	0.016		
S25K -SVUBL11	●		1.000	4.724	0.413	0.976	0.906	0.315	0.016		
S12F -SVUCL08	○	mm	12	80	7.5	13.4	11	5.5	0.4	SB-2050TR	FT-6
S14H -SVUCL08	○		14	100	7.5	13.4	13	5.5	0.4		
S16F -SVUCL08	○		16	85	8	15.4	15	5.5	0.4		
S20G -SVUBL11	○		20	90	10.5	19.4	18	8	0.4		
S20K -SVUBL11	○		20	120	10.5	19.4	18	8	0.4		
S25.0H -SVUBL11	○		25	100	10.5	24.4	23	8	0.4		

Applicable Inserts

Application	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Non-ferrous Metals	Hard Materials
Ref. Page	➔ **B28**	➔ **B28, ➔ B30**	➔ **B28, ➔ B30**	➔ **B29**	➔ **B28**	➔ **B29**	➔ **C16**	➔ **C7**
Shape / Toolholder	**GP**	**VF**	**HQ**	**R-F**	**R-FSF**	**R-Y**	**PCD**	**CBN**
S...SVUCL08	-	VCMT1515..	VCMT1515..	-	-	-	VCMT1515..	VCGW1515..
S...SVUBL11	VBMT22..	VBMT22..	VBMT22..	VBGT22..	VBET22..	VBGT22..	VBMT22..	VBGW22..

Recommended Cutting Conditions ➔ **E44**

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World Express (Shipping: 7-10 Business Days) : ○

Toolholders for Small Double Sided Tooling (Screw Clamp, Without offset)

Specially designed negative inserts (double-sided) for small workpieces enable sharp cutting equivalent to positive inserts, achieving high productivity due to economical double-edge inserts

Double-sided Inserts for small part precision cutting

TNGU18...

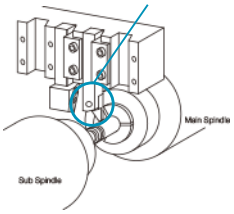
Small Negative Insert

TNGG33...

Conventional Negative Insert

No constraint of tool position against tool post in the newly designed small double-sided insert.

The conventional toolholders for negative insert can interfere with sub spindle.



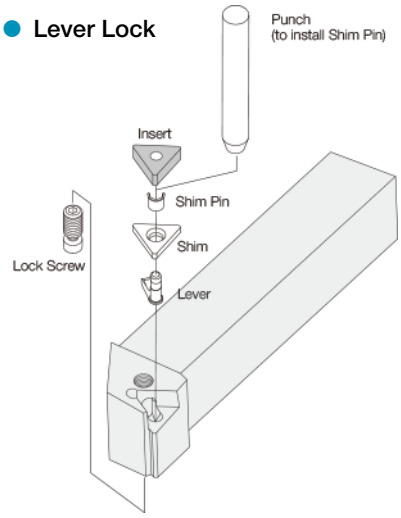
No interferance with sub spindle

Toolholders for Small Double Sided Tooling (Screw Clamp, Without offset)

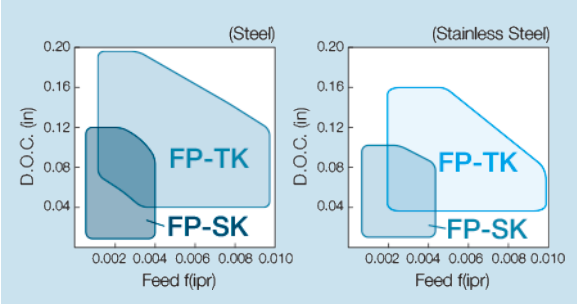
For medium to high feed rates with automatic lathes (when cutting workpieces of medium to large dia.)

Sharp cutting oriented FP-SK/TK Chipbreaker with polished and sharp edge preparation.

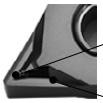
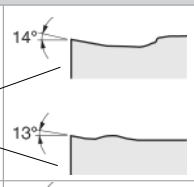
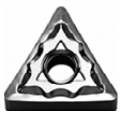
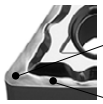
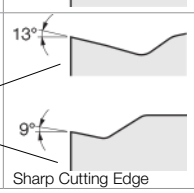
Lever Lock



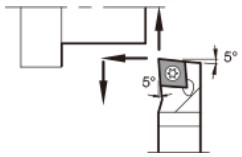
Applicable Chipbreaker Range

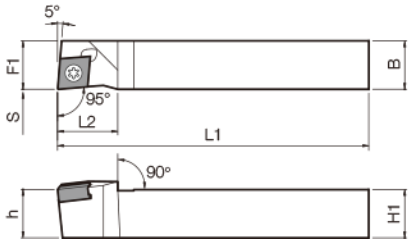


Chipbreaker Shape & Advantages

Design			Advantages
FP-SK 			Polished chipbreaker. Smooth chip control and less adhesion. (for finishing-medium)
FP-TK 			Polished chipbreaker. Smooth chip control and less adhesion. (when cutting medium to large diameter workpieces)

SCLN (Without Offset • External / Facing)





Right-hand Shown

Side Rake Angle : - 6°
Inclination Angle : - 6°

Toolholder Dimensions

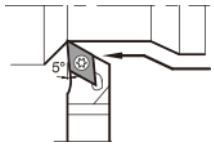
Part Number		Stock	Unit	Dimensions H1=h	B	L1	L2	F1	S	Standard Corner-R(rε)	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts
SCLNR	6-2.4FF	●	inch	0.375	0.375	6.00	0.590	0.375	0	0.008	SB-3080TR	LTW-10SS	CNGU242.. CNMU242..
	8-2.4DF	●		0.500	0.500	6.00	0.590	0.500	0	0.008			
	10-2.4CF	●		0.625	0.625	5.00	0.590	0.625	0	0.008			
SCLNR	1010K-07FF	●	mm	10	10	120	15	10	0	0.2			
	1212F-07FF	●		12	12	85	15	12	0	0.2			
	1212K-07FF	●		12	12	120	15	12	0	0.2			
	1616K-07FF	●		16	16	120	15	16	0	0.2			

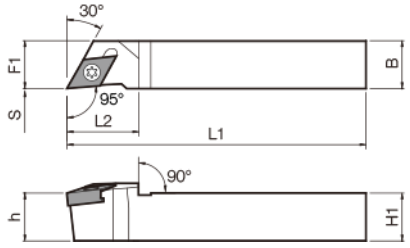
Applicable Inserts

Application	Finishing-Medium	Medium-Roughing	Finishing	Low Feed
Ref. Page	B38	B38	B38	B38
Shape / Toolholder	SK	GK	FR-F	(F/E)R-U
SCLNR...-2.4... SCLNR...-07FF	CNGU24..	CNMU24..	CNGU24..	CNGU24..

Recommended Cutting Conditions E39

SDLN (Without Offset • External / Copying)





Right-hand Shown

Side Rake Angle : - 6°
Inclination Angle : - 7°

Toolholder Dimensions

Part Number		Stock	Unit	Dimensions H1=h	B	L1	L2	F1	S	Standard Corner-R(rε)	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts
SDLNR	6-2.2FF	●	inch	0.375	0.375	6.00	0.708	0.375	0	0.008	SB-3080TR	LTW-10SS	DNGU222.. DNMU222..
	8-2.2DF	●		0.500	0.500	6.00	0.708	0.500	0	0.008			
	10-2.2CF	●		0.625	0.625	5.00	0.708	0.625	0	0.008			
SDLNR	1010K-08FF	●	mm	10	10	120	18	10	0	0.2			
	1212F-08FF	●		12	12	85	18	12	0	0.2			
	1212K-08FF	●		12	12	120	18	12	0	0.2			
	1616K-08FF	●		16	16	120	18	16	0	0.2			

Applicable Inserts

Application	Finishing-Medium	Medium-Roughing	Finishing	Low Feed
Ref. Page	B39	B39	B39	B39
Shape / Toolholder	SK	GK	FR-F	(F/E)R-U
SDLNR...2.2... SDLNR...-07FF	DNGU22..	DNMU22..	DNGU22..	DNGU22..

Recommended Cutting Conditions E39

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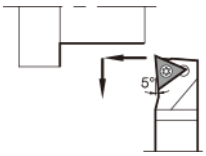
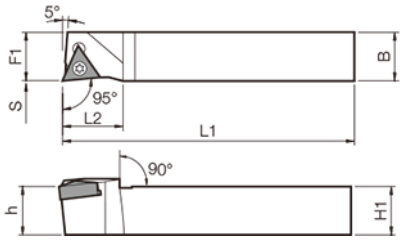
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

STLN (Without Offset • External / Up Facing)





Right-hand Shown

Side Rake Angle : - 6°
Inclination Angle : - 7°

Toolholder Dimensions

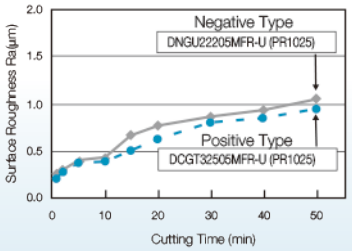
Part Number		Stock	Unit	Dimensions H1=h	B	L1	L2	F1	S	Standard Corner-R(re)	Spare Parts Clamp Screw	Spare Parts Wrench	Applicable Inserts
STLNR	6-1.8FF	●	inch	0.375	0.375	6.00	0.590	0.375	0	0.008	SB-2570TR	LTW-8SS	TNGU182..
	8-1.8DF	●		0.500	0.500	6.00	0.590	0.500	0	0.008			
	10-1.8CF	●		0.625	0.625	5.00	0.590	0.625	0	0.008			
STLNR	1010K-09FF	●	mm	10	10	120	15	10	0	0.2			
	1212F-09FF	●		12	12	85	15	12	0	0.2			
	1212K-09FF	●		12	12	120	15	12	0	0.2			
	1616K-09FF	●		16	16	120	15	16	0	0.2			

Applicable Inserts

Application	Finishing	Low Feed
Ref. Page	B40	B40
Shape / Toolholder	FR-F	(E/F)R-U
STLNR...1.8... STLNR...-09FF	TNGU18..	TNGU18..

Double-sided design allows both edges to be used. Compared to the positive type, the double-sided design offers less cost per insert and more stability.

Surface roughness comparison (Sharp edge)



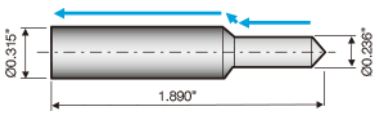
<Cutting Conditions>
Workpiece Material : 1045 Steel Vc=325sfm, D.O.C.=0.059", f=0.0012ipr, Wet

(Internal Evaluation)

Case Studies

303 Stainless Steel

- Spool
<0.236" Dia. portion>
- Vc=225sfm
- D.O.C.=0.049"
- f=0.001ipr
- Wet
<0.315" Dia. portion>
- Vc=425sfm
- D.O.C.=0.001"
- f=0.001ipr
- Wet



Required Surface 0.8μmRa

DNGU22205MF-SK (PR1025)	60,000 pcs/Insert (4 edges)
Competitor D (DCGT)	20,000 pcs/Insert (2 edges)

Competitor D (DCGT) machined 10,000 pcs/edge. PR1025 machined 15,000 pcs/edge resulting in 3 times longer tool life per insert.

(User Evaluation)

Recommended Cutting Conditions

Workpiece Material	Grades PR1005	PR1025	PR1225	PR1425
Free-Cutting Steel	◕ Vc=325sfm (200~500)	-	-	-
Carbon Steel / Alloy Steel	◔ Vc=325sfm (200~500)	◔ Vc=325sfm (200~500)	◔ Vc=325sfm (200~500)	◕ Vc=400sfm (200~650)
Stainless Steel	-	◔ Vc=325sfm (200~500)	◕ Vc=250sfm (175~500)	○ Vc=325sfm (250~500)

◕ : Light Interruption / Continuous / 1st Recommendation
◔ : Light Interruption / Continuous / 2nd Recommendation
● : Continuous / 1st Recommendation
○ : Continuous / 2nd Recommendation

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

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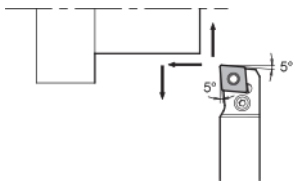
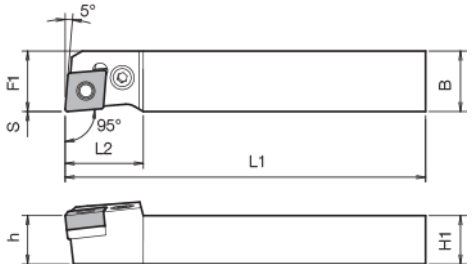
PCLN-FF (Without Offset • External / Facing)





Right-hand Shown

Side Rake Angle : - 6°
Inclination Angle : - 6°

Toolholder Dimensions

Part Number		Stock	Dimensions (mm)						Standard Corner-R(rε)	Spare Parts					
			H1=h	B	L1	L2	F1	S		Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
PCLNR	1620JX-12FF	○	16	20	120	26	20	0	0.8	LL-2N	LS-2N	LC-42N	LSP-2	PC-2	LW-3
	2020JX-12FF	○	20	20	120	26	20	0	0.8						

Applicable Inserts (1st Recommendation)

Application	Finishing-Medium	Medium-Roughing
Ref. Page	➡ B41	➡ B41
Shape / Toolholder	FP-SK 	FP-TK 
PCLNR...-12FF	CNGG43..	CNGG43..

Recommended Cutting Conditions ➡ E39

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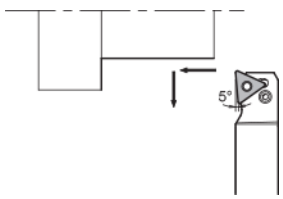
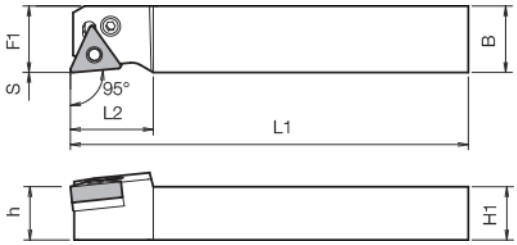
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

PTLN-FF (Without Offset • External / Up Facing)





Side Rake Angle : - 6°
Inclination Angle : - 6°

Right-hand Shown

Toolholder Dimensions

Part Number		Stock	Dimensions (mm)						Standard Corner-R(rε)	Spare Parts					
			H1=h	B	L1	L2	F1	S		Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
PTLNR	**1620JX-16FF**	○	16	20	120	24	20	0	0.8	LL-1N	LS-1N	LT-32N ※LT-32N-20	LSP-1	PC-1	FH-2.5
	2020JX-16FF	○	20	20	120	24	20	0	0.8						

※ When using inserts whose corner R(rε) is greater than 1.6mm, please purchase and use **LT-32N-20** shim to prevent workpiece and shim interference

Applicable Inserts (1st Recommendation)

Application	Finishing-Medium	Medium-Roughing
Ref. Page	**B41**	**B41**
Shape / Toolholder	**FP-SK**	**FP-TK**
PTLNR...-16FF	TNGG33..	TNGG33..

Recommended Cutting Conditions **E39**

KSTB...CCET

Fig.1

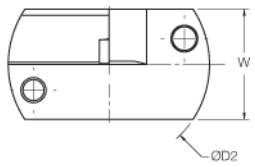
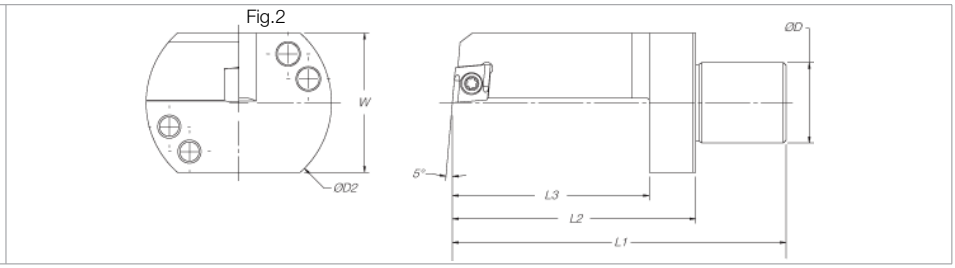


Fig.2



Toolholder Dimensions

Part Number	Stock	Applicable Inserts		Dimensions (inch) ØD	L1	L2	L3	W	ØD2	Spare Parts: Clamp Screw	Spare Parts: Wrench	Fig.	Reference Machine
KSTB SR16/20 CCET215	●	CCET CCGT	21.5	0.866	3.323	2.250	1.875	1.1	2.0	SB-2560TR	FT-8	1	SR16, SR20
KSTB SR16/20 CCET325	●		32.5	0.866	3.323	2.250	1.875	1.1	2.0	SB-4085TR	FT-15	1	SR16, SR20
KSTB SR32J CCET325	●		32.5	0.866	3.605	2.625	2.125	1.5	2.0	SB-4085TR	FT-15	2	SR32J

KSTB...DCET

Fig.1

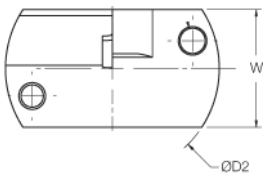
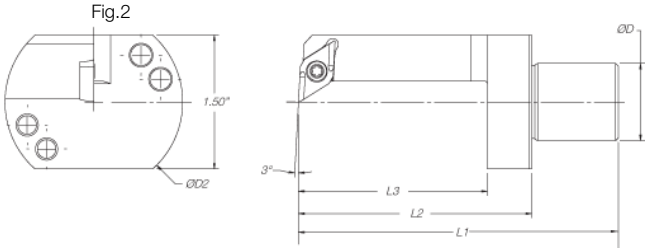


Fig.2



Toolholder Dimensions

Part Number	Stock	Applicable Inserts		Dimensions (inch) ØD	L1	L2	L3	W	ØD2	Spare Parts: Clamp Screw	Spare Parts: Wrench	Fig.	Reference Machine
KSTB SR16/20 DCET215	●	DCET DCGT	21.5	0.866	3.323	2.250	1.875	1.1	2.0	SB-2560TR	FT-8	1	SR16, SR20
KSTB SR16/20 DCET325	●		32.5	0.866	3.323	2.250	1.875	1.1	2.0	SB-4085TR	FT-15	1	SR16, SR20
KSTB SR32J DCET325	●		32.5	0.866	3.605	2.625	2.125	1.5	2.0	SB-4085TR	FT-15	2	SR32J

KSTB...VBET

Fig.1

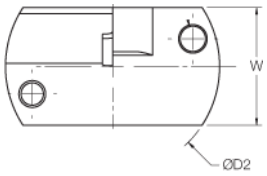
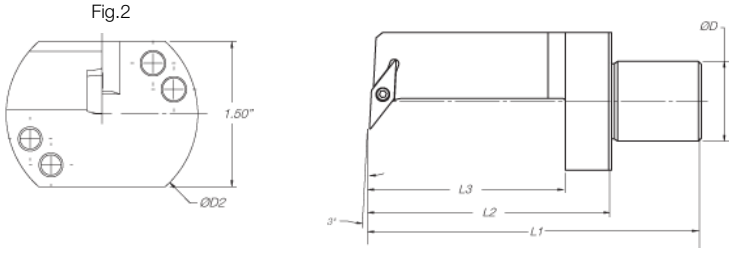


Fig.2



Toolholder Dimensions

Part Number	Stock	Applicable Inserts		Dimensions (inch) ØD	L1	L2	L3	W	ØD2	Spare Parts: Clamp Screw	Spare Parts: Wrench	Fig.	Reference Machine
KSTB SR16/20 VBET22	●	VBET	22	0.866	3.323	2.250	1.875	1.1	2.0	SB-2570TR	FT-8	1	SR16, SR20
KSTB SR32J VBET22	●		22	0.866	3.605	2.625	2.125	1.5	2.0	SB-2570TR	FT-8	2	SR32J

Note: All KSTB holders are right-hand, which require neutral or left-hand inserts

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KSTB...TGF

Fig.1

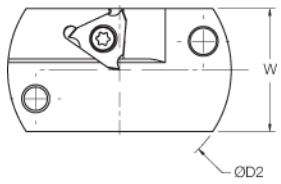
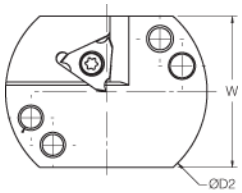
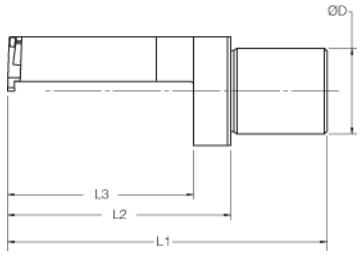


Fig.2





Toolholder Dimensions

Part Number	Stock	Applicable Inserts	Dimensions (inch)						Spare Parts		Fig.	Reference Machine
			ØD	L1	L2	L3	W	ØD2	Clamp Screw	Wrench		
KSTB SR16/20 TGF32	●	TGF32L_	0.866	3.323	2.250	1.875	1.1	2.0	SB-4070TRS	FT-10	1	SR16, SR20
KSTB SR32J TGF32	●		0.866	3.605	2.625	2.125	1.5	2.0	SB-4070TRS	FT-10	2	SR32J

KSTB...TT

Fig.1

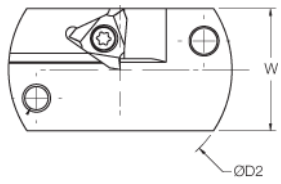
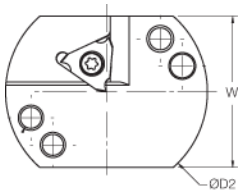
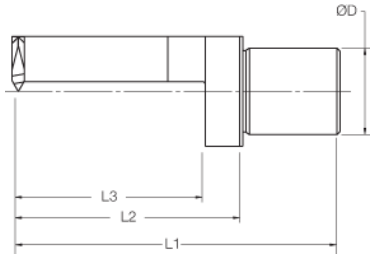


Fig.2





Toolholder Dimensions

Part Number	Stock	Applicable Inserts	Dimensions (inch)						Spare Parts		Fig.	Reference Machine
			ØD	L1	L2	L3	W	ØD2	Clamp Screw	Wrench		
KSTB SR16/20 TT32	●	TT32_	0.866	3.323	2.250	1.875	1.1	2.0	SB-4070TRS	FT-10	1	SR16, SR20
KSTB SR32J TT32	●		0.866	3.605	2.625	2.125	1.5	2.0	SB-4070TRS	FT-10	2	SR32J

Note: All KSTB holders are right-hand, which require neutral or left-hand inserts

Recommended Cutting Conditions - External Turning (Positive Insert)

[D.O.C. Indicates Radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Application	Recommended Chipbreaker	Recommended Grade	Corner-R (rε)	Lower Limit - **Recommendation** - Upper Limit		
								Vc (sfm)	D.O.C. (in)	Feed Rate f(ipr)
※P	Low-carbon Steel Low-carbon Alloy 1010, 4115, 5115 etc.	HB ≦ 300	Precision Finishing	Continuous	F	PR1425	0.002	325 - **500** - 650	0.002 - **0.003** - 0.006	0.001 - **0.002** - 0.004
				Interrupted		PR1425	0.008	250 - **400** - 525	0.002 - **0.004** - 0.008	0.001 - **0.004** - 0.006
			Precision Finishing (Molded Chipbreaker)	Continuous	CF	PR1425	0.008	325 - **500** - 650	0.001 - **0.002** - 0.004	0.001 - **0.002** - 0.005
			Finishing	Continuous	GF	PR1425	0.008	325 - **450** - 600	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted		PR1425	0.016	250 - **400** - 525	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing-Medium	Continuous	GQ	PR1425	0.008	250 - **400** - 525	0.031 - **0.118** - 0.197	0.001 - **0.002** - 0.004
				Interrupted		PR1425	0.016	200 - **325** - 450	0.031 - **0.079** - 0.118	0.001 - **0.002** - 0.004
			Low Feed & Large D.O.C.	Continuous	J , U	PR1425	0.008	250 - **325** - 450	0.020 - **0.079** - 0.138	0.001 - **0.002** - 0.004
	Medium-carbon Steel Medium-carbon Alloy 1045, 4137 etc.	HB ≦ 330	Precision Finishing	Continuous	F	PR1425	0.002	325 - **500** - 650	0.002 - **0.003** - 0.006	0.001 - **0.002** - 0.004
				Interrupted		PR1425	0.008	250 - **400** - 525	0.002 - **0.004** - 0.008	0.001 - **0.004** - 0.006
			Precision Finishing (Molded Chipbreaker)	Continuous	CF	PR1425	0.008	325 - **500** - 650	0.001 - **0.002** - 0.004	0.001 - **0.002** - 0.005
			Finishing	Continuous	GF	PR1425	0.008	325 - **450** - 600	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted		PR1425	0.016	250 - **400** - 525	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing-Medium	Continuous	GQ	PR1425	0.008	250 - **400** - 525	0.031 - **0.118** - 0.197	0.001 - **0.002** - 0.004
				Interrupted		PR1425	0.016	200 - **325** - 450	0.031 - **0.079** - 0.118	0.001 - **0.002** - 0.004
			Low Feed & Large D.O.C.	Continuous	J , U	PR1425	0.008	250 - **325** - 450	0.020 - **0.079** - 0.138	0.001 - **0.002** - 0.004
	High-carbon Alloy D2, H13 etc.	HB ≦ 280	Precision Finishing	Continuous	F	PR1425	0.002	325 - **500** - 650	0.002 - **0.003** - 0.006	0.001 - **0.002** - 0.004
				Interrupted		PR1425	0.008	250 - **400** - 525	0.002 - **0.004** - 0.008	0.001 - **0.004** - 0.006
			Precision Finishing (Molded Chipbreaker)	Continuous	CF	PR1425	0.008	325 - **500** - 650	0.001 - **0.002** - 0.004	0.001 - **0.002** - 0.005
			Finishing	Continuous	GF	PR1425	0.008	325 - **450** - 600	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted		PR1425	0.016	250 - **400** - 525	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing-Medium	Continuous	GQ	PR1425	0.008	250 - **400** - 525	0.012 - **0.059** - 0.118	0.001 - **0.002** - 0.004
				Interrupted		PR1425	0.016	200 - **325** - 450	0.012 - **0.039** - 0.079	0.001 - **0.002** - 0.004
			Low Feed & Large D.O.C.	Continuous	J , U	PR1425	0.008	250 - **325** - 450	0.020 - **0.079** - 0.138	0.001 - **0.002** - 0.004
M	Stainless Steel 303, 304, 316, 420 etc.	HB ≦ 220	Finishing	Continuous	GF	PR1225	0.008	250 - **325** - 400	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
				Interrupted		PR1225	0.016	200 - **250** - 325	0.012 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Medium	Continuous	GQ	PR1225	0.008	250 - **325** - 400	0.020 - **0.059** - 0.118	0.001 - **0.003** - 0.005
				Interrupted		PR1225	0.016	200 - **250** - 325	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.006
	Stainless Steel S17400 etc.	HB ≦ 300	Finishing	Continuous	GF	PR1225	0.008	125 - **200** - 250	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
				Interrupted		PR1225	0.016	100 - **175** - 225	0.012 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Medium	Continuous	GQ	PR1225	0.008	125 - **200** - 250	0.020 - **0.039** - 0.079	0.001 - **0.003** - 0.005
				Interrupted		PR1225	0.016	100 - **175** - 225	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.006
K	Gray Cast Iron NO.35 NO.45 NO.50 etc.	HB ≦ 250	Finishing	Continuous	Conventional	CA4505	0.016	325 - **400** - 500	0.008 - **0.020** - 0.039	0.004 - **0.006** - 0.008
				Interrupted		CA4505	0.016	250 - **325** - 400	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Medium	Continuous	Conventional	CA4505	0.016	325 - **400** - 500	0.020 - **0.039** - 0.079	0.004 - **0.006** - 0.008
				Interrupted		CA4505	0.031	250 - **325** - 400	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.006
	Nodular Cast Iron 65-45-12 80-60-03 etc.	HB ≦ 270	Finishing	Continuous	Conventional	CA4515	0.016	250 - **325** - 400	0.008 - **0.020** - 0.039	0.004 - **0.006** - 0.008
				Interrupted		CA4515	0.016	200 - **250** - 325	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Medium	Continuous	Conventional	CA4515	0.016	250 - **325** - 400	0.020 - **0.039** - 0.079	0.004 - **0.006** - 0.008
				Interrupted		CA4515	0.031	200 - **250** - 325	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.006
N	Non-ferrous Metals Copper Alloy Aluminum Alloy (Si 10% Under) etc.	HB ≦ 100	High Speed Finishing (Rainbow Colored Finish)	Continuous	Without Chipbreaker	KPD001	0.008	500 - **825** - 1150	0.002 - **0.004** - 0.012	0.002 - **0.004** - 0.006
			Finishing	Continuous	F , FSF	KW10	0.008	325 - **500** - 650	0.002 - **0.012** - 0.020	0.001 - **0.003** - 0.004
				Interrupted		KW10	0.016	325 - **500** - 650	0.002 - **0.012** - 0.020	0.001 - **0.003** - 0.004
			Medium	Continuous	U , USF	KW10	0.008	325 - **500** - 650	0.008 - **0.020** - 0.059	0.001 - **0.004** - 0.008
				Interrupted		KW10	0.016	325 - **500** - 650	0.008 - **0.020** - 0.059	0.001 - **0.004** - 0.008
S	Titanium Alloy Ti-6Al-4V etc.	HB ≦ 400	Precision Finishing (Rainbow Colored Finish)	Continuous	Without Chipbreaker	KPD001	0.008	325 - **400** - 500	0.002 - **0.004** - 0.012	0.001 - **0.003** - 0.004
				Interrupted		KPD001	0.016	225 - **325** - 400	0.002 - **0.004** - 0.012	0.001 - **0.003** - 0.004
			Medium	Continuous	FSF , USF	PR1005	0.016	100 - **175** - 225	0.004 - **0.020** - 0.039	0.001 - **0.004** - 0.008
				Interrupted		PR1005	0.016	100 - **175** - 225	0.004 - **0.020** - 0.039	0.001 - **0.004** - 0.008
	Heat-restistant Alloys Inconel 625 Inconel 718	HB ≦ 350	Finishing	Continuous	F , U Without Chipbreaker	PR1005	0.016	25 - **100** - 175	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
				Interrupted		PR1005	0.031	25 - **100** - 175	0.008 - **0.020** - 0.028	0.001 - **0.002** - 0.004
			Finishing	Continuous	MQ	PR1310	0.016	125 - **200** - 250	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
				Interrupted		PR1310	0.031	125 - **200** - 250	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
H	Hardened Steel Hard Materials D2, H13 etc.	40 ~ 50 HRC	Finishing	Continuous	GK	PR1425	0.008	125 - **200** - 250	0.004 - **0.012** - 0.020	0.001 - **0.003** - 0.004
				Interrupted		PR1425	0.016	125 - **200** - 250	0.004 - **0.012** - 0.020	0.001 - **0.003** - 0.004
		50 ~ 68 HRC	Finishing	Continuous	ME MET	KBN05M	0.008	250 - **400** - 500	0.004 - **0.012** - 0.020	0.001 - **0.003** - 0.004
				Interrupted		KBN05M	0.016	200 - **325** - 400	0.004 - **0.012** - 0.020	0.001 - **0.003** - 0.004

※ For machining free-cutting steels, use PR1005 at Vc=650sfm or less. For D.O.C. and feed rate (f), refer to specs for low carbon steels.

Recommended Cutting Conditions - Back Turning

KTKF E12

Workpiece Material		MEGACOAT NANO PR1425		MEGACOAT PR1225		Remarks
		Grooving	Turning	Grooving	Turning	
Carbon steel / Alloy Steel (1045, etc.)	Vc (sfm)	★ 250 ~ 650		☆ 200 ~ 500		Wet
	Feed (ipr)	0.0004 ~ 0.0012	0.0008 ~ 0.0059	0.0004 ~ 0.0012	0.0008 ~ 0.0059	
Stainless Steel (304 etc.)	Vc (sfm)	☆ 200 ~ 500		★ 200 ~ 425		
	Feed (ipr)	0.0004 ~ 0.0008	0.0008 ~ 0.0039	0.0004 ~ 0.0008	0.0008 ~ 0.0039	
Cast Iron (Gray, Nodular etc.)	Vc (sfm)	-		-		
	Feed (ipr)	-		-		
Aluminum	Vc (sfm)	-		-		
	Feed (ipr)	-		-		
Brass	Vc (sfm)	-		-		
	Feed (ipr)	-		-		

Workpiece Material		PVD Coated Carbide PR1025		Carbide KW10		PCD KPD001		Remarks
		Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon steel / Alloy Steel (1045, etc.)	Vc (sfm)	☆ 200 ~ 500		-		-		Wet
	Feed (ipr)	0.0004 ~ 0.0012	0.0008 ~ 0.0059	-		-		
Stainless Steel (304 etc.)	Vc (sfm)	☆ 175 ~ 400		-		-		
	Feed (ipr)	0.0004 ~ 0.0008	0.0008 ~ 0.0039	-		-		
Cast Iron (Gray, Nodular etc.)	Vc (sfm)	-		175 ~ 325		-		
	Feed (ipr)	-		0.0004 ~ 0.0012	0.0008 ~ 0.00395	-		
Aluminum	Vc (sfm)	-		650 ~ 1475		200 ~ 500		
	Feed (ipr)	-		0.0004 ~ 0.0012	0.0008 ~ 0.00395	0.0004 ~ 0.0012	0.0008 ~ 0.00395	
Brass	Vc (sfm)	-		325 ~ 650		200 ~ 425		
	Feed (ipr)	-		0.0004 ~ 0.0008	0.0008 ~ 0.0039	0.0004 ~ 0.0008	0.0008 ~ 0.0039	

★ : 1st Recommendation
☆ : 2nd Recommendation

KTKF (GQ Chipbreaker) E12

Workpiece Material		MEGACOAT NANO PR1425		MEGACOAT PR1225		Remarks
		Grooving	Turning	Grooving	Turning	
Carbon steel / Alloy Steel (1045, etc.)	Vc (sfm)	★ 250 ~ 650		☆ 200 ~ 500		Wet
	Feed (ipr)	0.0004 ~ 0.0015	0.0008 ~ 0.0059	0.0004 ~ 0.0015	0.0008 ~ 0.0059	
Stainless Steel (304 etc.)	Vc (sfm)	☆ 200 ~ 500		★ 200 ~ 425		
	Feed (ipr)	0.0004 ~ 0.0012	0.0008 ~ 0.0039	0.0004 ~ 0.0012	0.0008 ~ 0.0039	

★ : 1st Recommendation
☆ : 2nd Recommendation

ABS15, ABW15, ABW23 E17~E19

Workpiece Material		MEGACOAT NANO PR1425		MEGACOAT PR1225		PVD Coated Carbide PR1025		Remarks
		Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon steel / Alloy Steel (1045, etc.)	Vc (sfm)	★ 250 ~ 600		☆ 200 ~ 500		☆ 250 ~ 325		Wet
	Feed (ipr)	0.0008	0.0008 ~ 0.0028	0.0008	0.0008 ~ 0.0028	0.0008	0.0008 ~ 0.0028	
Stainless Steel (304 etc.)	Vc (sfm)	☆ 125 ~ 425		★ 125 ~ 400		☆ 100 ~ 175		
	Feed (ipr)	0.0008	0.0008 ~ 0.0020	0.0008	0.0008 ~ 0.0020	0.0008	0.0008 ~ 0.0020	
Aluminum	Vc (sfm)	-		-		-		
	Feed (ipr)	-		-		-		
Brass	Vc (sfm)	-		-		-		
	Feed (ipr)	-		-		-		

Workpiece Material		Carbide KW10		Remarks
		Grooving	Turning	
Carbon steel / Alloy Steel (1045, etc.)	Vc (sfm)	-		Wet
	Feed (ipr)	-		
Stainless Steel (304 etc.)	Vc (sfm)	-		
	Feed (ipr)	-		
Aluminum	Vc (sfm)	★ 500 ~ 650		
	Feed (ipr)	0.0008	0.0008 ~ 0.0039	
Brass	Vc (sfm)	☆ 325 ~ 525		
	Feed (ipr)	0.0012	0.0008 ~ 0.0059	

★ : 1st Recommendation
☆ : 2nd Recommendation

BORING

F

F1 - F72

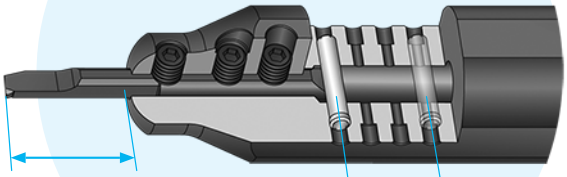
EZ Bar

Kyocera's Original EZ Adjust Structure

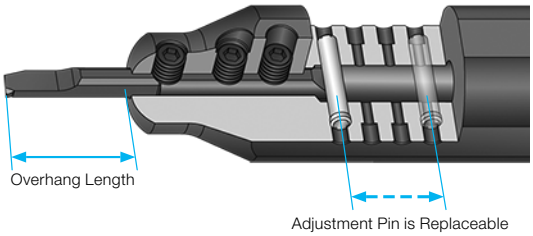
- **Easy adjustment and high precision**
- **EZ Bar minimizes deviation with high rigidity clamping**

MEGACOAT PR1225
for Stable Cutting and Extended Tool Life

Kyocera's Original EZ Adjust Structure

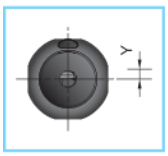


Tool Preparation Time is Reduced

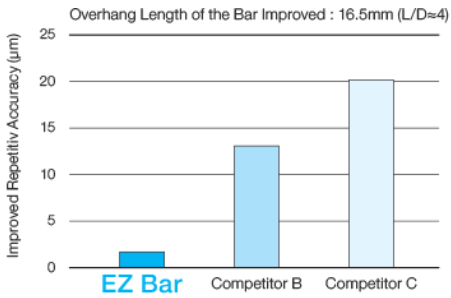


Easy adjustment and high precision after bar changes due to adjustable overhang lengths.

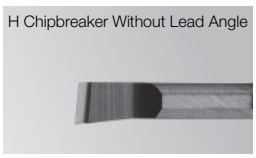
High Precision Cutting with High Repeatability



• Comparison of Repetitive Accuracy
Y = Cutting Edge Height

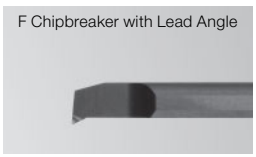


Boring Insert Lineup



Tough Edge (General Purpose)

Recommended D.O.C. More than 0.008"

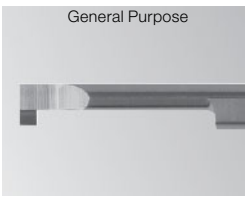


Sharp Cutting (for Finishing)

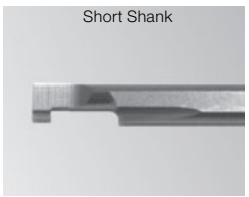
Recommended D.O.C. Less than 0.008"

No Chipbreaker
(for Brass and Non-ferrous Materials)

Grooving Insert Lineup



Applicable for Various Applications

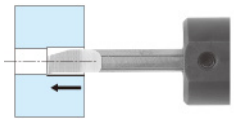
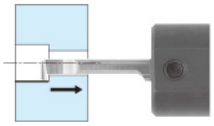
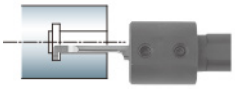
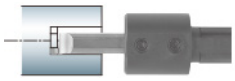
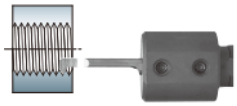


Low Cutting Force and Anti-chattering

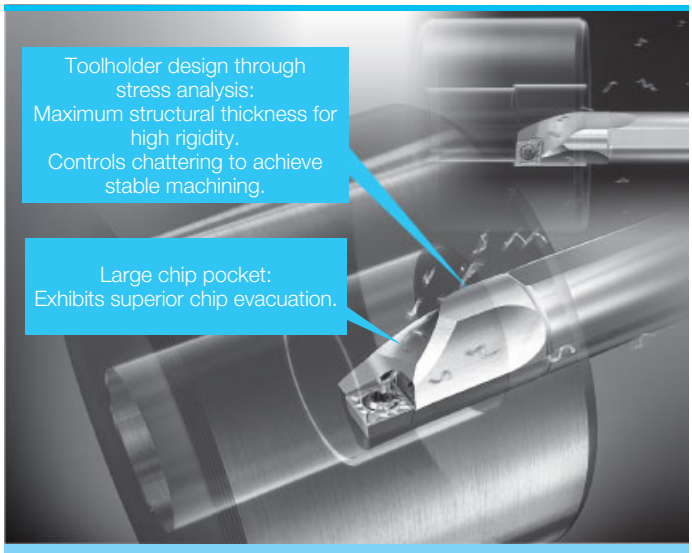
- **New EZVB for internal profiling**
- **New EZ Bar Plus lineup added**

Micro Boring Double-Sided Micro-Bars

- Cost efficient 2-edge inserts.
- Minimum bore diameter 2.0mm.
- Adjustable overhang length.
- Integral shank is adopted to enable installation to standard sleeves.
- Sleeves are applicable to various machine manufacturers' specifications.

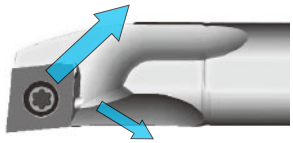
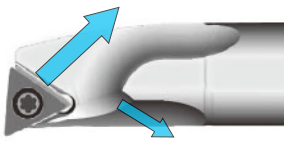
Boring	Back Boring	Grooving	Face Grooving	Threading
				
HPB → F28	HPBT → F28	HPG → G36	HPFG → G47	HPT → J14

New Dynamic Bar



Dynamic design driven by the latest computer simulation technology

Chip Evacuation Direction

SCLC(P)	STLB(P)
	

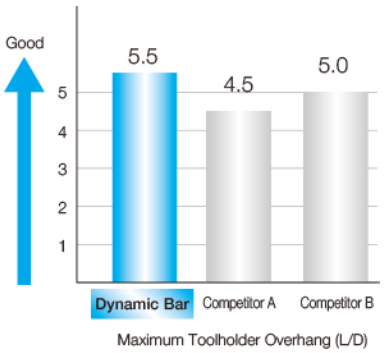
Better Evacuation by Dual Chip Flow

Superior Chip Evacuation (External Coolant)

	Dynamic Bar	Competitor A	Competitor B
Inside the Work-piece			

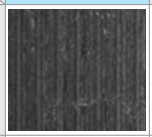
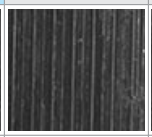
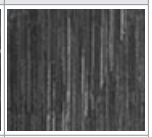
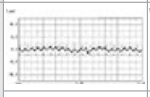
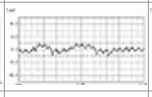
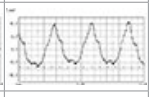
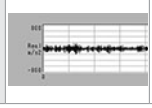
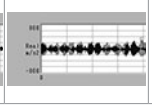
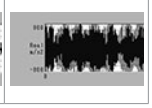
In Competitor A and B's products chips remain inside the workpiece, but chips from Dynamic Bar are all evacuated from the workpiece.

Anti-chatter Vibration Performance



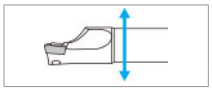
<Cutting Conditions>
4415
Vc=500sfm
D.O.C.=0.020"
f=0.004ipr
S16-SCLPR09
CPMH321L-Y

Surface Finish Comparison

	Dynamic Bar	Competitor A	Competitor B
Surface Wall			
Surface Roughness	 Ra=0.4μm Rz=2.3μm	 Ra=0.6μm Rz=3.6μm	 Ra=3.4μm Rz=14.0μm
Oscillatory Waveform			

<Cutting Conditions>
4415
Vc=700sfm
D.O.C.=0.020"
f=0.004ipr
A16Q-SCLPR09-18
CPMH321XP(PV7020)
L/D=4
External Coolant

Direction of Vibration Measurement



Boring Bar Identification System (Round Shank)

	ANSI (in)	ISO (mm)
G :	3.50	90
H :	4.00	100
J :	4.50	110
K :	5.00	125
L :	5.50	140
M :	6.00	150
N :	6.50	160
P :	6.75	170
Q :	7.00	180
R :	8.00	200
S :	10.00	250
X :	Special	

S	Steel
A	Steel (with coolant hole)
C	Carbide
E	Carbide (with coolant hole)

S : Screw Clamp

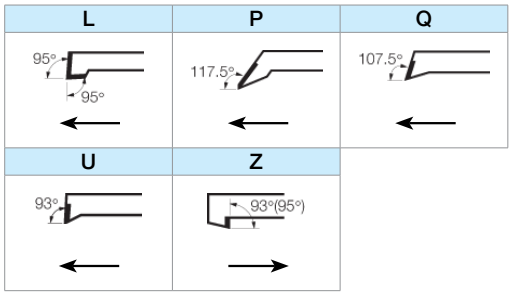
C : 80° Rhombic
D : 55° Rhombic
J : 70° Rhombic
T : 60° Triangle
V : 35° Rhombic
W : 80° Trigon

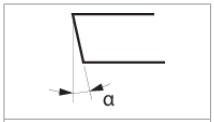
R : Right-hand
L : Left-hand

Optional Code
A : Dynamic Bar
AE : Excellent Bar (Dynamic Bar type)

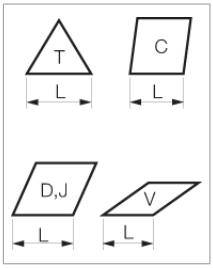
	Shank	Toolholder Length	Clamping System		Insert Shape		Hand of Tool	Others	
ANSI (inch)	S	08	M	– S	C	L	P	R	3 – 3
ISO (metric)	S	12	M	– S	C	L	P	R	09 – 16 A

Shank Diameter | Cutting Edge Angle | Insert Relief Angle | Insert Size | Min. Bore Dia.



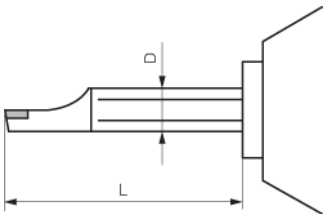


B : 5° Positive
C : 7° Positive
P : 11° Positive



Guidelines for Overhang Length of Boring Bar (Workpiece Material 1045)

Shank Material	L/D	Example
Steel (Dynamic Bar)	4.0	S…SCLP-A
Excellent Bar (Dynamic Bar)	5.5	A…SCLP-AE
Carbide	7.0	C(E)…SCLP



Carbide Shank Bar


Standard Size


← 2/3 Size

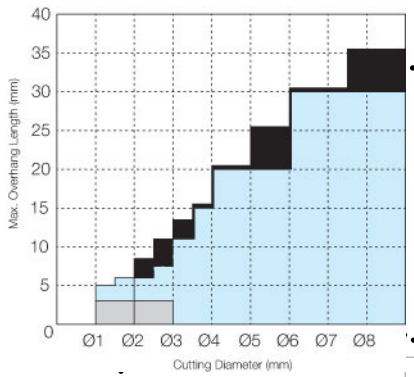

← 1/2 Size

- **Short Shank Series**
  Short Shank Types with length of 1/2 and 2/3 of standard type are available. (1/2 or 2/3 is shown at the end of the description)

Solid Bars

Application	Solid Bars	Shape	Shank Type Max. Overhang Length L/D	Min. Bore Dia. ØA (mm) 1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	Toolholder / Sleeve Ref. Page	Application
Boring	**EZB-HP** EZ Bar → F14		Solid L/D=~5			●		●		●		●		●		●		→ F20~ → F25	
	EZB-ST EZ Bar → F15		Solid L/D=~5			●	●	●	●	●	●		●		●		●		
	EZB-NB EZ Bar → F16		Solid L/D=~5			●	●	●	●	●	●		●		●		●		
	EZB-NB EZ Bar PCD Diamond → F16		Solid L/D=~5					●		●		●		●		●			
	HPB Double-Sided Micro-Bars → F28		Solid L/D=~5			●		●		●		●		●		●		→ F24~ → F25	
	VNB-S Swiss IQ Bars → F30		Solid	●	●	●		●		●								→ F32, → F33	
	VNB Swiss IQ Bars → F30		Solid			●		●		●		●		●		●			
	VNBX-S Swiss IQ Bars → F34		Solid	●	●	●		●	●	●								→ F35	
	TWB Twin Bars → F36		Solid	●	●	●	●	●										→ F36	
	TWBT Twin Bars → F37		Solid	●	●	●	●	●										→ F37	
Back Boring	**HPBT** Double-Sided Micro-Bars → F28		Solid L/D=~5							●		●						→ F24~ → F25	
	VNBT Double-Sided Micro-Bars → F30		Solid							●		●						→ F32, → F33	
Internal Profiling	**EZVB** EZ Bar NEW → F19		Solid							●		●						→ F21~ → F25	

Usage Classification (Solid Bar type: Minimum Cutting Dia. 1mm)



EZ Bar
Easy Adjustment & High Precision

→ F12

Twin Bars → F36~F37

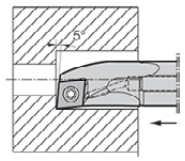
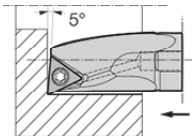
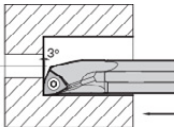
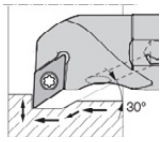
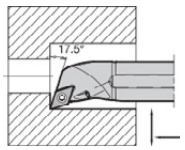
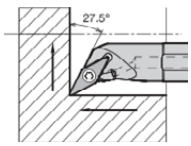
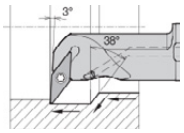
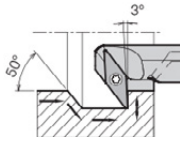
SVN → F32
Square Shank Straight

S...SVN → F33
Standard Round Shank

SVNS → F32

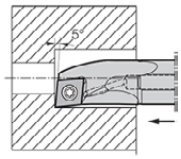
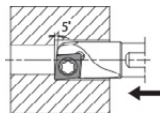
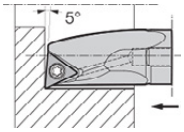
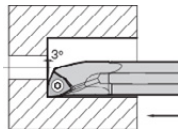
Swiss IQ Bars → F30

Dynamic Bar (inch)

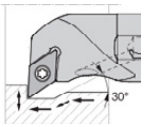
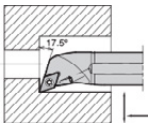
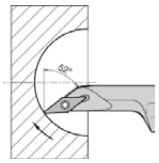
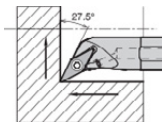
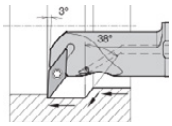
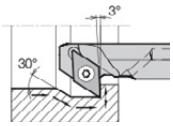
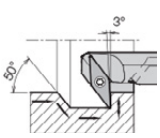
Application	Overview Shape	Boring Bar Type	Shank Type Max. Overhang Length L/D	Coolant Hole		Min. Bore Dia. ØA (in)										Toolholder / Sleeve Ref. Page
				Yes	No	0.240	0.312	0.392	0.413	0.450	0.480	0.512	0.551	0.580	0.630	0.700	
Boring / Internal Facing		A...SCLC-AE	Excellent L/D=~5.5	●							●			● (0.600)			F38
		E...SCLC-A	Carbide L/D=~7.0	●							●			● (0.600)			
		A...SCLP-AE	Excellent L/D=~5.5	●					●		●			●		●	F40
		A...STLB(P)-AE	Excellent L/D=~5.5	●				●		●				●		●	F52
		S...STLB-AE	Excellent L/D=~5.5		○		●										
Boring		A...SWUB(P)-AE	Excellent L/D=~5.5	●							● (0.472)				●		F64
		S...SWUB-AE	Excellent L/D=~5.5		○	●	●										
Copying		A...SDUC-AE	Excellent L/D=~5.5	●									●		●		F44
		E...SDUC-A	Carbide L/D=~7.0	●									●		●		
		A...SDQC-AE	Excellent L/D=~5.5	●								●			●		F46
		A...SVPB(C)-AE	Excellent L/D=~5.5	●											●		F60
		A...SVUB(C)-AE	Excellent L/D=~5.5	●											●		F62
Back Boring		A...SVZB(C)-AE	Excellent L/D=~5.5	●											●		

Min. Bore Dia. ØA is indicated by the figure under ● depending on the boring bar size.

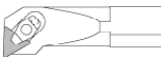
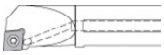
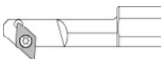
Dynamic Bar (metric)

Application	Overview Shape	Boring Bar Type	Shank Type Max. Overhang Length L/D	Coolant Hole Yes	Coolant Hole No	Min. Bore Dia. ØA (mm) 5	6	7	8	10	12	13	14	16	18	20	22	23	Toolholder / Sleeve Ref. Page
Boring / Internal Facing		A...SCLC-AE	Excellent L/D=~5.5	●						●	●		●		●				F38
		S...SCLC-AE	Excellent L/D=~5.5		○	●	●	●	●										
		S...SCLC-A	Steel L/D=~4.0		○					●	●		●		●				
		C...SCLC-A	Carbide L/D=~7.0		○	●	●	●	●										
		E...SCLC-A	Carbide L/D=~7.0	●						●	●		●		●				
		A...SCLP-AE	Excellent L/D=~5.5	●							●		●	●	●				F40
		S...SCLP-A	Steel L/D=~4.0		○						●		●	●	●				
		E...SCLP-A	Carbide L/D=~7.0	●							●		●		●				
	EZ Bar PLUS 	S...SCLC-EZ	Steel L/D=~3.0		○														F18
		C...SCLC-EZ	Carbide L/D=~5.0		○														
		E...STLP-A	Carbide L/D=~7.0	●						●	●		●		●				F52
		C...STLB-A			○				●										
		A...STLP-AE	Excellent L/D=~5.5	●						●	●		●		●				
		S...STLB-AE			○				●										
		S...STLB(P)-A	Steel L/D=~4.0		○				●	●	●		●		●				
		A...STLC-AE	Excellent L/D=~5.5	●						●	●		●		●				F51
		S...STLC-A	Steel L/D=~4.0		○					●	●		●		●				
Boring		S...SWUB(P)-A	Steel L/D=~4.0		○		●	●	●	●	●		●		●				F64
		S...SWUB-AE	Excellent L/D=~5.5		○		●	●	●										
		A...SWUB(P)-AE	Excellent L/D=~5.5	●						●	●		●		●				
		C...SWUB-A	Carbide L/D=~7.0		○		●	●	●										
		E...SWUB(P)-A	Carbide L/D=~7.0	●						●	●		●		●				

Dynamic Bar (metric)

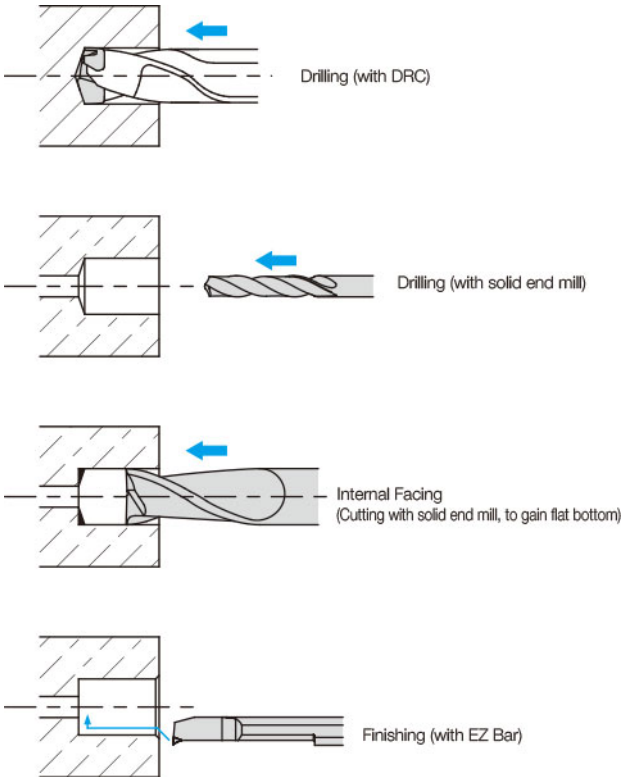
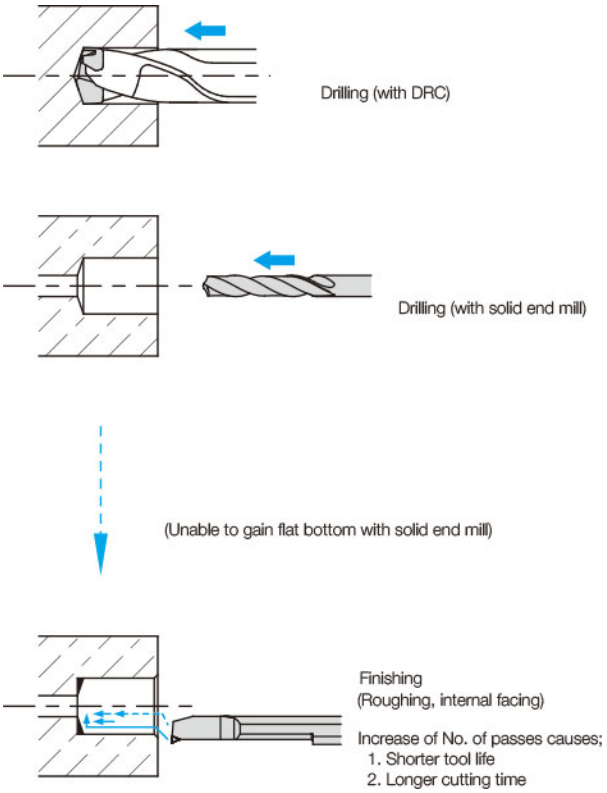
Application	Overview Shape	Boring Bar Type	Shank Type Max. Overhang Length L/D	Coolant Hole		Min. Bore Dia. ØA (mm)												Toolholder / Sleeve Ref. Page
				Yes	No	5	6	7	8	10	12	13	14	16	18	20	22	23	
Copying		A...SDUC-AE	Excellent L/D=~5.5	●									●	●		●		●	F44
		S...SDUC-A	Steel L/D=~4.0		○								●	●		●		●	
		E...SDUC-A	Carbide L/D=~7.0	●									●	●		●		●	
		A...SDQC-AE	Excellent L/D=~5.5	●								●		●		●			F46
		S...SDQC-A	Steel L/D=~4.0		○							●		●		●			
		E...SDQC-A	Carbide L/D=~7.0	●								●		●		●			
		A...SVJC-AE	Excellent L/D=~5.5	●										●		●			F58
		A...SVJP-AE		●										●					
		S...SVJC-A	Steel L/D=~4.0		○									●		●			
		S...SVJP-A			○									●					
		A...SVPB(C)-AE	Excellent L/D=~5.5	●									●		●		●		F60
		S...SVPB(C)-A	Steel L/D=~4.0		○								●		●		●		
		E...SVPB(C)-A	Carbide L/D=~7.0	●									●		●		●		
		A...SVUB(C)-AE	Excellent L/D=~5.5	●										●		●			F62
		S...SVUB(C)-A	Steel L/D=~4.0		○									●		●			
		E...SVUB(C)-A	Carbide L/D=~7.0	●											●				
Back Copying		A...SDZC-AE	Excellent L/D=~5.5	●									●	●		●		●	F47
		S...SDZC-A	Steel L/D=~4.0		○								●	●		●		●	
		E...SDZC-A	Carbide L/D=~7.0	●									●	●		●		●	
		A...SVZB(C)-AE	Excellent L/D=~5.5	●										●		●			F62
		S...SVZB(C)-A	Steel L/D=~4.0		○									●		●			

Boring Bar for General Purpose

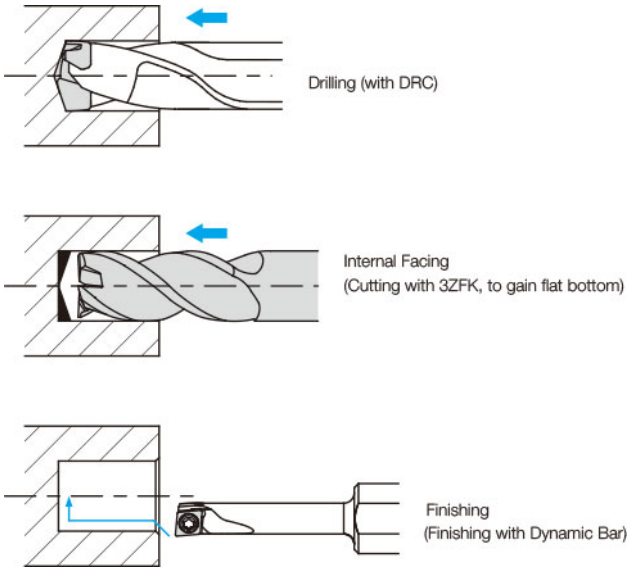
Application	Overview Shape	Boring Bar Type	Shank Type Max. Overhang Length L/D	Coolant Hole		Min. Bore Dia. ØA (in)										Toolholder / Sleeve Ref. Page
				Yes	No	0.240	0.312	0.392	0.415	0.472	0.480	0.512	0.564	0.600	0.630	0.700	
Boring		S...STUP(B)	Steel L/D=~3.0		○		●	● (0.392)		●					●		F54
		S...CTUP	Steel L/D=~3.0		○									● (0.625)			F55
		C...SWUB	Carbide L/D=~7.0		○	●	●										F66
		S...SWUB	Steel L/D=~3.0		○	●	●										F67
Boring / Internal Facing		S...SCLP(C)	Steel L/D=~3.0		○			●		●				●	●		F42
		A...SCLC	Steel L/D=~3.0	●					●		●			●			
		C...SCLP(C)	Carbide L/D=~3.0		○	● (0.197)		●		●	●				●		
		C...SJLC	Carbide L/D=~7.0		○	● (5.5mm)											F50
		C...STXP(B)	Carbide L/D=~7.0		○	● (7.5mm)	● (9mm)		● (11mm)								F56
Copying		S...STWP	Steel L/D=~3.0		○					● (0.476)					●		F54
		S...SDUC	Steel L/D=~3.0		○								●				F48
Back Boring		S...SDZC	Steel L/D=~3.0		○									● (0.596)	●		F49
		C...SJZC	Carbide L/D=~7.0		○	● (6.5mm)											F50
		C...STZB	Carbide L/D=~7.0		○		● (8.5mm)										F56

Min. Bore Dia. ØA is indicated by the figure under ● depending on the boring bar size.

Boring Example ①

Example of Cutting Time Reduction	Example of Conventional Cutting
	

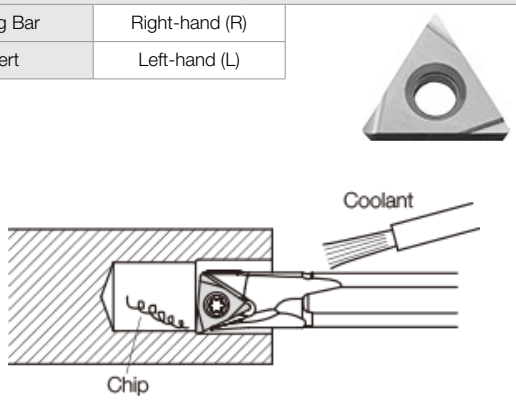
Boring Example ②

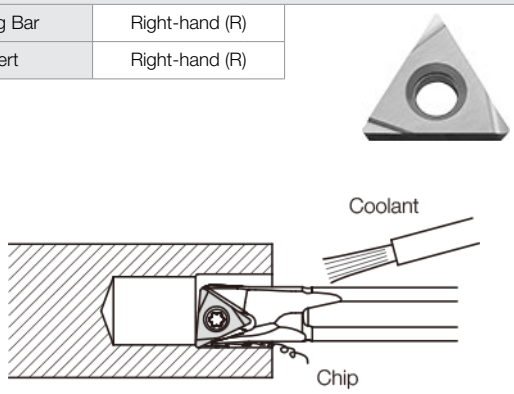
Example of Cutting Time Reduction


How to Select Ground Chipbreakers (for Internal Finishing in Automatic Lathes)

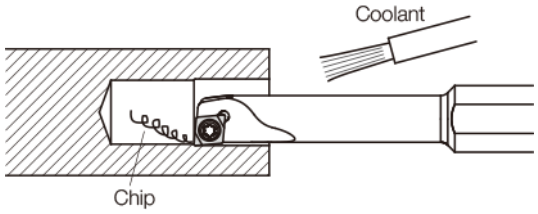
Choose a ground insert with an appropriate hand, in order to evacuate chips to the outside of the workpiece.

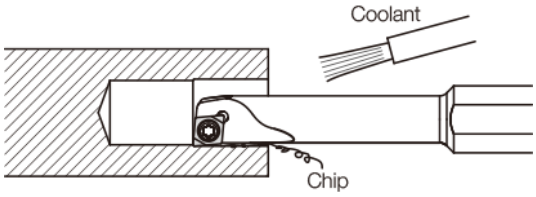
General Combinations		Combination for chip evacuation toward the exit of hole	
Boring Bar	Right-hand (R)	Boring Bar	Right-hand (R)
Insert	Left-hand (L)	Insert	Right-hand (R)





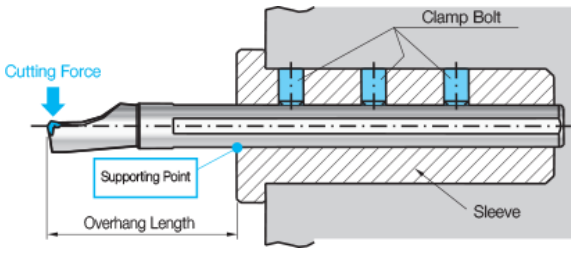
Boring Bar	Right-hand (R)	Boring Bar	Right-hand (R)
Insert	Left-hand (L)	Insert	Right-hand (R)





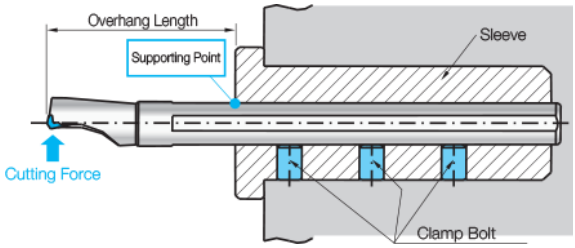
Toolholder Attachment to Reduce Chattering

① Normal Mounting



- When clamping rigidity is low, chattering tends to occur. Tighten the toolholder firmly with at least two clamp bolts.
- If the entrance of the sleeve is deformed or loosened, actual overhang length becomes longer and chattering can occur

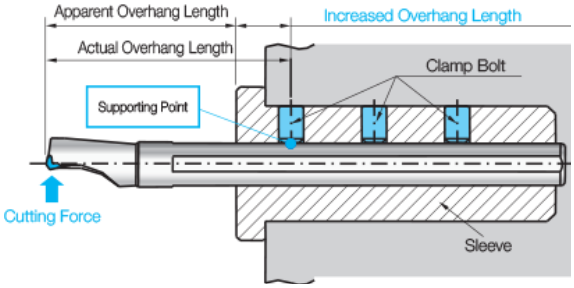
② Reverse Mounting



Tighten the clamp bolts from the insert mounting side

※ Edge height can be affected by which side the clamping bolts are tightened from.

③ Bad Attachment



- When the supporting point lies on the front of the clamp bolt, the actual overhang length becomes longer and it can cause chattering. The edge height can also be changed.

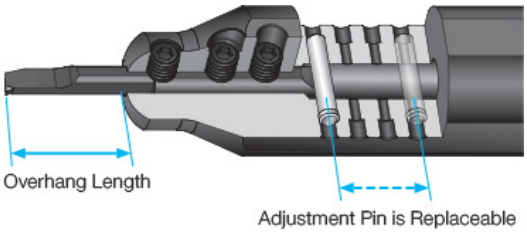
EZ Bar

Kyocera's Original EZ Adjust Structure

- **Easy adjustment and high precision**
- **EZ Bar minimizes deviation with high rigidity clamping**

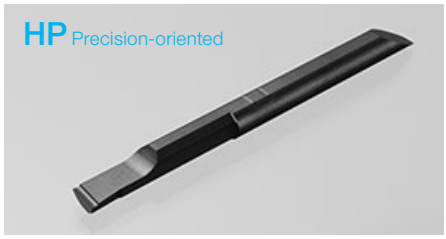
MEGACOAT PR1225
for Stable Cutting and Extended Tool Life

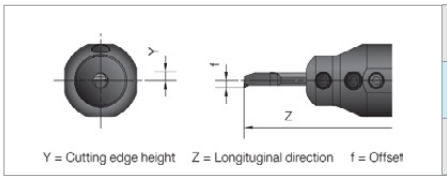
Easy Adjustment / High Precision



How to Select Bars

HP for high precision and ST for cost reduction (Tolerances are different.)





	Insert Tolerance	Offset	Longitudinal direction	Cutting edge height	Min. Bore Dia.
HP Precision-oriented	±0.025mm	±0.05mm	+0.05mm/0mm	Same as Shank Dia.
ST Cost-oriented	±0.060mm	±0.10mm	+0.06mm/0mm	Not same as shank dia.

* See "Dimensions" page for details.

How to Select Sleeves

New indexable boring bar added
EZ Bar Plus

NEW **CT** with coolant hole
HP with EZ adjust structure
ST for cost oriented cutting

CT and HP can adjust overhang length by EZ adjust structure

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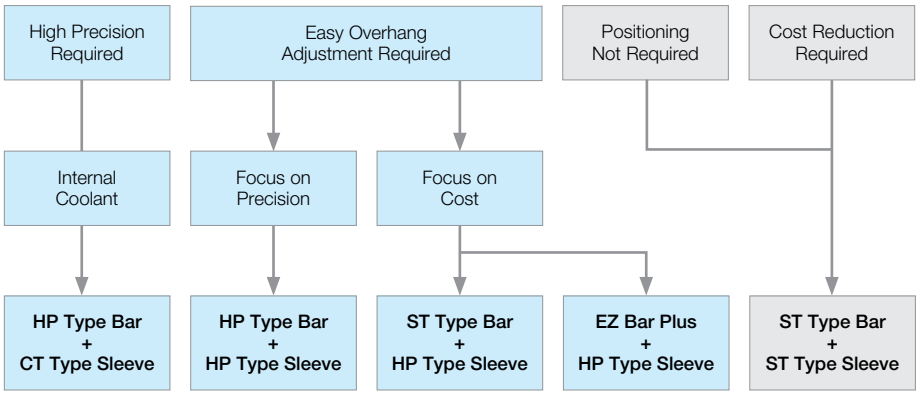
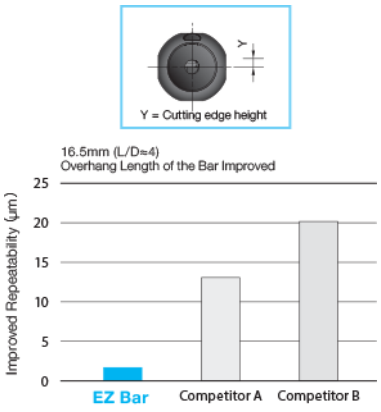
Visit us online at KyoceraPrecisionTools.com

How to Select Bars and Sleeves for Each Application



HP Type Bar + CT/HP Type Sleeve

Excellent repeatability and drastic tool change time reduction

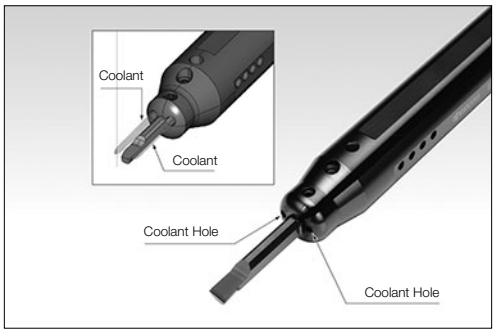


EZH-CT (High precision with coolant hole)

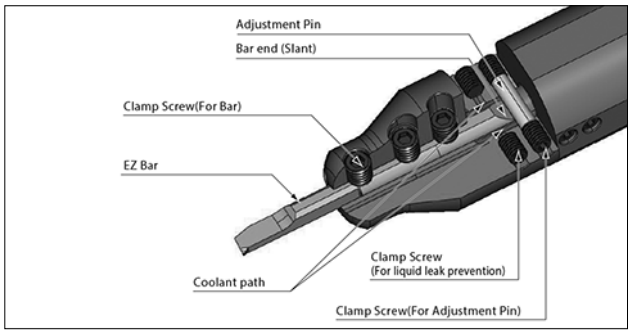
Now added in the **EZH** sleeve Lineup!

Kyocera's unique EZ adjust structure and internal coolant system improve dimensional accuracy and surface roughness!

EZH-CT Applicable Sleeve



EZH-CT Internal Stucture



How to Set Bar in Sleeve

● How to use adjustment pin and prevent coolant leakage (Fig.1)

① Put the adjustment pin into the hole according to the overhang length and push it into the sleeve using the wrench "LW-1.5".

② Tighten the clamp screw for the adjustment pin "HS3x4P" using the wrench "LW-1.5" from both sides of the sleeve.

③ Put the additional clamp screws "HS3x4P" into the un-used adjustment pin holes to prevent coolant leakage using the wrench "LW-1.5" and fix them from both sides of the sleeve.

● How to secure the bar (Fig.2)

① With the chip pocket upward, set the bar into the sleeve. Press the slant face of the bar end with the adjustment pin. Make sure that the bar does not rotate. **(Fig.3)**

② Tighten the clamp screw with wrench "LW-2" and secure the bar. (Use "LW-1.5" if shank dia. is 3mm or less.)

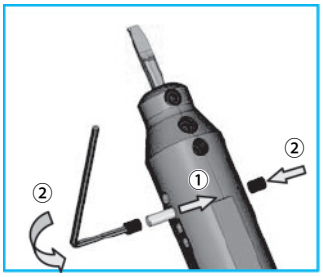


Fig.1 How to use the adjustment pin

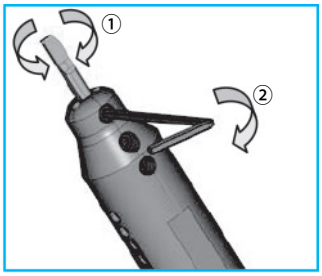


Fig.2 How to secure the bar

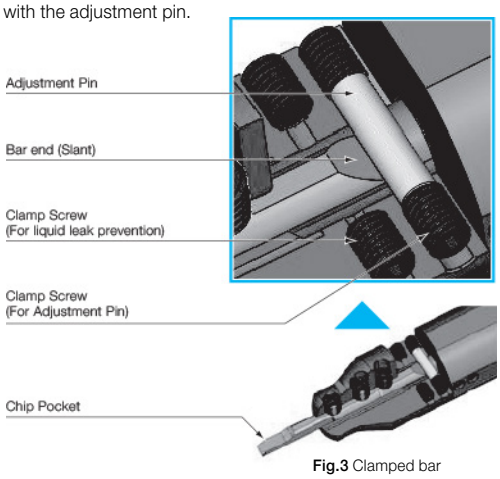
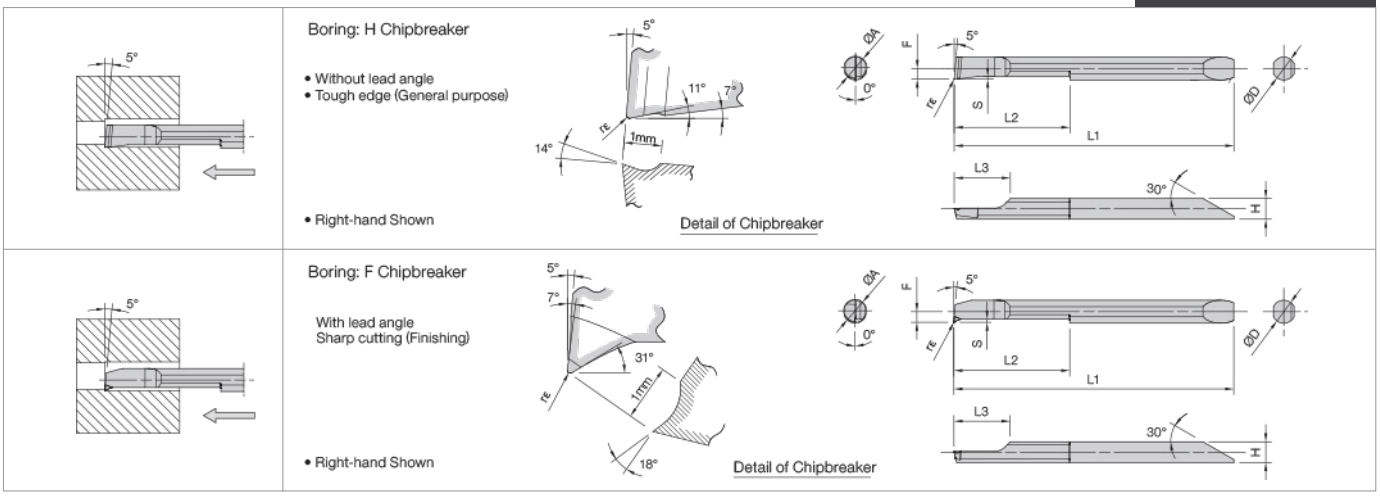


Fig.3 Clamped bar

EZB-HP (Boring)

High Precision



EZ Bar Dimensions (metric)

Part Number		Min. Bore Dia.	Dimensions (mm)								Grade		Applicable Sleeve
											MEGACOAT	Carbide NEW	F20~ F25
		ØA	ØD	H	L1	L2	L3	F	S	rε	PR1225	GW05	
EZBR	020020HP-008H	2.0	2.0	1.8	32.0	8.0	4.9	0.85	0.25	0.08 ±0.015	●	○	EZH020…
	025025HP-008H	2.5	2.5	2.3	35.0	10.5	4.9	1.10	0.25	0.08 ±0.015	●		EZH025…
	025025HP-015H	2.5	2.5	2.3	35.0	10.5	4.9	1.10	0.25	0.15 ±0.02	●		
	030030HP-008H	3.0	3.0	2.7	38.9	13.0	6.9	1.35	0.30	0.08 ±0.015	●	○	EZH030…
	030030HP-015H	3.0	3.0	2.7	38.9	13.0	6.9	1.35	0.30	0.15 ±0.02	●		
	035035HP-008H	3.5	3.5	3.2	41.9	15.0	6.9	1.60	0.40	0.08 ±0.015	●		EZH035…
	035035HP-015H	3.5	3.5	3.2	41.9	15.0	6.9	1.60	0.40	0.15 ±0.02	●		
	040040HP-008H	4.0	4.0	3.6	48.8	20.0	9.8	1.85	0.40	0.08 ±0.015	●	○	EZH040…
	040040HP-015H	4.0	4.0	3.6	48.8	20.0	9.8	1.85	0.40	0.15 ±0.02	●		
	050050HP-008H	5.0	5.0	4.6	58.1	25.0	9.8	2.35	0.50	0.08 ±0.015	●	○	EZH050…
	050050HP-015H	5.0	5.0	4.6	58.1	25.0	9.8	2.35	0.50	0.15 ±0.02	●		
	060060HP-008H	6.0	6.0	5.6	66.1	30.0	11.8	2.85	0.60	0.08 ±0.015	●	○	EZH060…
	060060HP-015H	6.0	6.0	5.6	66.1	30.0	11.8	2.85	0.60	0.15 ±0.02	●		
EZBR	020020HP-005F	2.0	2.0	1.8	32.0	8.0	4.9	0.85	0.25	0.05 ±0.01	●		EZH020…
	025025HP-005F	2.5	2.5	2.3	35.0	10.5	4.9	1.10	0.30	0.05 ±0.01	●		EZH025…
	025025HP-015F	2.5	2.5	2.3	35.0	10.5	4.9	1.10	0.30	0.15 ±0.02	●		
	030030HP-005F	3.0	3.0	2.7	38.9	13.0	6.9	1.35	0.40	0.05 ±0.01	●		EZH030…
	030030HP-015F	3.0	3.0	2.7	38.9	13.0	6.9	1.35	0.40	0.15 ±0.02	●		
	035035HP-005F	3.5	3.5	3.2	41.9	15.0	6.9	1.60	0.50	0.05 ±0.01	●		EZH035…
	035035HP-015F	3.5	3.5	3.2	41.9	15.0	6.9	1.60	0.50	0.15 ±0.02	●		
	040040HP-005F	4.0	4.0	3.6	48.8	20.0	9.8	1.85	0.50	0.05 ±0.01	●		EZH040…
	040040HP-015F	4.0	4.0	3.6	48.8	20.0	9.8	1.85	0.50	0.15 ±0.02	●		
	050050HP-005F	5.0	5.0	4.6	58.1	25.0	9.8	2.35	0.70	0.05 ±0.01	●		EZH050…
	050050HP-015F	5.0	5.0	4.6	58.1	25.0	9.8	2.35	0.70	0.15 ±0.02	●		
	060060HP-005F	6.0	6.0	5.6	66.1	30.0	11.8	2.85	0.90	0.05 ±0.01	●		EZH060…
	060060HP-015F	6.0	6.0	5.6	66.1	30.0	11.8	2.85	0.90	0.15 ±0.02	●		

Tolerance: Offset ±0.025mm (of the reference pin), overall length ±0.05mm, edge height +0.05/0mm

Recommended Cutting Conditions F17

EZ Bar Identification System

EZ B R 020 020 HP - 008 H

EZ Symbol of Bar	Application	Hand	Min. Bore Dia.	Shank Dia.	Precision	Corner-R (rε)	Chipbreaker
	B: B-Boring Bar	R: Right-hand	020 : 2.0mm	020 : 2.0mm	HP: High Precision	008 : 0.08mm	H: H Chipbreaker (without lead angle)
			025 : 2.5mm	025 : 2.5mm	ST: Standard	015 : 0.15mm	F: F Chipbreaker (with lead angle)
							NB: Without chipbreaker

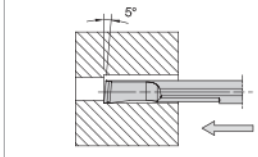
EZ Bars are sold in 1 piece boxes.

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

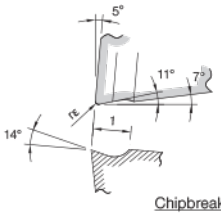
EZB-ST (Boring)

Cost Reduction

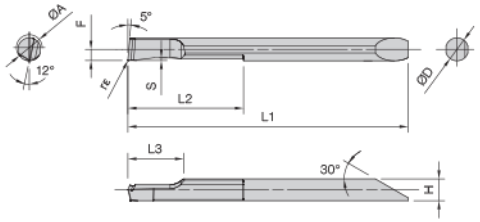


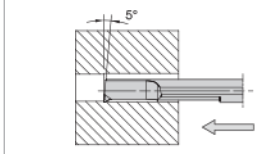
Boring: H Chipbreaker

- Without lead angle
- Tough edge (General purpose)
- Right-hand Shown



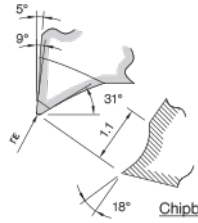
Chipbreaker Detail



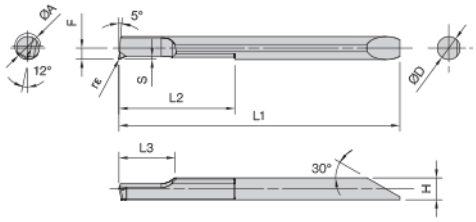


Boring: F Chipbreaker

- With lead angle
- Sharp cutting (Finishing)
- Right-hand Shown



Chipbreaker Detail



EZ Bar Dimensions (metric)

Part Number		Min. Bore Dia.	Dimensions (mm)								Grade MEGACOAT	Applicable Sleeve ➡ F20~ ➡ F25
		ØA	ØD	H	L1	L2	L3	F	S	rε	PR1225	
EZBR	020017ST-008H	2.0	1.7	1.5	27.3	7.0	4.7	0.79	0.19	0.08 ±0.015	●	EZH017…
	025020ST-008H	2.5	2.0	1.82	32.0	8.0	4.8	0.94	0.16	0.08 ±0.015	●	EZH020…
	025020ST-015H									0.15 ±0.02	●	
	030025ST-008H	3.0	2.5	2.3	35.0	10.5	4.8	1.19	0.15	0.08 ±0.015	●	EZH025…
	030025ST-015H									0.15 ±0.02	●	
	035030ST-008H	3.5	3.0	2.8	39.0	13.0	6.8	1.44	0.18	0.08 ±0.015	●	EZH030…
	035030ST-015H									0.15 ±0.02	●	
	040035ST-008H	4.0	3.5	3.3	42.0	15.0	6.7	1.69	0.24	0.08 ±0.015	●	EZH035…
	040035ST-015H									0.15 ±0.02	●	
	045040ST-008H	4.5	4.0	3.8	49.0	20.0	9.7	1.94	0.27	0.08 ±0.015	●	EZH040…
	045040ST-015H									0.15 ±0.02	●	
	055050ST-008H	5.5	5.0	4.8	58.2	25.0	9.7	2.44	0.33	0.08 ±0.015	●	EZH050…
	055050ST-015H									0.15 ±0.02	●	
	065060ST-008H	6.5	6.0	5.8	66.2	30.0	11.8	2.94	0.38	0.08 ±0.015	●	EZH060…
	065060ST-015H									0.15 ±0.02	●	
	075070ST-008H	7.5	7.0	6.8	74.2	35.0	11.7	3.44	0.44	0.08 ±0.015	●	EZH070…
	075070ST-015H									0.15 ±0.02	●	
EZBR	020017ST-005F	2.0	1.7	1.5	27.3	7.0	4.7	0.79	0.20	0.05 ±0.01	●	EZH017…
	025020ST-005F	2.5	2.0	1.82	32.0	8.0	4.8	0.94	0.16	0.05 ±0.01	●	EZH020…
	025020ST-015F									0.15 ±0.02	●	
	030025ST-005F	3.0	2.5	2.3	35.0	10.5	4.8	1.19	0.20	0.05 ±0.01	●	EZH025…
	030025ST-015F									0.15 ±0.02	●	
	035030ST-005F	3.5	3.0	2.8	39.0	13.0	6.8	1.44	0.26	0.05 ±0.01	●	EZH030…
	035030ST-015F									0.15 ±0.02	●	
	040035ST-005F	4.0	3.5	3.3	42.0	15.0	6.7	1.69	0.33	0.05 ±0.01	●	EZH035…
	040035ST-015F									0.15 ±0.02	●	
	045040ST-005F	4.5	4.0	3.8	49.0	20.0	9.7	1.94	0.31	0.05 ±0.01	●	EZH040…
	045040ST-015F									0.15 ±0.02	●	
	055050ST-005F	5.5	5.0	4.8	58.2	25.0	9.7	2.44	0.45	0.05 ±0.01	●	EZH050…
	055050ST-015F									0.15 ±0.02	●	
	065060ST-005F	6.5	6.0	5.8	66.2	30.0	11.7	2.94	0.59	0.05 ±0.01	●	EZH060…
	065060ST-015F									0.15 ±0.02	●	
	075070ST-005F	7.5	7.0	6.8	74.2	35.0	11.7	3.44	0.65	0.05 ±0.01	●	EZH070…
	075070ST-015F									0.15 ±0.02	●	

Tolerance: Offset ±0.06mm (of the reference pin), overall length ±0.1mm, edge height +0.06/0mm

Recommended Cutting Conditions ➡ F17

EZ Bars are sold in 1 piece boxes.

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

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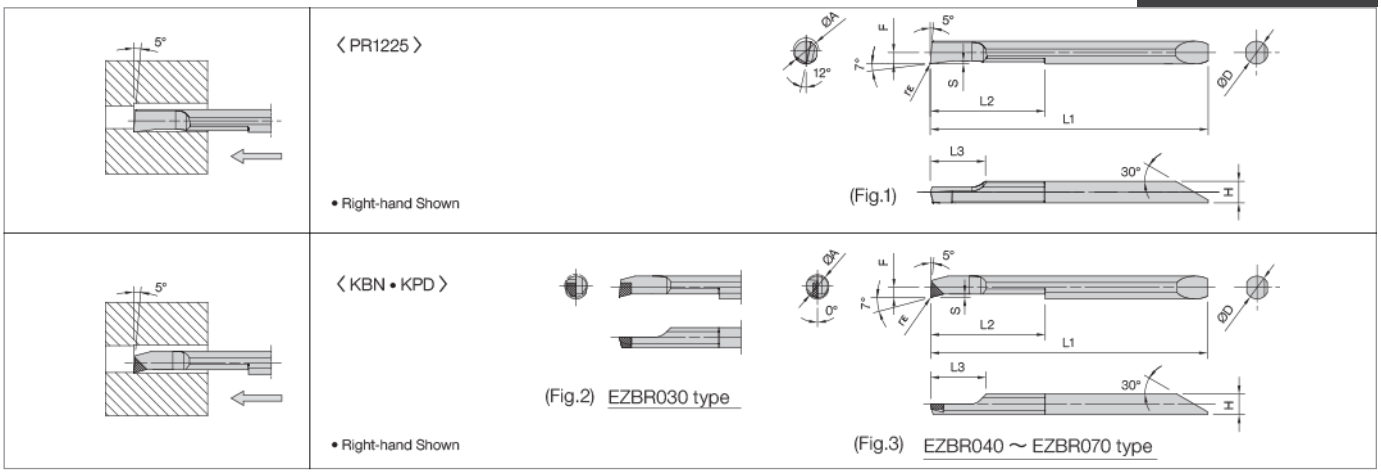
EZB-NB (Boring)

Without Chipbreaker



EZ Bar Dimensions (metric)

Part Number		Min. Bore Dia.	Dimensions (mm)								Shape	Grade			Applicable Sleeve → F20~ → F25
												MEGACOAT	CBN	PCD	
		ØA	ØD	H	L1	L2	L3	F	S	rε		PR1225	KBN05M	KPD001	
EZBR	020017-005NB	2.0	1.7	1.50	27.3	7.0	4.7	0.79	0.20	0.05 ±0.015	Fig.1	○			EZH017…
	025020-005NB	2.5	2.0	1.82	32.0	8.0	4.8	0.94	0.16		Fig.1	○			EZH020…
	030025-005NB	3.0	2.5	2.30	35.0	10.5	4.8	1.19	0.16		Fig.1	○			EZH025…
	035030-005NB	3.5	3.0	2.80	39.0	13.0	6.8	1.44	0.19		Fig.1	○			EZH030…
	040035-005NB	4.0	3.5	3.30	42.0	15.0	6.7	1.69	0.25		Fig.1	○			EZH035…
	045040-005NB	4.5	4.0	3.80	49.0	20.0	9.7	1.94	0.28		Fig.1	○			EZH040…
	055050-005NB	5.5	5.0	4.80	58.2	25.0	9.7	2.44	0.33		Fig.1	○			EZH050…
	065060-005NB	6.5	6.0	5.80	66.2	30.0	11.7	2.94	0.39		Fig.1	○			EZH060…
	075070-005NB	7.5	7.0	6.80	74.2	35.0	11.7	3.44	0.45		Fig.1	○			EZH070…
EZBR	030030-003NB	3.0	3.0	2.60	38.8	13.0	6.8	1.25	0.30	0.035 ±0.015	Fig.2		○		EZH030…
	040040-003NB	4.0	4.0	3.60	48.8	20.0	9.8	1.75	0.50		Fig.3		○		EZH040…
	050050-003NB	5.0	5.0	4.60	58.1	25.0	9.8	2.25	0.50		Fig.3		○		EZH050…
	060060-003NB	6.0	6.0	5.60	66.1	30.0	11.8	2.75	0.50		Fig.3		○		EZH060…
	070070-003NB	7.0	7.0	6.60	74.1	35.0	11.8	3.25	0.50		Fig.3		○		EZH070…
EZBR	040040-003NB	4.0	4.0	3.60	48.8	20.0	9.8	1.75	0.50	0.035 ±0.015	Fig.3			○	EZH040…
	050050-003NB	5.0	5.0	4.60	58.1	25.0	9.8	2.25	0.50		Fig.3			○	EZH050…
	060060-003NB	6.0	6.0	5.60	66.1	30.0	11.8	2.75	0.50		Fig.3			○	EZH060…
	070070-003NB	7.0	7.0	6.60	74.1	35.0	11.8	3.25	0.50		Fig.3			○	EZH070…

Edge Preparation

Grade	Edge Preparation	Remarks
PR1225	Sharp Edge	-
KBN05M	0.08mm×15° Chamfered Cutting Edge	T00815
KPD001	Sharp Edge	-

Recommended Cutting Conditions → F17

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Recommended Cutting Conditions

● H Chipbreaker (EZB-HP...H Type EZB-ST...H Type)

Workpiece Material	Insert Grade (Vc:sfm)		EZB020/025		EZB030/035		EZB040/045		EZB050/055/060/065/075		Remarks
	MEGACOAT	Carbide	Depth of Cut: D.O.C.(in), Feed: f(ipr)								
	PR1225	**GW05**	D.O.C.	f	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel (1045)	100~325	-	~0.0118	~0.0012	~0.0157	~0.0016	~0.0177	~0.0028	~0.0197	~0.0039	Wet
Stainless Steel (304)	100~250	-	~0.0079	~0.0008	~0.0118	~0.0012	~0.0138	~0.0020	~0.0157	~0.0028	
Non-ferrous Material	-	~325	~0.0118	~0.0020	~0.0157	~0.0024	~0.0177	~0.0039	~0.0197	~0.0059	

● F Chipbreaker (EZB-HP...F Type EZB-ST...F Type)

Workpiece Material	Insert Grade (Vc:sfm)	EZB020/025		EZB030/035		EZB040/045		EZB050/055/060/065/075		Remarks
	MEGACOAT	Depth of Cut: D.O.C.(in), Feed: f(ipr)								
	PR1225	D.O.C.	f	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel (1045)	100~325	~0.0079	~0.0012	~0.0079	~0.0020	~0.0118	~0.0028	~0.0118	~0.0028	Wet
Stainless Steel	100~250	~0.0079	~0.0008	~0.0079	~0.0012	~0.0098	~0.0020	~0.0098	~0.0020	

● NB Chipbreaker (Without Chipbreaker)

Workpiece Material	Insert Grade (Vc:sfm)	EZB020/025		EZB030/035		EZB040/045		EZB055/065/075		Remarks
	MEGACOAT	Depth of Cut: D.O.C.(in), Feed: f(ipr)								
	PR1225	D.O.C.	f	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel	100~325	~0.0118	~0.0012	~0.0157	~0.0016	~0.0177	~0.0028	~0.0197	~0.0039	Wet
Stainless Steel	100~250	~0.0079	~0.0008	~0.0118	~0.0012	~0.0138	~0.0020	~0.0157	~0.0028	
Non-ferrous Material	200~325	~0.0118	~0.0020	~0.0157	~0.0024	~0.0177	~0.0028	~0.0197	~0.0039	

Workpiece Material	Insert Grade (Vc:sfm)		EZB030		EZB040/045		EZB050/060/070		Remarks
	MEGACOAT	Diamond	Depth of Cut: D.O.C.(in), Feed: f(ipr)						
	KBN05M	**KPD001**	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Non-ferrous Material	-	~975	-	-	~0.0177	~0.0039	~0.0197	~0.0059	Wet
Hard Materials (including heat-treated steel)	~325	-	~0.0028	~0.0012	~0.0039	~0.0020	~0.0059	~0.0028	

EZ Bar Compatibility

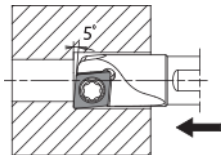
EZ Bar is compatible with conventional Micro-Bars

Sleeve \ Bar	**EZB...HP**	**EZB...ST/NB**	**HPB...**(Conventional)
EZH...CT/HP	○	○	※1 ※2 ○ (Compatible)
EZH...ST	○	○	※1 ○ (Compatible)
PSH...(Conventional)	※1 ○ (Compatible)	※1 ○ (Compatible)	○

※1 Some diameters of conventional Micro-Bars are incompatible
※2 Use them without Adjustment Pins. Overhang length of bar is not adjustable.

S-SCLC-EZ Type NEW

Maximum overhand length - L/D = ~3



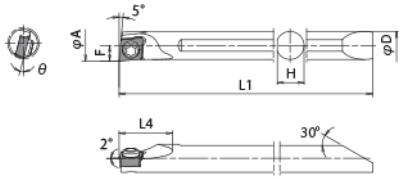


Fig.1

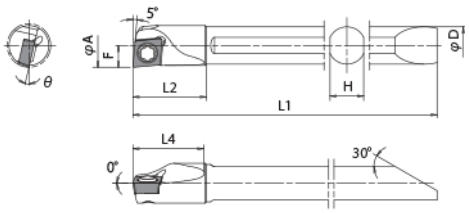


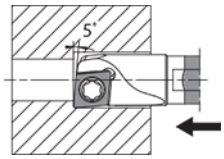
Fig.2

• Right-hand shown

• Left-hand insert for Right-hand toolholder

C-SCLC-EZ Type NEW

Maximum overhand length - L/D = ~5



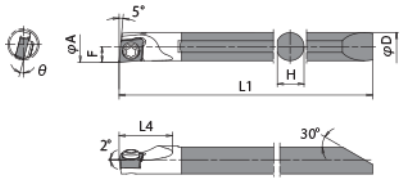


Fig.3

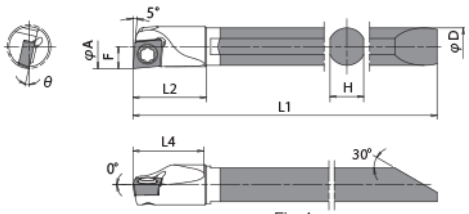


Fig.4

• Right-hand shown

• Left-hand insert for Right-hand toolholder

Toolholder Dimensions

Part Number		Stock (R)	Min. Bore Dia.	Dimensions (mm)							θ	Std. Corner-R (rε)	Coolant Hole	Drawing	Spare Parts		Applicable Sleeve → F20~ → F25
			ØA	ØD	H	L1	L2	L3	L4	F					Clamp Screw	Wrench	
Steel	S045X-SCLCR03-050EZ	●	5	4.5	4.3	42.4	-	-	8.5	2.5	15°	0.2	No	Fig.1	SB-1635-TR	FT-6	EZH045…
	S060X-SCLCR04-070EZ	●	7	6.0	5.4	53.9	11.8	-	11.5	3.5	13°	0.2	No	Fig.2	SB-2035TR		EZH060…
Carbide	C045X-SCLCR03-050EZ	●	5	4.5	4.3	51.4	-	-	8.5	2.5	15°	0.2	No	Fig.3	SB-1635TR		EZH045…
	C060X-SCLCR04-070EZ	●	7	6.0	5.4	65.9	11.8	-	11.5	3.5	13°	0.2	No	Fig.4	SB-2035TR		EZH060…

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing / Precision	Non-ferrous Metals	Hard Material
Ref. Page	→ B8	→ B11	→ B10	→ C12	→ C4
Shape / Toolholder	CF 	L-F 	L-FSF 	PCD 	CBN 
...SCLC□03-...	CCGT1109..	CCGT1109..	CCET1109..	-	CCMW1109..
...SCLC□04-...	CCGT1411..	CCGT1411..	CCET1411..	CCGW1411..	CCMW1411..

Recommended Cutting Conditions → F63~ → F64

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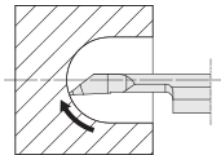
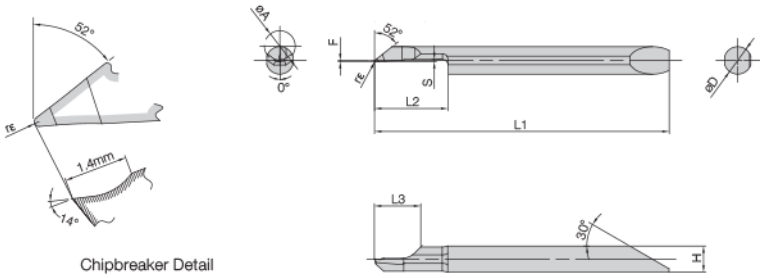
NEW ITEMS!

EZVB Type (Boring / Internal Facing / Internal Profiling) NEW





Chipbreaker Detail

• Right-hand shown

Toolholder Dimensions

Part Number		Min. Bore Dia.	Dimensions (mm)								Grade	Applicable Sleeve ➡ F20~ ➡ F25
											MEGACOAT	
		ØA	ØD	H	L1	L2	L3	F	S	rε	PR1225	
EZVBR	035030-010	3.5	3	2.8	38.0	8	5.8	0.17	0.22	±0.015 0.10	●	EZH030…
	045040-010	4.5	4	3.8	43.0	10	6.8	0.17	0.26		●	EZH040…
	055050-010	5.5	5	4.8	50.2	12	7.7	0.17	0.29		●	EZH050…
	065060-010	6.5	6	5.8	55.2	14	8.6	0.17	0.32		●	EZH060…

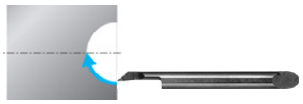
Recommended Cutting Conditions

Workpiece Material	Insert Grade (Vc:sfm)	EZB020/025		EZB030/035		EZB040/045		Remarks
	MEGACOAT	Depth of Cut: D.O.C.(in), Feed: f(ipr)						
	PR1225	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel (1045)	100~330	~0.0020	~0.0016	~0.0028	~0.0028	~0.0039	~0.0028	Wet
Stainless Steel	100~260	~0.0012	~0.0012	~0.0020	~0.0020	~0.0028	~0.0020	

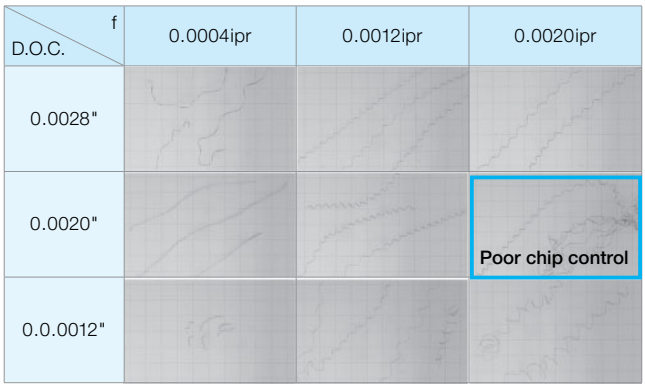
EZVB Type (Boring / Internal Facing / Internal Profiling)

Stable Machining with Better Chip Control

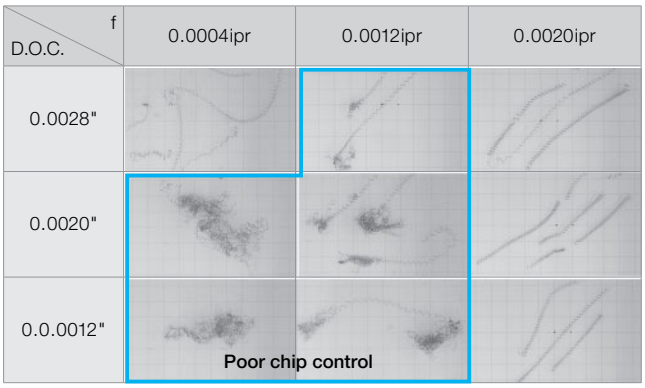
Spherical Internal Profiling



EZVBR045040-010



Competitor



Vc = 330sfm Workpiece: Stainless Steel (Wet)

EZH-CT (Applicable Sleeve) NEW

With coolant hole and EZ adjust structure

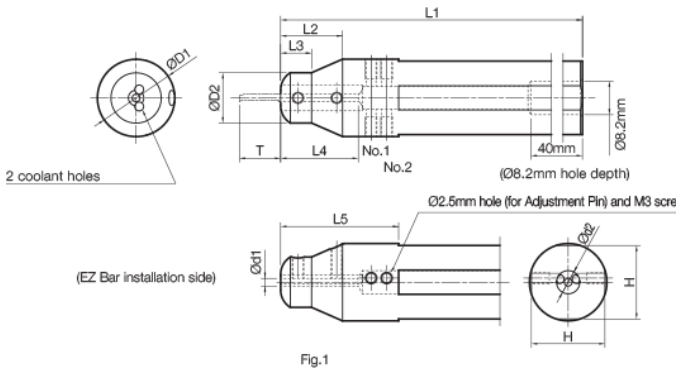


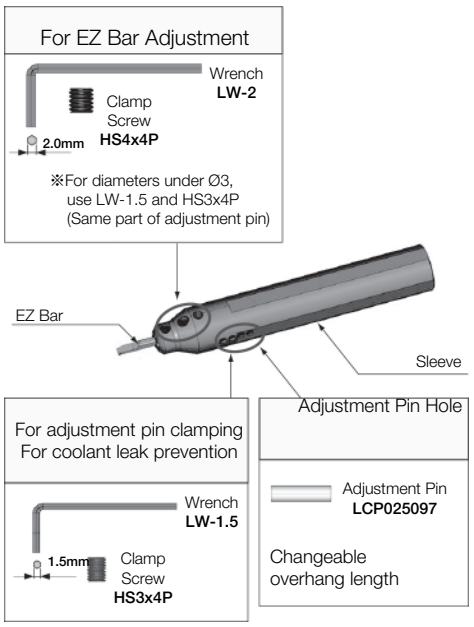
Fig.1

Part Number		Stock	Dimensions (mm)										T (mm) Overhang Length of Bar ※2				Drawing	Applicable EZ Bar → F14~ → F16 → F28 → J10
			Ød1	ØD1	ØD2	Ød2	H	L1	L2	L3	※1L4	L5	Adjustment Pin Setting No1	No2	No3	No4		
EZH	01719CT-120	●	1.7	0.75"	13	6	18.0	120	16	8	16	30.5	7.5	3.5	-	-	Fig.1	EZBR...017...
	01720CT-120	○	1.7	20	13	6	19.0	120										
	01722CT-135	○	1.7	22	13	6	21.0	135				41.5						
	01725.0CT-135	○	1.7	25	13	6	24.0	135				30.5						
	01725.4CT-120	●	1.7	1.00"	13	6	24.4	120										
EZH	02019CT-120	●	2.0	0.75"	13	6	18.0	120	16	8	20	30.5	8.5	4.5	-	-	Fig.1	EZBR...020... ※2 HPB用 0202...
	02020CT-120	○	2.0	20	13	6	19.0	120										
	02022CT-135	○	2.0	22	13	6	21.0	135				41.5						
	02025.0CT-135	○	2.0	25	13	6	24.0	135				30.5						
	02025.4CT-120	●	2.0	1.00"	13	6	24.4	120										
EZH	02519CT-120	●	2.5	0.75"	13	6	18.0	120	16	8	20	30.5	11.0	7.0	-	-	Fig.1	EZBR...025... EZTR...025...
	02520CT-120	○	2.5	20	13	6	19.0	120										
	02522CT-135	○	2.5	22	13	6	21.0	135				41.5						
	02525.0CT-135	○	2.5	25	13	6	24.0	135				30.5						
	02525.4CT-120	●	2.5	1.00"	13	6	24.4	120										

※1: L4 shows Ød1 length
※2: Dimension T shows overhang length of the EZB Bar when attached to sleeve. Dimensions in ( ) show overhand length of EZ Bar PLUS.
※3: HP type bars are not adjustable.
• Choose sleeves (Ød1) to meet with ØD dimension of bar.

Spare Parts (for EZH-CT Sleeves)

Part Number		Spare Parts: Clamp Screw	Wrench	Clamp Screw	Wrench	Adjustment Pin
EZH	017...CT-..	HS3x4P (for adjustment pin,coolant leak prevention and bar)	LW-1.5 1N • m Tightening Torque	-	-	LCP025097
	020...CT-..					
	025...CT-..					
	030...CT-..					
EZH	035...CT-..	HS3x4P (for adjustment pin, coolant leak prevention and bar)	LW-1.5 1N • m Tightening Torque	HS4x4P (for bar)	LW-2 2N • m Tightening Torque	LCP025097
	040...CT-..					
	050...CT-..					
	060...CT-..					
	070...CT-..					



1) If shank dia. is Ø2.5mm or less, use 6 clamp screws (HS3x4P), distributed as follows:
For adjustment pin.....2 pcs
For coolant leak prevention.....2 pcs
For bar.....2 pcs

2) If shank dia. is Ø3.0mm, use 9 clamp screws (HS3x4P), distributed as follows:
For adjustment pin.....2 pcs
For coolant leak prevention.....4 pcs
For bar.....3 pcs

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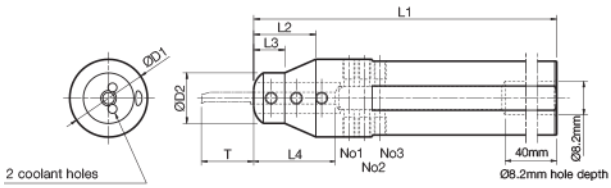
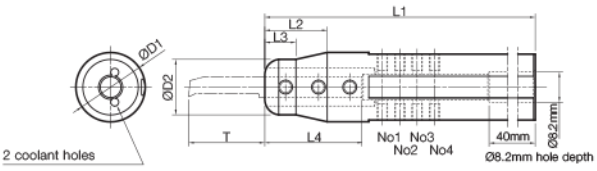
NEW ITEMS!

EZH-CT (Applicable Sleeve) NEW

With coolant hole and EZ adjust structure





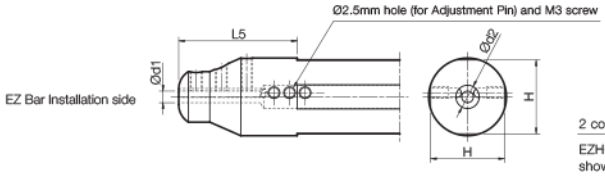
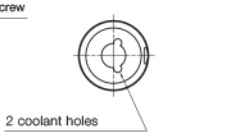


Fig.2



EZH07..CT coolant hole shape is as shown on the figure above.

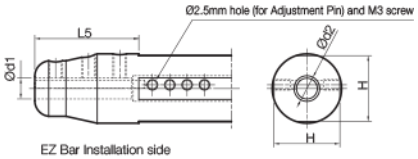


Fig.3

Part Number		Stock	Dimensions (mm)										T (mm) Overhang Length of Bar ※2				Drawing	Applicable EZ Bar or EZ Bar PLUS ➡ F14~ ➡ F16 ➡ F18, ➡ F19, ➡ F28 ➡ G34, ➡ G45 ➡ J10
			Ød1	ØD1	ØD2	Ød2	H	L1	L2	L3	※L4	L5	Adjustment Pin Setting No1	No2	No3	No4		
EZH	03019CT-120	●	3.0	0.75"	13	6.0	18.0	120	16	8	21	30.5	13.5	9.5	5.5	-	Fig.2	EZBR...030... EZVBR035030-... EZGR...030-... EZTR...030-... ※2 HPB型0303-...
	03020CT-120	○	3.0	20	13	6.0	19.0	120										
	03022CT-135	○	3.0	22	13	6.0	21.0	135				41.5						
	03025.0CT-135	○	3.0	25	13	6.0	24.0	135				30.5						
	03025.4CT-120	●	3.0	1.00"	13	6.0	24.4	120										
EZH	03519CT-120	●	3.5	0.75"	13	6.0	18.0	120	16	8	21	31.1	15.5	11.5	7.5	-	Fig.2	EZBR...035... EZTR...035-...
	03520CT-120	○	3.5	20	13	6.0	19.0	120										
	03522CT-135	○	3.5	22	13	6.0	21.0	135				41.5						
	03525.0CT-135	○	3.5	25	13	6.0	24.0	135				31.1						
	03525.4CT-120	●	3.5	1.00"	13	6.0	24.4	120										
EZH	04019CT-120	●	4.0	0.75"	13	6.0	18.0	120	16	8	22	30.5	20.5	16.5	12.5	8.5	Fig.3	EZBR...040... EZVBR045040-... EZGR...040-... EZFGR...040-... EZTR...040-... ※2 HP...04-...
	04020CT-120	○	4.0	20	13	6.0	19.0	120										
	04022CT-135	○	4.0	22	13	6.0	21.0	135				41.5						
	04025.0CT-135	○	4.0	25	13	6.0	24.0	135				30.5						
	04025.4CT-120	●	4.0	1.00"	13	6.0	24.4	120										
EZH	05019CT-120	●	5.0	0.75"	16	6.0	18.0	120	18	9	22	30.0	25.5	20.5	15.5	10.5	Fig.3	EZBR...050... EZVBR055050-... EZGR...050-... EZFGR...050-... EZTR...050-... ※2 HP...05-...
	05020CT-120	○	5.0	20	16	6.0	19.0	120										
	05022CT-135	○	5.0	22	16	6.0	21.0	135				44.0						
	05025.0CT-135	○	5.0	25	16	6.0	24.0	135				30.0						
	05025.4CT-120	●	5.0	1.00"	16	6.0	24.4	120										
EZH	06019CT-120	●	6.0	0.75"	16	7.4	18.0	120	18	9	22	30.0	30.5	25.5	20.5	15.5	Fig.3	EZBR...060... EZVBR065060-... EZGR...060-... EZTR...060-..._060X-...-070EZ ※2 HP...0606-...
	06020CT-120	○	6.0	20	16	7.4	19.0	120										
	06022CT-135	○	6.0	22	16	7.4	21.0	135				41.5						
	06025.0CT-135	○	6.0	25	16	7.4	24.0	135				30.0						
	06025.4CT-120	●	6.0	1.00"	16	7.4	24.4	120										
EZH	07019CT-120	●	7.0	0.75"	16	7.4	18.0	120	18	9	22	30.0	35.5	30.5	25.5	20.5	Fig.3	EZBR...070... EZGR...070-... EZFGR...070-... EZTR...070-... ※2 HP...07-...
	07020CT-120	○	7.0	20	16	7.4	19.0	120										
	07022CT-135	○	7.0	22	16	7.4	21.0	135				44.0						
	07025.0CT-135	○	7.0	25	16	7.4	24.0	135				30.0						
	07025.4CT-120	●	7.0	1.00"	16	7.4	24.4	120										

※1: L4 shows Ød1 length
※2: Dimension T shows overhang length of the EZB Bar when attached to sleeve. Dimensions in ( ) show overhand length of EZ Bar PLUS.
※3: HP type bars are not adjustable.
• Choose sleeves (Ød1) to meet with ØD dimension of bar.

EZ Bar Mounting Procedure ➡ F23

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

EZH-HP (Applicable Sleeve)

Adjustable

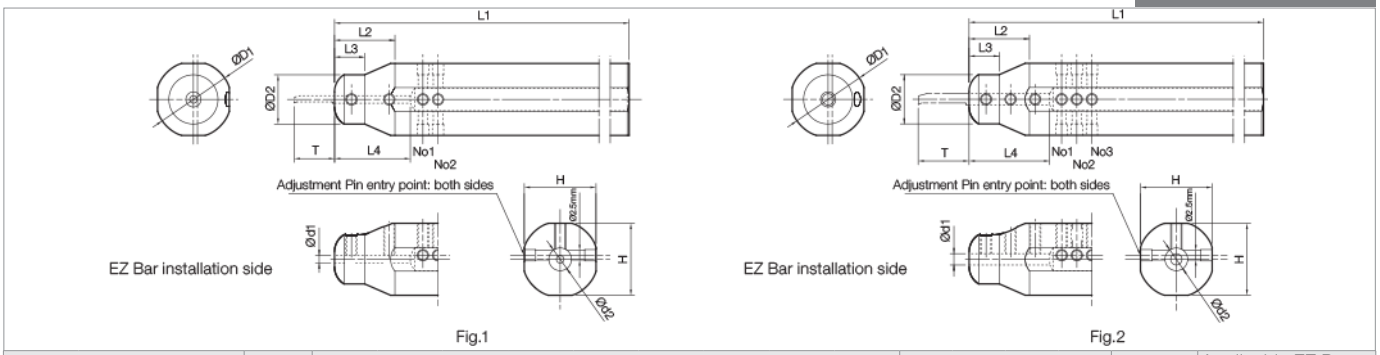


Fig.1 Fig.2

Part Number	Stock	Dimensions (mm)								T (mm) Overhang Length of Bar ※2				Drawing	Applicable EZ Bar or EZ Bar PLUS ➡ F14~ ➡ F16 ➡ F19, ➡ F28 ➡ G34, ➡ G45 ➡ J10
										Adjustment Pin Setting					
		Ød1	ØD1	ØD2	Ød2	H	L1	L2	L3	※L4	No1	No2	No3	No4	
EZH 01716HP-100	○	1.7	16	13	6	15.0	100	16	8	16	7.5	3.5	-	-	Fig.1	EZBR…017…
01719HP-120	●	1.7	0.75"	13	6	18.0	120									
01720HP-120	○	1.7	20	13	6	19.0	120									
01722HP-135	○	1.7	22	13	6	21.0	135									
01725.0HP-135	○	1.7	25	13	6	24.0	135									
01725.4HP-120	●	1.7	1.00"	13	6	24.4	120									
EZH 02016HP-100	○	2.0	16	13	6	15.0	100	16	8	20	8.5	4.5	-	-	Fig.1	EZBR…020… ※2 HPB®0202-…
02019HP-120	●	2.0	0.75"	13	6	18.0	120									
02020HP-120	○	2.0	20	13	6	19.0	120									
02022HP-135	○	2.0	22	13	6	21.0	135									
02025.0HP-135	○	2.0	25	13	6	24.0	135									
02025.4HP-120	●	2.0	1.00"	13	6	24.4	120									
EZH 02516HP-100	○	2.5	16	13	6	15.0	100	16	8	20	11.0	7.0	-	-	Fig.1	EZBR…025… EZTR…025-…
02519HP-120	●	2.5	0.75"	13	6	18.0	120									
02520HP-120	○	2.5	20	13	6	19.0	120									
02522HP-135	○	2.5	22	13	6	21.0	135									
02525.0HP-135	○	2.5	25	13	6	24.0	135									
02525.4HP-120	●	2.5	1.00"	13	6	24.4	120									
EZH 03016HP-100	○	3.0	16	13	6	15.0	100	16	8	21	13.5	9.5	5.5	-	Fig.2	EZBR…030… EZVBR035030-… EZGR…030-… EZTR…030-… ※2 HPB®0303-…
03019HP-120	●	3.0	0.75"	13	6	18.0	120									
03020HP-120	○	3.0	20	13	6	19.0	120									
03022HP-135	○	3.0	22	13	6	21.0	135									
03025.0HP-135	○	3.0	25	13	6	24.0	135									
03025.4HP-120	●	3.0	1.00"	13	6	24.4	120									
EZH 03516HP-100	○	3.5	16	13	6	15.0	100	16	8	22	15.5	11.5	7.5	-	Fig.2	EZBR…035… EZTR…035…
03519HP-120	●	3.5	0.75"	13	6	18.0	120									
03520HP-120	○	3.5	20	13	6	19.0	120									
03522HP-135	○	3.5	22	13	6	21.0	135									
03525.0HP-135	○	3.5	25	13	6	24.0	135									
03525.4HP-120	●	3.5	1.00"	13	6	24.4	120									
EZH 04016HP-100	○	4.0	16	13	6	15	100	16	8	24	20.5	16.5	12.5	8.5	Fig.4 (F23)	EZBR…040… EZVBR045040-… EZGR…040-… EZFGR…040-… EZTR…040-… ※2 HPB®0303-…
04019HP-120	●	4.0	19.05	13	6	18	120									
04020HP-120	○	4.0	20	13	6	19	120									
04022HP-135	○	4.0	22	13	6	21	135									
04025.0HP-135	○	4.0	25	13	6	24	135									
04025.4HP-120	●	4.0	25.4	13	6	24.4	120									

※1: L4 shows Ød1 length
※2: Dimension T shows overhang length of the EZB Bar when attached to sleeve. Dimensions in ( ) show overhand length of EZ Bar PLUS.
※3: HP type bars are not adjustable.
• Choose sleeves (Ød1) to meet with ØD dimension of bar.

Spare Parts (for EZH-HP Sleeves)

Part Number	Spare Parts					Applicable EZB Bar	
	Clamp Screw	Wrench	Clamp Screw	Wrench	Adjustment Pin		
							
EZH 017...HP-..	HS3x4P (for adjustment pin and bar)	LW-1.5 1N • m Tightening Torque	-	-	LCP025140	-	EZBR020017…
020...HP-..						EZBR020020HP…	EZBR025020…
025...HP-..						EZBR025025HP…	EZBR030025…
030...HP-..						EZBR030030HP…	EZBR…030…
EZH 035...HP-..	HS3x4P (only for adjustment pin)	LW-1.5 1N • m Tightening Torque	HS4x4P (for bar)	LW-2 2N • m Tightening Torque	LCP025140	EZBR035035HP…	EZBR040035…
040...HP-..						EZBR040040HP…	EZBR…040…
050...HP-..						EZBR050050HP…	EZBR…050…
060...HP-..						EZBR060060HP…	EZBR…060…
070...HP-..						-	EZBR…070…

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U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

EZH-HP (Applicable Sleeve)

Adjustable

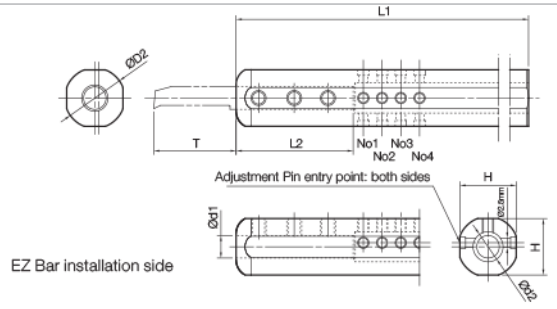

Fig.3

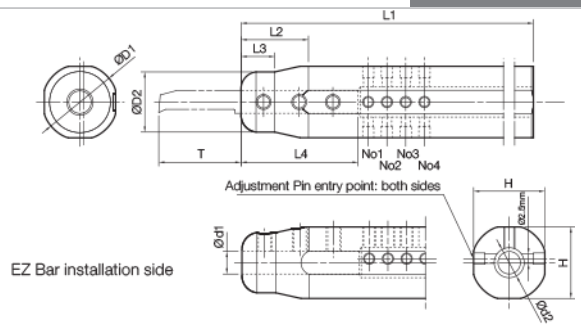

Fig.4

Part Number		Stock	Dimensions (mm)									T (mm) Overhang Length of Bar ※2				Drawing	Applicable EZ Bar or EZ Bar PLUS ➡ F14~ ➡ F16 ➡ F18, ➡ F19, ➡ F28 ➡ G35, ➡ G45 ➡ J10
			Ød1	ØD1	ØD2	Ød2	H	L1	L2	L3	※L4	Adjustment Pin Setting No1	No2	No3	No4		
EZH	04516HP-100	○	4.5	16	16	6	15.0	100	4	-	25.3	23.0 (14)	18.5 (9.5)	14.0 (-)	9.5 (-)	Fig.3	_045X-…050EZ
	04519HP-120	●	4.5	0.75"	16	6	18.0	120	18	9						Fig.4	
	04520HP-120	○	4.5	20	16	6	19.0	120									
	04522HP-135	○	4.5	22	16	6	21.0	135									
	04525.0HP-135	○	4.5	25	16	6	24.0	135									
	04525.4HP-120	●	4.5	1.00"	16	6	24.4	120									
EZH	05016HP-100	○	5.0	16	16	6	15.0	100	4	-	29.0	25.5	20.5	15.5	10.5	Fig.3	EZBR…050… EZVBR055050-… EZGR…050-… EZFGR…050-… EZTR…050… ※3 HP…05-…
	05019HP-120	●	5.0	0.75"	16	6	18.0	120	18	9						Fig.4	
	05020HP-120	○	5.0	20	16	6	19.0	120									
	05022HP-135	○	5.0	22	16	6	21.0	135									
	05025.0HP-135	○	5.0	25	16	6	24.0	135									
	05025.4HP-120	●	5.0	1.00"	16	6	24.4	120									
EZH	06016HP-100	○	6.0	16	16	8	15.0	100	4	-	31.0	30.5	25.5	20.5	15.5	Fig.3	EZBR…060… EZVBR065060-… EZGR…060-… EZTR…060-… _060X-…-070EZ ※3 HP…0606-…
	06019HP-120	●	6.0	0.75"	16	8	18.0	120	18	9						Fig.4	
	06020HP-120	○	6.0	20	16	8	19.0	120									
	06022HP-135	○	6.0	22	16	8	21.0	135									
	06025.0HP-135	○	6.0	25	16	8	24.0	135									
	06025.4HP-120	●	6.0	1.00"	16	8	24.4	120									
EZH	07016HP-100	○	7.0	16	16	8	15.0	100	4	-	33.0	35.5	30.5	25.5		Fig.3	EZBR…070… EZGR…070-… EZFGR…070-… EZTR…070-… ※3 HP…07-…
	07019HP-120	●	7.0	0.75"	16	8	18.0	120	18	9						Fig.4	
	07020HP-120	○	7.0	20	16	8	19.0	120									
	07022HP-135	○	7.0	22	16	8	21.0	135									
	07025.0HP-135	○	7.0	25	16	8	24.0	135									
	07025.4HP-120	●	7.0	1.00"	16	8	24.4	120									

※1: L4 shows Ød1 length
※2: Dimension T shows overhang length of the EZB Bar when attached to sleeve. Dimensions in ( ) show overhand length of EZ Bar PLUS.
※3: HP type bars are not adjustable.
• Choose sleeves (Ød1) to meet with ØD dimension of bar.

EZ Bar Identification System

EZ H 017 16 HP - 100

EZ Symbol of Bar	Application	Shank Dia. of EZB Bar	Sleeve Shank Dia.	Symbol of Precision		Overall Length of Sleeve
	H-Sleeve	017 : 1.7mm	16 : 16.00mm	**CT**: High Precision with Coolant Hole		100 : 100mm
		025 : 2.5mm	25.4 : 25.40mm	**HP**: Precision	**ST**: Standard	120 : 120mm

EZ Bar Mounting Procedure

● How to use adjustment pin (Fig.1)

① Put the adjustment pin into the hole.
② Push it into the sleeve, using the wrench “LW-1.5.”
③ Tighten the clamp screw “HS3x4p” with wrench “LW-1.5” to fix the adjustment screw.

●How to secure bar (Fig.2)

① With the chip pocket upward, set the bar in sleeve.
Press the slant of the end of the bar against the adjustment pin.
Make sure that the bar does not rotate. (Fig.3)
② Tighten the clamp screw with wrench “LW-2”and secure the bar.
(Use “LW-1.5” if shank dia. is 3mm or less.)

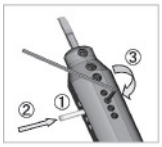

Fig. 1:
How to use adjustment pin

Fig. 2:
How to secure bar

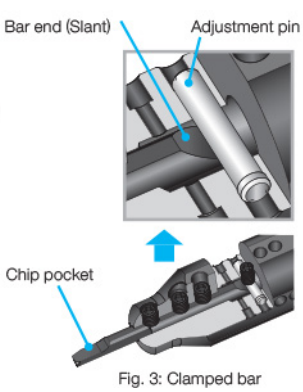

Fig. 3: Clamped bar

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

EZH-ST (Applicable Sleeve)

NOT Adjustable

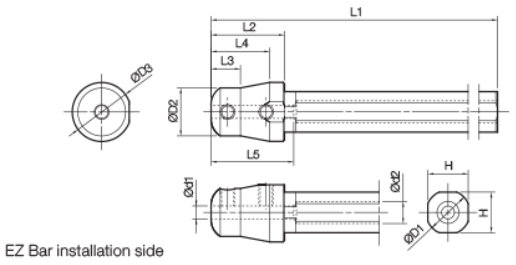

Fig.1

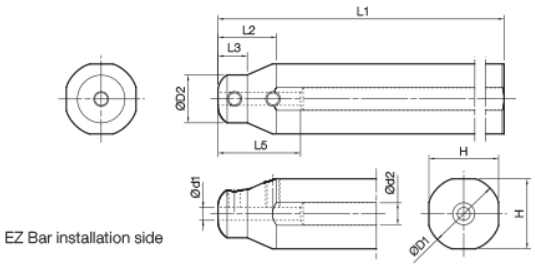

Fig.2

Part Number		Stock	Dimensions (mm)											Drawing	Applicable EZ Bar or EZ Bar PLUS ➔ F14~ ➔ F16 ➔ F19, ➔ F28 ➔ G34, ➔ G45 ➔ J10
			Ød1	ØD1	ØD2	ØD3	Ød2	H	L1	L2	L3	L4	※L5		
EZH	01712ST-80	○	1.7	12	13	16	6	11.0	80	20	8	16	16	Fig.1	EZBR…017…
	01716ST-100	○	1.7	16	13	-	6	15.0	100	16		-		Fig.2	
	01719ST-120	○	1.7	0.75"	13	-	6	18.0	120						
	01720ST-120	○	1.7	20	13	-	6	19.0	120						
	01722ST-135	○	1.7	22	13	-	6	21.0	135						
	01725.0ST-135	○	1.7	25	13	-	6	24.0	135						
	01725.4ST-120	○	1.7	1.00"	13	-	6	24.4	120						
EZH	02012ST-80	○	2.0	12	13	16	6	11.0	80	20	8	16	20	Fig.1	EZBR…020… HPB✎0202-…
	02016ST-100	○	2.0	16	13	-	6	15.0	100	16		-		Fig.2	
	02019ST-120	○	2.0	0.75"	13	-	6	18.0	120						
	02020ST-120	○	2.0	20	13	-	6	19.0	120						
	02022ST-135	○	2.0	22	13	-	6	21.0	135						
	02025.0ST-135	○	2.0	25	13	-	6	24.0	135						
	02025.4ST-120	○	2.0	1.00"	13	-	6	24.4	120						
EZH	02512ST-80	○	2.5	12	13	16	6	11.0	80	20	8	16	20	Fig.1	EZBR…025… EZTR…025-…
	02516ST-100	○	2.5	16	13	-	6	15.0	100	16		-		Fig.2	
	02519ST-120	○	2.5	0.75"	13	-	6	18.0	120						
	02520ST-120	○	2.5	20	13	-	6	19.0	120						
	02522ST-135	○	2.5	22	13	-	6	21.0	135						
	02525.0ST-135	○	2.5	25	13	-	6	24.0	135						
	02525.4ST-120	○	2.5	1.00"	13	-	6	24.4	120						
EZH	03012ST-80	○	3.0	12	13	16	6	11.0	80	20	8	16	21	Fig.1	EZBR…030… EZVBR035030-... EZGR…030-… EZTR…030-… HPB✎0303-...
	03016ST-100	○	3.0	16	13	-	6	15.0	100	16		-		Fig.2	
	03019ST-120	○	3.0	0.75"	13	-	6	18.0	120						
	03020ST-120	○	3.0	20	13	-	6	19.0	120						
	03022ST-135	○	3.0	22	13	-	6	21.0	135						
	03025.0ST-135	○	3.0	25	13	-	6	24.0	135						
	03025.4ST-120	○	3.0	1.00"	13	-	6	24.4	120						
EZH	03512ST-80	○	3.5	12	13	16	6	11.0	80	20	8	16	22	Fig.1	EZBR…035… EZTR…035-…
	03516ST-100	○	3.5	16	13	-	6	15.0	100	16		-		Fig.2	
	03519ST-120	○	3.5	0.75"	13	-	6	18.0	120						
	03520ST-120	○	3.5	20	13	-	6	19.0	120						
	03522ST-135	○	3.5	22	13	-	6	21.0	135						
	03525.0ST-135	○	3.5	25	13	-	6	24.0	135						
	03525.4ST-120	○	3.5	1.00"	13	-	6	24.4	120						
EZH	04012ST-80	○	4.0	12	13	16	6	11.0	80	20	8	16	24	Fig.1	EZBR…040… EZVBR045040-... EZGR…040-… EZFGR...040-... EZTR…040-… HP...04-...
	04016ST-100	○	4.0	16	13	-	6	15.0	100	16		-		Fig.2	
	04019ST-120	○	4.0	0.75"	13	-	6	18.0	120						
	04020ST-120	○	4.0	20	13	-	6	19.0	120						
	04022ST-135	○	4.0	22	13	-	6	21.0	135						
	04025.0ST-135	○	4.0	25	13	-	6	24.0	135						
	04025.4ST-120	○	4.0	1.00"	13	-	6	24.4	120						

※:L5 shows Ød1 length

- Choose sleeves (Ød1) to meet with ØD dimension of bar.
- Adjustment pin cannot be installed in EZH-ST sleeves. To adjust overhang of EZB insert, please use EZH-CT or EZH-HP sleeves.

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U.S. Stock Standard : ●
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EZH-ST (Applicable Sleeve)

NOT Adjustable

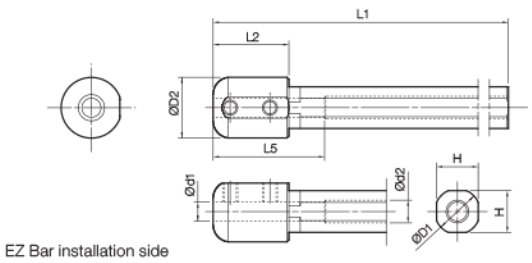

Fig.3

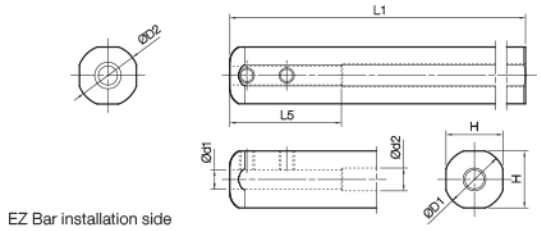

Fig.4

Part Number		Stock	Dimensions (mm)										Drawing	Applicable EZ Bar or EZ Bar PLUS ➡ F14~ ➡ F16 ➡ F18, ➡ F19, ➡ F28 ➡ G34, ➡ G45 ➡ J10
			Ød1	ØD1	ØD2	ØD3	Ød2	H	L1	L2	L3	L4	※L5	
EZH	05012ST-80	○	5	12	16	-	6	11.0	80	20	-	-	29	Fig.3	EZBR…050… EZVBR055050-... EZGR…050-… EZFGR…050-… EZTR…050-… HP...05-...
	05016ST-100	○	5	16	16	-	6	15.0	100	-				Fig.4	
	05019ST-120	○	5	0.75"	16	-	6	18.0	120	18	9			Fig.2 (F24)	
	05020ST-120	○	5	20	16	-	6	19.0	120						
	05022ST-135	○	5	22	16	-	6	21.0	135						
	05025.0ST-135	○	5	25	16	-	6	24.0	135						
	05025.4ST-120	○	5	1.00"	16	-	6	24.4	120						
EZH	06012ST-80	○	6	12	16	-	8	11.0	80	20	-	-	31	Fig.3	EZBR…060… EZVBR...065060-... EZGR…060-… EZTR…060-… _060X-...-070EZ HP...0606-...
	06016ST-100	○	6	16	16	-	8	15.0	100	-				Fig.4	
	06019ST-120	○	6	0.75"	16	-	8	18.0	120	18	9			Fig.2 (F24)	
	06020ST-120	○	6	20	16	-	8	19.0	120						
	06022ST-135	○	6	22	16	-	8	21.0	135						
	06025.0ST-135	○	6	25	16	-	8	24.0	135						
	06025.4ST-120	○	6	1.00"	16	-	8	24.4	120						
EZH	07012ST-80	○	7	12	16	-	8	11.0	80	20	-	-	33	Fig.3	EZBR…070… EZGR…070-… EZFGR…070-… EZTR…070-… HP...07-...
	07016ST-100	○	7	16	16	-	8	15.0	100	-				Fig.4	
	07019ST-120	○	7	0.75"	16	-	8	18.0	120	18	9			Fig.2 (F24)	
	07020ST-120	○	7	20	16	-	8	19.0	120						
	07022ST-135	○	7	22	16	-	8	21.0	135						
	07025.0ST-135	○	7	25	16	-	8	24.0	135						
	07025.4ST-120	○	7	1.00"	16	-	8	24.4	120						

※:L5 shows Ød1 length

- Choose sleeves (Ød1) to meet with ØD dimension of bar.
- Adjustment pin cannot be installed in EZH-ST sleeves. To adjust overhang of EZB insert, please use EZH-CT or EZH-HP sleeves.

Spare Parts (for EZH-ST Sleeves)

Part Number		Spare Parts		Applicable EZ Bar	EZ Bar PLUS	EZ Bar PLUS	2-Edge Tip Bars
		Screw	Wrench	**EZB-HP** Type **EZB-ST** Type **EZB-NB** Type	**EZG** Type **EZFG** Type **EZT** Type	**EZG** Type **EZFG** Type **EZT** Type	**HP** Type
							
EZH	017...ST-..	HS3×4P	LW-1.5 1N • m Tightening Torque	EZBR...017...	-	-	-
	020...ST-..			EZBR...020...	-	-	HPB®0202-...
	025...ST-..			EZBR...025...	EZTR...025-...	-	-
	030...ST-..			EZBR...030...	EZ_R...030-...	-	HPB®0303-...
EZH	035...ST-..	HS4×4P	LW-2 2N • m Tightening Torque	EZBR...035...	EZTR...035-...	-	-
	040...ST-..			EZBR...040...	EZ_R...040-...	-	HP...04-...
	050...ST-..			EZBR...050...	EZ_R...050-...	-	HP...05-...
	060...ST-..			EZBR...060...	EZ_R...060-...	_060X-...-070EZ	HP...0606-...
	070...ST-..			EZBR...070...	EZ_R...070-...	-	HP...07-...

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

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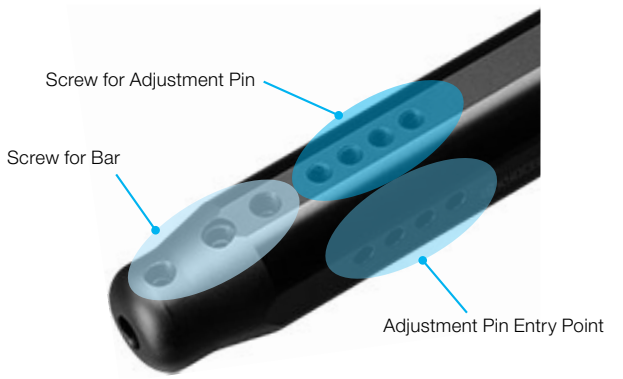
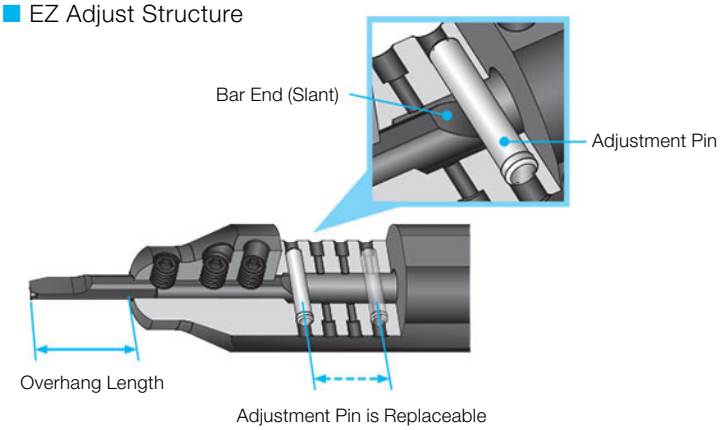
EZ Bar Operability

Easy Adjustability of Bar Reduces Preparation Time!

EZ Bar Spare Parts

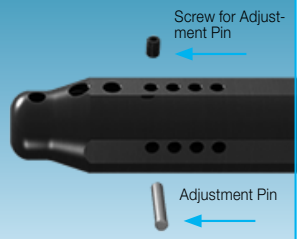


EZ Adjust Structure



How to Attach Adjustment Pin

STEP1



Insert the Adjustment Pin into the Hole.

STEP2

Fit the Adjustment Pin with Screw

How to Clamp Bar

STEP3

Press the Slant End of the Bar with the Adjustment Pin

STEP4

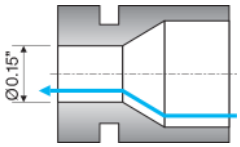
Fit the Bar with Bar Screw

※ Sharp cutting edge of the bars may cause injury. Be careful when handling them.

Case Studies

304SS

Valve Part
- Vc=250sfm
- D.O.C.=0.004"
- f=0.0012ipr
- Wet
- EZBR030030HP-015F (PR1225)
- EZH03025.0HP-135



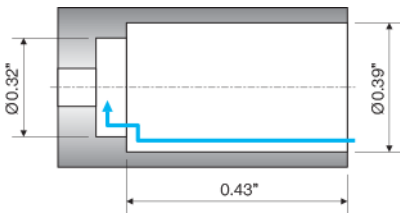
PR1225	3,000 pcs/edge
Competitor F	2,000 pcs/edge

Compared to Competitor F, EZ Bar showed 1.5 times longer tool life with superior stability and accuracy of cutting edge position.

(User Evaluation)

316SS

Connector
- Vc=150~200sfm
- D.O.C.=0.004"
- f=0.0012ipr
- Wet
- EZBR045040ST-008H (PR1225)
- EZH04025.0HP-135



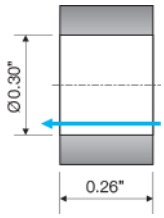
PR1225	2,000 pcs/edge
Competitor G	500 pcs/edge

Compared to Competitor G, EZ Bar showed 4 times longer tool life. Adjustable overhang length of sleeves (EZH-HP) drastically improved operability.

(User Evaluation)

1045

Sleeve (Automotive Part)
- Vc=150sfm
- D.O.C.=0.002"
- f=0.0024ipr
- Wet
- EZBR045040ST-008H (PR1225)
- EZH04016HP-100



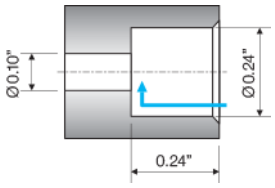
PR1225	2,000 pcs/edge
Competitor H	1,000 pcs/edge

Compared to Competitor H, EZ Bar doubled tool life. The excellent operability of the sleeve reduced the cycle time and improved productivity.

(User Evaluation)

12L14

Collar
- Vc=275sfm
- D.O.C.=0.002"~0.004"
- f=0.001ipr
- Wet
- EZBR040040HP-008H (PR1225)
- EZH04019HP-120



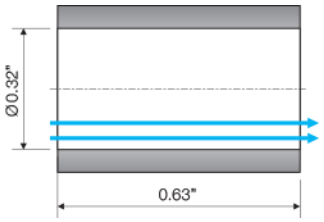
PR1225	10,000 pcs/edge (Stable Machining)
Competitor I	10,000 pcs/edge (Unstable)

Compared to Competitor I, EZ Bar achieved stable machining of 10,000 pcs/edge, minimizing deflection of the diameter. Number of defects is reduced drastically.

(User Evaluation)

4135

Sleeve
- Vc=100sfm
- D.O.C.=0.002" (2 passes)
- f=0.0012ipr
- Wet
- EZBR045040ST-008H (PR1225)
- EZH04019HP-100



PR1225	300 pcs/edge (Further Machining Possible)
Competitor J	150 pcs/edge

PR1225 has double the tool life of that of Competitor J with good chip control.

(User Evaluation)

303SS

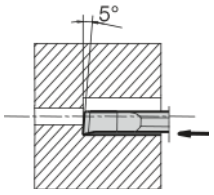
Pipe
- Vc=125sfm
- D.O.C.=0.009"
- f=0.0012ipr
- Wet
- EZBR030030HP-015H (PR1225)
- EZH03016HP-100

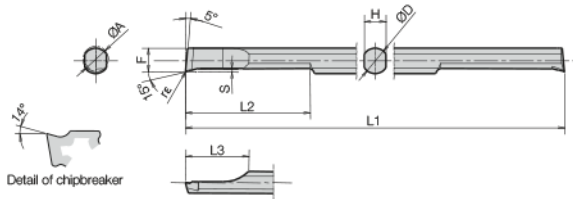
PR1225	1,500 pcs/edge (No Defective Products)
Conventional K	1,500 pcs/edge (Unstable)

Conventional K was unstable in tool life and dimension. EZ Bar had stable machining.

(User Evaluation)

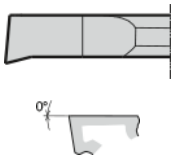
HPB (Boring)



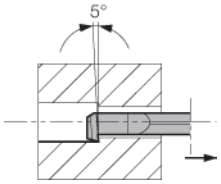


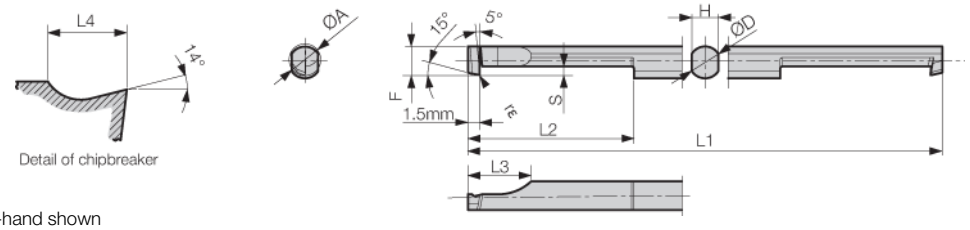
• Right-hand shown

NB Type (Without Chipbreaker)



HPBT (Back Boring)





• Right-hand shown

Micro-Bar Dimensions

Part Number		Min. Bore Dia.	Dimensions (mm)								Insert Grade			
											PVD Coated		Carbide	
		ØA	ØD	H	L1	L2	L3	F	S	rε	PR930		KW10	
											R	L	R	L
HPB R/L	0202-005	2	2	1.70	50	10	5	1.75	0.25			○	○	
	0303-005	3	3	2.50	50	15	7	2.70	0.30		○	○	○	
	0404-005	4	4	3.35	60	20	10	3.65	0.50	+0 -0.02		○	○	
	0505-005	5	5	4.30	70	25	12	4.55	0.50	0.05	○		○	
	0606-005	6	6	5.20	70	25	12	5.50	0.50		○	○	○	
	0707-005	7	7	6.20	80	25	12	6.45	0.50		○	○	○	
HPBR	0202-005NB	2	2	1.70	50	10	5	1.75	0.25		○		○	
	0303-005NB	3	3	2.50	50	15	7	2.70	0.30		○		○	
	0404-005NB	4	4	3.35	60	20	10	3.65	0.50	+0 -0.02	○		○	
	0505-005NB	5	5	4.30	70	25	12	4.55	0.50	0.05	○		○	
	0606-005NB	6	6	5.20	70	25	12	5.50	0.50		○		○	
	0707-005NB	7	7	6.20	80	25	12	6.45	0.50		○		○	
HPBT R/L	0404-005	4	4	3.35	60	21	8	3.65	1.00	+0 -0.02	○	○	○	○
	0505-005	5	5	4.30	70	26	8	4.55	1.30	0.05	○	○	○	○

Applicable Sleeves

Micro Bars		Sleeves ➡ F20~ ➡ F25	
HPB R/L	0202-...	EZH	02...
	0303-...		03...
	0404-...		04...
	0505-...		05...
	0606-...		06...
	0707-...		07...
HPBT R/L	0404-...	EZH	04...
	0505-...		05...

Recommended Cutting Conditions

Workpiece Material	Insert Grade (Vc:sfm)		HPB02 Type		HPB03 Type		HPB04 Type HPBT04 Type		HPB05/06/07 Type HPBT05 Type		Remarks
	PVD Coated	Carbide	Depth of Cut: D.O.C.(in), Feed: f(ipr)								
	PR930	KW10	D.O.C.	f	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel	★ 100~330	-	~0.012	~0.0012	~0.016	~0.0016	~0.018	~0.0028	~0.020	~0.0040	Wet
Stainless Steel	★ 100~270	-	~0.012	~0.0008	~0.016	~0.0012	~0.018	~0.0020	~0.020	~0.0030	
Non-ferrous Material	-	★ 100~330	~0.012	~0.0020	~0.016	~0.0024	~0.018	~0.0040	~0.020	~0.0060	

★ : 1st Recommendation ☆ : 2nd Recommendation

Micro Bars sold in 10 piece boxes.

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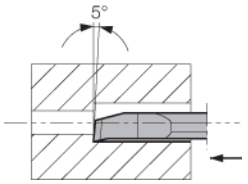
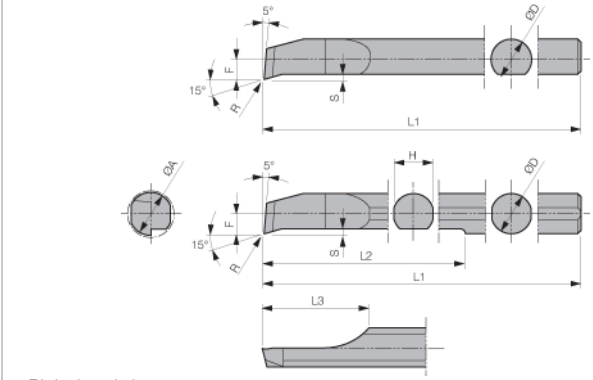
PSB-S (Internal Boring)

NOTE: *PSB-S bars will be phased out and replaced with* ***EZB*** *type bars. See* ***F14***

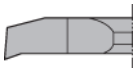
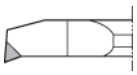




• Right-hand shown

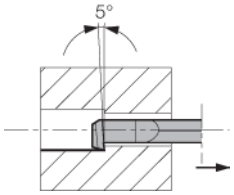
Applicable Sleeves **F20~ F25**

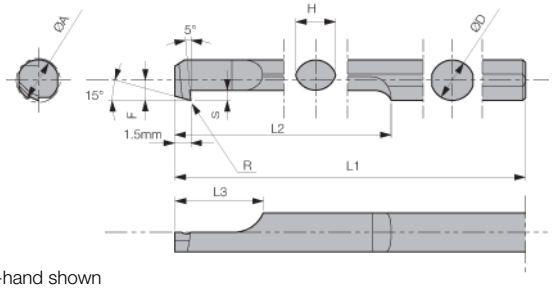
PSBR/L 0202 Type
PSBR/L 0303 Type
Shown on left

NBS Type (Without Chipbreaker)	
	Cermet, Coated Carbide
	CBN, Diamond

PSBT-S (Back Boring)

NOTE: *PSBT-S bars will be phased out and replaced with* ***HPBT*** *type bars. See* ***F28***





• Right-hand shown

Applicable Sleeves **F20~ F25**

Micro-Bar Dimensions

Part Number		Min. Bore Dia.	Dimensions (mm)								Insert Grade						
											PVD Coated		Carbide	CBN		PCD	
		ØA	ØD	H	L1	L2	L3	F	S	rε	PR915	PR930	KW10	KBN510	KBN525	KPD001	KPD010
PSBR/L	0202-50S	2	1.8	-	50	-	5	0.9	0.25	0.05		○	○				
	0303-50S	3	2.8	-	50	-	7	1.4	0.3			○	Ⓡ				
	0404-60S	4	3.8	3.6	60	30	10	1.9	0.5			○	Ⓡ				
	0505-70S	5	4.8	4.4	70	40	12	2.4	0.5			○	Ⓡ				
	0606-70S	6	5.8	5.2	70	45	12	2.9	0.5			○	Ⓡ				
	0707-80S	7	6.8	6.2	80	50	12	3.4	0.5			○	Ⓡ				
PSBR/L	0202-50NBS	2	1.8	-	50	-	5	0.9	0.25	0.05		Ⓡ	Ⓡ				
	0303-50NBS	3	2.8	-	50	-	7	1.4	0.3			Ⓡ	Ⓡ	Ⓡ	Ⓡ		
	0404-60NBS	4	3.8	3.6	60	30	10	1.9	0.5			Ⓡ	Ⓡ	Ⓡ	Ⓡ	Ⓡ	Ⓡ
	0505-70NBS	5	4.8	4.4	70	40	12	2.4	0.5			Ⓡ	Ⓡ	Ⓡ	Ⓡ	Ⓡ	○
	0606-70NBS	6	5.8	5.2	70	45	12	2.9	0.5			Ⓡ	Ⓡ	Ⓡ	Ⓡ	Ⓡ	Ⓡ
	0707-80NBS	7	6.8	6.2	80	50	12	3.4	0.5			Ⓡ	Ⓡ	Ⓡ	Ⓡ	Ⓡ	Ⓡ
PSBTR/L	0415-60S	4	3.8	3.6	60	20	8	1.9	1.0	0.05		○	○				
	0515-70S	5	4.8	4.6	70	20	8	2.4	1.3			○	○				

Recommended Cutting Conditions

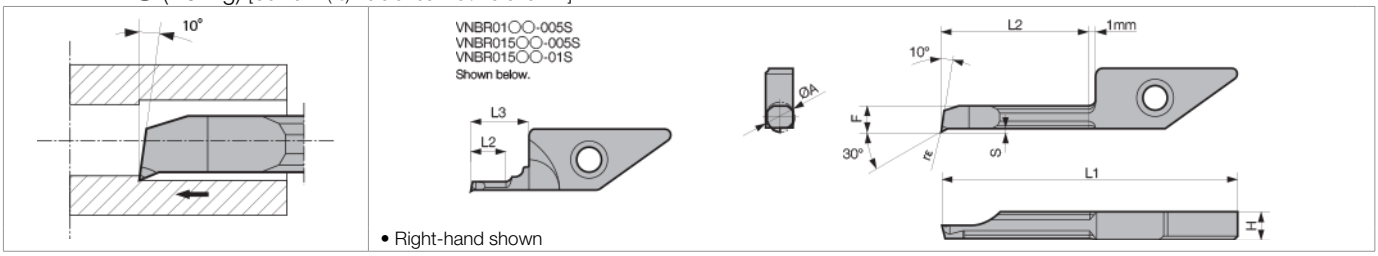
Workpiece Material	Insert Grade (Vc:sfm)						PSBO2		PSB03		PSB04 PSBT04		PSB05 PSB06 PSB07 PSBT05		Remarks
	PVD Coated		Carbide	CBN	PCD		Depth of Cut: D.O.C.(in), Feed: f(ipr)								
	PR915	PR930	KW10	KBN510 KBN525	KPD001	KPD010	D.O.C.	f	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel	-	★ 100~330	-	-	-	-	~0.012	~0.001	~0.016	~0.002	~0.018	~0.003	~0.020	~0.004	Wet
Stainless Steel	-	★ 100~270	-	-	-	-	~0.012	~0.001	~0.016	~0.001	~0.018	~0.002	~0.020	~0.003	
Non-Ferrous Material	-	-	☆ ~330	-	★ ~990	☆ ~990	~0.012	~0.002	~0.016	~0.002	~0.018	~0.004	~0.020	~0.006	
Hardened Material	-	-	-	★ ~330	-	-	-	-	~0.003	~0.001	~0.004	~0.002	~0.006	~0.003	

★ : 1st Recommendation ☆ : 2nd Recommendation

Micro Bars sold in 10 piece boxes.

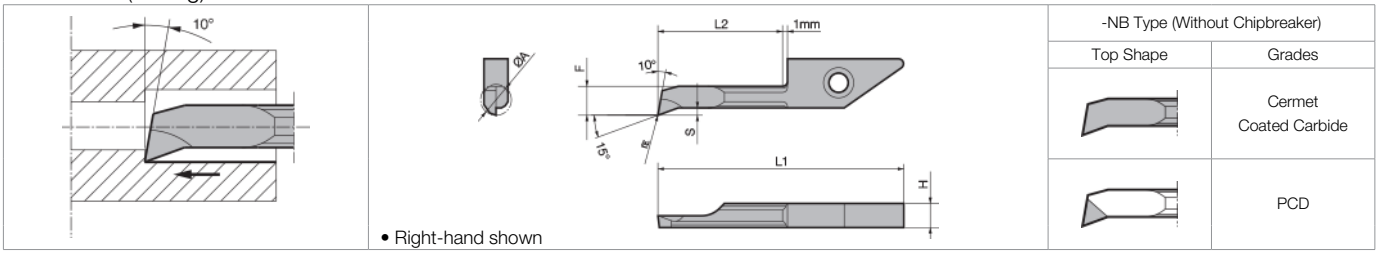
● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

VNB-S (Boring) [Corner-R(rε) Tolerance: +0 / -0.025mm]



• Right-hand shown

VNB (Boring)

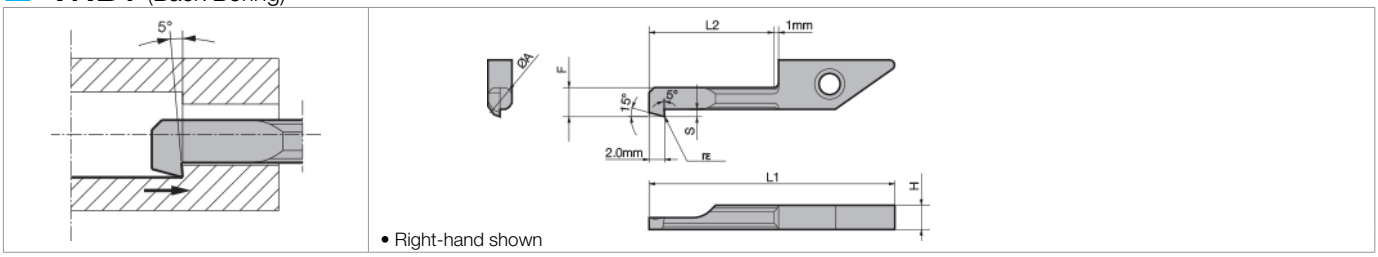


• Right-hand shown

-NB Type (Without Chipbreaker)

Top Shape	Grades
	Cermet Coated Carbide
	PCD

VNBT (Back Boring)



• Right-hand shown

Insert Dimensions (VNB-S)

Part Number		Min.Bore Dia.	Dimensions (mm)							MEGA COAT	PVD Coated Carbide	Carbide	PCD	
		ØA	H	L1	L2	L3	F	S	rε	PR1225	PR930	KW10	KPD001	KPD010
VNBR	0103-005S	1.0	3.9	26.5	3.0	7	0.85	0.20	+0 -0.02 0.05		○			
	0105-005S	1.0	3.9	26.5	5.0	7	0.85	0.20			○			
	01503-005S	1.5	3.9	26.5	3.0	7	1.3	0.20			○			
	01505-005S	1.5	3.9	26.5	5.0	7	1.3	0.20			○			
	0206-005S	2.0	3.9	26.5	6.0	-	1.8	0.25			○			
	025075-005S	2.5	3.9	28.1	7.5	-	2.1	0.40			○			
	0311-005S	3.0	3.9	30.8	11.0	-	2.6	0.40			○			
	03515-005S	3.5	3.9	34.8	15.0	-	2.9	0.50			○			
	0411-005S	4.0	3.9	30.8	11.0	-	3.5	0.50			○			
	0420-005S	4.0	3.9	39.8	20.0	-	3.5	0.50			○			
VNBR	01503-01S	1.5	3.9	26.5	3.0	7	1.3	0.20	+0 -0.03 0.10		○			
	01505-01S	1.5	3.9	26.5	5.0	7	1.3	0.20			○			
	0206-01S	2.0	3.9	26.5	6.0	-	1.8	0.25			○			
	025075-01S	2.5	3.9	28.1	7.5	-	2.1	0.40			○			
	0311-01S	3.0	3.9	30.8	11.0	-	2.6	0.40			○			
	03515-01S	3.5	3.9	34.8	15.0	-	3.0	0.50			○			
	0411-01S	4.0	3.9	30.8	11.0	-	3.5	0.50			○			
	0420-01S	4.0	3.9	39.8	20.0	-	3.5	0.50			○			
VNBR	0411-02S	4.0	3.9	30.8	11.0	-	3.5	0.50	+0 -0.04 0.20		○			
	0420-02S	4.0	3.9	39.8	20.0	-	3.5	0.50			○			

Recommended Cutting Conditions (VNB-S)

Workpiece Material	MEGACOAT	PVD Coated Carbide	Carbide	CBN	PCD		VNB01-S VNB015-S		VNB02-S ~ VNB04-S		Remarks
	PR1225	PR930	KW10	KBN510	KPD001	KPD010	Depth of Cut: D.O.C.(in), Feed: f(ipr)				
							D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel (1045)	★ 100~400	☆ 100~325	-	-	-	-	~0.004	~0.0004	~0.008	~0.0012	Wet
Stainless Steel (304)	★ 100~325	☆ 100~250	-	-	-	-	~0.004	~0.0004	~0.008	~0.0008	

★ : 1st Recommendation ☆ : 2nd Recommendation

Swiss IQ Bars are sold in 5 piece boxes.

(Customer Service) 800.823.7284 - Option 1
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U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

NEW ITEMS!

Insert Dimensions (VNB / VNB-NB / VNBT)

Part Number		Min. Bore Dia.	Dimensions (mm)						MEGACOAT	PVD Coated Carbide	Carbide	PCD	
		ØA	H	L1	L2	F	S	rε	PR1225	PR930	KW10	KPD001	KPD010
VNBR	0206-003	2	3.9	26.5	6	1.8	0.25	0.03		○	○		
	0311-003	3	3.9	30.8	11	2.6	0.40	0.03		●	●		
	0411-003	4	3.9	30.8	11	3.5	0.50	0.03		●	●		
	0420-003	4	3.9	39.8	20	3.5	0.50	0.03		●	●		
	0511-003	5	3.9	30.8	11	4.5	0.70	0.03		●	●		
	0520-003	5	3.9	39.8	20	4.5	0.70	0.03		●	●		
	0620-003	6	3.9	39.8	20	5.3	1.00	0.03		●	●		
	0630-003	6	3.9	49.8	30	5.3	1.00	0.03		○	○		
	0720-003	7	3.9	39.8	20	6.2	1.00	0.03		●	●		
	0730-003	7	3.9	49.8	30	6.2	1.00	0.03		○	○		
VNBR	0206-01	2	3.9	26.5	6	1.8	0.25	0.10		○	○		
	0311-01	3	3.9	30.8	11	2.6	0.40	0.10		○	○		
	0411-01	4	3.9	30.8	11	3.5	0.50	0.10		○	○		
	0420-01	4	3.9	39.8	20	3.5	0.50	0.10		○	○		
	0511-01	5	3.9	30.8	11	4.5	0.70	0.10		○	○		
	0520-01	5	3.9	39.8	20	4.5	0.70	0.10		○	○		
	0620-01	6	3.9	39.8	20	5.3	1.00	0.10		○	○		
	0630-01	6	3.9	49.8	30	5.3	1.00	0.10		○	○		
	0720-01	7	3.9	39.8	20	6.2	1.00	0.10		○	○		
	0730-01	7	3.9	49.8	30	6.2	1.00	0.10		○	○		
VNBR	0206-02	2	3.9	26.5	6	1.8	0.25	0.20		○	○		
	0311-02	3	3.9	30.8	11	2.6	0.40	0.20		○	○		
	0411-02	4	3.9	30.8	11	3.5	0.50	0.20		○	○		
	0420-02	4	3.9	39.8	20	3.5	0.50	0.20		○	○		
	0511-02	5	3.9	30.8	11	4.5	0.70	0.20		○	●		
	0520-02	5	3.9	39.8	20	4.5	0.70	0.20		○	●		
	0620-02	6	3.9	39.8	20	5.3	1.00	0.20	○	○	○		
	0630-02	6	3.9	49.8	30	5.3	1.00	0.20		○	○		
	0720-02	7	3.9	39.8	20	6.2	1.00	0.20		○	○		
	0730-02	7	3.9	49.8	30	6.2	1.00	0.20		○	○		
VNBR	0206-003NB	2	3.9	26.5	6	1.8	0.25	0.03		○	○		
	0311-003NB	3	3.9	30.8	11	2.6	0.40	0.03		○	○		
	0411-003NB	4	3.9	30.8	11	3.5	0.50	0.03		○	○		
	0420-003NB	4	3.9	39.8	20	3.5	0.50	0.03		○	○		
	0511-003NB	5	3.9	30.8	11	4.5	0.70	0.03		○	○		
	0520-003NB	5	3.9	39.8	20	4.5	0.70	0.03		○	○		
	0620-003NB	6	3.9	39.8	20	5.3	1.00	0.03		○	○		
	0630-003NB	6	3.9	49.8	30	5.3	1.00	0.03		○	○		
	0720-003NB	7	3.9	39.8	20	6.2	1.00	0.03		○	○		
	0730-003NB	7	3.9	49.8	30	6.2	1.00	0.03		○	○		
VNBR	0206-02NB	2	3.9	26.5	6	1.8	0.25	0.20			○		
	0311-02NB	3	3.9	30.8	11	2.6	0.40	0.20			○		
	0411-02NB	4	3.9	30.8	11	3.5	0.50	0.20			○	○	○
	0420-02NB	4	3.9	39.8	20	3.5	0.50	0.20			○	○	○
	0511-02NB	5	3.9	30.8	11	4.5	0.70	0.20			○	○	○
	0520-02NB	5	3.9	39.8	20	4.5	0.70	0.20			○	○	○
	0620-02NB	6	3.9	39.8	20	5.3	1.00	0.20			○	○	○
	0630-02NB	6	3.9	49.8	30	5.3	1.00	0.20			○	○	○
	0720-02NB	7	3.9	39.8	20	6.2	1.00	0.20			○	○	○
	0730-02NB	7	3.9	49.8	30	6.2	1.00	0.20			○	○	○
VNBTR	0411-003	4	3.9	30.8	11	3.6	1.00	0.03		○	○		
	0420-003	4	3.9	39.8	20	3.6	1.00	0.03		○	○		
	0511-003	5	3.9	30.8	11	4.6	1.30	0.03		○	○		
	0520-003	5	3.9	39.8	20	4.6	1.30	0.03		○	○		
VNBTR	0411-01	4	3.9	30.8	11	3.6	1.00	0.10		○	○		
	0420-01	4	3.9	39.8	20	3.6	1.00	0.10		○	○		
	0511-01	5	3.9	30.8	11	4.6	1.30	0.10		○	○		
	0520-01	5	3.9	39.8	20	4.6	1.30	0.10		○	○		

Recommended Cutting Conditions (VNB / VNB-NB / VNBT)

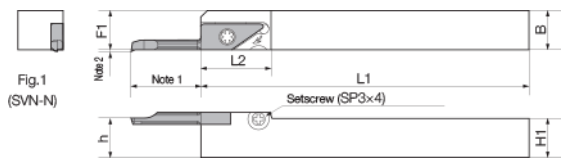
Workpiece Material	MEGACOAT	PVD Coated Carbide	Carbide	CBN	PCD		VNB02		VNB03		VNB04 VNBT04		VNB05 VNB06 VNB07 VNBT05		Remarks
	PR1225	PR930	KW10	KBN510	KPD001	KPD010	Depth of Cut: D.O.C.(in), Feed: f(ipr)								
							D.O.C.	f	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel (1045)	☆ 200~400	★ 100~400	☆ 100~325	-	-	-	~0.012	~0.0012	~0.016	~0.0016	~0.018	~0.0028	~0.020	~0.0039	Wet
Stainless Steel (304)	☆ 150~325	★ 100~325	☆ 100~250	-	-	-	~0.012	~0.0008	~0.016	~0.0012	~0.018	~0.0020	~0.020	~0.0028	
Non-ferrous Metals (Aluminum / Brass)	-	-	-	☆ ~325	★ ~975	☆ ~975	~0.012	~0.0020	~0.016	~0.0024	~0.018	~0.0039	~0.020	~0.0059	

★ : 1st Recommendation ☆ : 2nd Recommendation

Swiss IQ Bars are sold in 5 piece boxes. *PCD Inserts are sold in 1 piece boxes.*

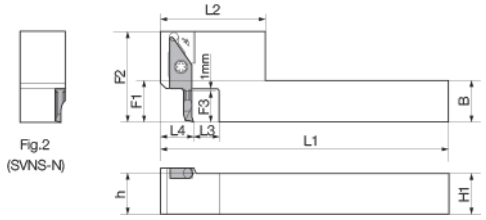
● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

SVN-N (Without Side Stopper)



• Right-hand shown

SVNS-N (Without Side Stopper / Without Clamp Screw)



• Right-hand Insert for Right-hand Toolholder

Toolholder Dimensions

Note 1 & Note 2 : See Insert Dimension Table. (➡ F30~ ➡ F31)

Part Number		Stock	Dimensions (mm)									Shape	Spare Parts			Applicable Inserts
			H1=h	B	L1	L2	L3	L4	F1	F2	F3		Clamp Screw	Wrench	Setscrew	➡ F30~ ➡ F31 ➡ G37 ➡ G47 ➡ J15
SVNR	1010H-12N	○	10	10	100	22	-	-	10	-	-	Fig.1	SB-3080TR	FT-10	SP3×4	VNBR....-... VNBTR....-... VNGR....-.. VNTR....-.. VNFGR....-..
	1212K-12N	○	12	12	125	22	-	-	12	-	-	Fig.1				
	1616K-12N	○	16	16	125	22	-	-	16	-	-	Fig.1				
	2020K-12N	○	20	20	125	22	-	-	20	-	-	Fig.1				
	2525M-12N	○	25	25	150	22	-	-	25	-	-	Fig.1				
SVNSR	1010K-12-06N	○	10	10	125	45	10	12	10	29	6	Fig.2	SB-3080TR	LTW-10S	-	(VNBR..06-...)
	1010K-12-11N	○	10	10	125	45	10	12	10	33	11	Fig.2	SB-3080TR	LTW-10S	-	(VNBR..11-...)※ (VNBTR..11-...)※ (VNGR....-11)※ (VNTR...-11)※
	1212M-12-06N	○	12	12	150	45	10	12	12	29	6	Fig.2	SB-3080TR	LTW-10S	-	(VNBR..06-...)
	1212M-12-11N	○	12	12	150	45	10	12	12	33	11	Fig.2	SB-3080TR	LTW-10S	-	(VNBR..11-...)※ (VNBTR..11-...)※ (VNGR....-11)※ (VNTR...-11)※
	1212M-12-20N	○	12	12	150	45	10	13	12	42	20	Fig.2	SB-3080TR	LTW-10S	-	(VNBR..20-...)※ (VNBTR..20-...)※ (VNGR....-20)※
	1616M-12-06N	○	16	16	150	45	16	12	16	29	6	Fig.2	SB-3080TR	LTW-10S	-	(VNBR..06-...)
	1616M-12-11N	○	16	16	150	45	16	12	16	33	11	Fig.2	SB-3080TR	LTW-10S	-	(VNBR..11-...)※ (VNBTR..11-...)※ (VNGR....-11)※ (VNTR...-11)※
	1616M-12-20N	○	16	16	150	45	16	13	16	42	20	Fig.2	SB-3080TR	LTW-10S	-	(VNBR..20-...)※ (VNBTR..20-...)※ (VNGR....-20)※

※ Every type of insert is attachable for SVNS-N, however in case of setting insert top at the toolholder face level, please use above applicable ( ) insert.
In this case, F3 dimension of toolholder and L2 dimension of insert will correspond.

1) SVN-N / S...SVN-N / S-SVN-SN Toolholders (without side stopper) retain high index accuracy by easy restraint.

2) For high-rigidity clamping, (e.g. when varying load direction of undercutting, internal and external, or face cutting by one tool), changing the SP3x4 screw to a HS3x4 screw (sold separately) enables the toolholder's rigid clamping equivalent to the side stopper holders.

Spare Parts (Optional)

Screw (Side Stopper)	Wrench
	
HS3×4	LW-1.5

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U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

S...SVN-N (Without Side Stopper : Standard)

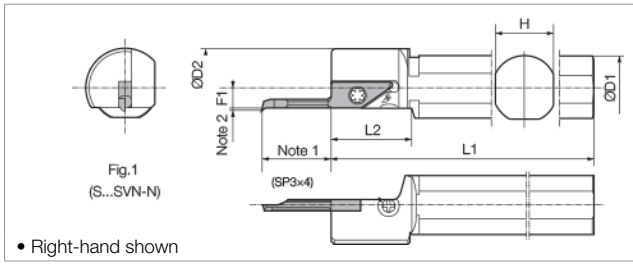


Fig.1
(S...SVN-N)

• Right-hand shown

S...SVN-SN (Without Side Stopper : Straight)

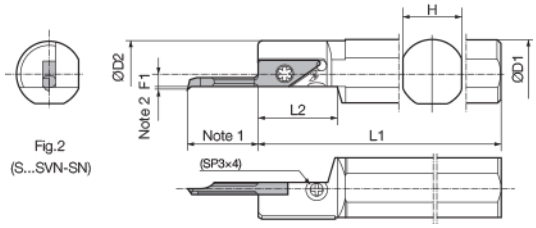


Fig.2
(S...SVN-SN)

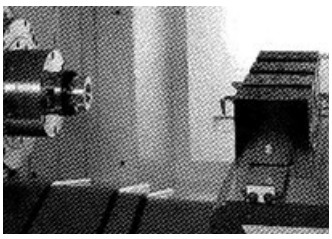
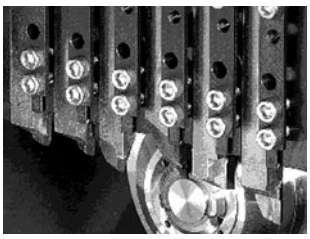
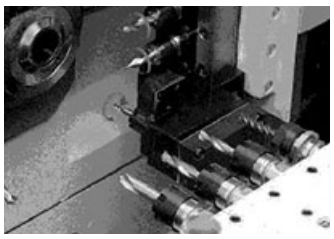
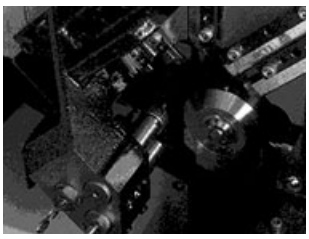
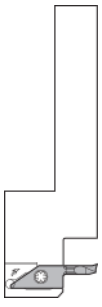
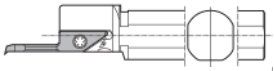
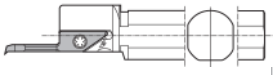
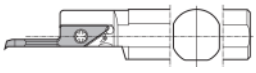
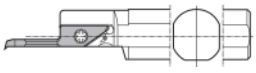
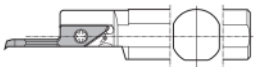
• Right-hand Insert for Right-hand Toolholder

Toolholder Dimensions

Note 1 & Note 2 : See Insert Dimension Table. (F30~ F31)

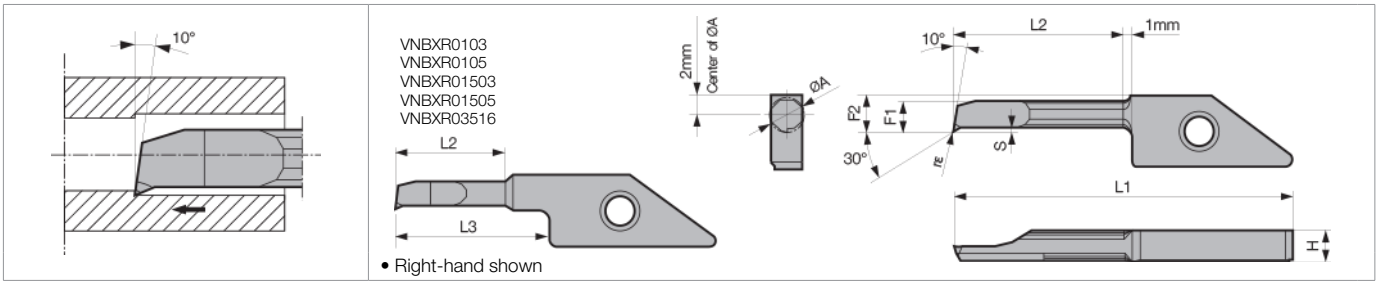
Part Number	Stock	Unit	Dimensions						Shape	Spare Parts			Applicable Inserts
			ØD1	ØD2	H	L1	L2	F1		Clamp Screw	Wrench	Set Screw	
S12F-SVNR12N	○	mm	12	20.0	11	80	23	4	Fig.1	SB-3080TR	FT-10	SP3×4	F30~ F31 G37 G47 J15
S14G-SVNR12N	○	mm	14	20.0	13	90	23	4	Fig.1				
S16H-SVNR12N	○	mm	16	24.0	15	100	23	6	Fig.1				
S19H-SVNR12N	●	inch	0.750	0.945	0.669	3.937	0.945	0.236	Fig.1				
S19N-SVNR12N	●	inch	0.750	0.945	0.669	6.299	0.945	0.236	Fig.1				
S20H-SVNR12N	○	mm	20	24.0	18	100	24	6	Fig.1				
S25H-SVNR12N	●	inch	1.000	1.181	0.905	3.937	0.945	0.236	Fig.1				
S25Q-SVNR12N	●	inch	1.000	1.181	0.905	7.086	0.945	0.236	Fig.1				
S19H-SVNR12SN	●	mm	0.750	0.728	0.669	3.937	0.905	0.157	Fig.2	SB-3080TR	FT-10	SP3×4	
S20H-SVNR12SN	○	mm	20	19.5	18	100	23	4	Fig.2				
S22K-SVNR12SN	○	mm	22	21.5	20	125	23	4	Fig.2				
S25.0G-SVNR12SN	○	mm	25	24.5	23	90	23	4	Fig.2				

Guidance of Each Holder Type Selection

Gang-Type (Horizontal)	Gang-Type	Gang-Type (Front Loading Sleeve Type)	Gang-Type (Back Loading Sleeve Type)
			
Square Shank (Straight)	Square Shank (L-Shape)	Square Shank	Square Shank
		—	—
Round Shank (Standard)		Round Shank (Standard)	Round Shank (Standard)
			—
Round Shank (Straight)		Round Shank (Straight)	Round Shank (Straight)
			

Recommended toolholder may change according to machines used and actual position.
Automatic lathes have various toolpost types other than those above.

VNBX-S (Boring) [Corner-R(rε) Minus Tolerance]



• Right-hand shown

Insert Dimensions (VNBX-S)

Part Number	Min.Bore Dia.	Dimensions (mm)								Insert Grade
										PVD Coated Carbide
	ØA	H	L1	L2	L3	F1	F1	S	rε	PR930
VNBXR 0103-005S	1.0	3.9	26.5	3	7	0.85	2.95	0.20	+0 -0.02 0.05	○
0105-005S	1.0	3.9	26.5	5	7	0.85	2.95	0.20		○
01503-005S	1.5	3.9	26.5	3	7	1.30	2.95	0.20		○
01505-005S	1.5	3.9	26.5	5	7	1.30	2.95	0.20		○
0206-005S	2.0	3.9	26.5	6	-	1.80	3.00	0.25		○
0311-005S	3.0	3.9	30.8	11	-	2.60	3.50	0.40		○
03511-005S	3.5	3.9	30.8	11	-	3.10	3.75	0.45		○
03516-005S	3.5	3.9	39.8	16	21	3.10	3.75	0.45		○
0411-005S	4.0	3.9	30.8	11	-	3.50	4.00	0.50		○
0420-005S	4.0	3.9	39.8	20	-	3.50	4.00	0.50		○
VNBXR 01503-01S	1.5	3.9	26.5	3	7	1.30	2.95	0.20	+0 -0.03 0.1	○
01505-01S	1.5	3.9	26.5	5	7	1.30	2.95	0.20		○
0206-01S	2.0	3.9	26.5	6	-	1.80	3.00	0.25		○
0311-01S	3.0	3.9	30.8	11	-	2.60	3.50	0.40		○
03511-01S	3.5	3.9	30.8	11	-	3.10	3.75	0.45		○
03516-01S	3.5	3.9	39.8	16	21	3.10	3.75	0.45		○
0411-01S	4.0	3.9	30.8	11	-	3.50	4.00	0.50		○
0420-01S	4.0	3.9	39.8	20	-	3.50	4.00	0.50		○
VNBXR 0411-02S	4.0	3.9	30.8	11	-	3.50	4.00	0.50	+0 -0.04 0.2	○
0420-02S	4.0	3.9	39.8	20	-	3.50	4.00	0.50		○

Recommended Cutting Conditions (VNB-S)

Workpiece Material	PVD Coated Carbide			Carbide	CBN	PCD		VNBX01-S VNBX015-S		VNBX02-S ~ VNBX04-S		Remarks
								Depth of Cut: D.O.C.(in), Feed: f(ipr)				
	PR630	PR915	PR930	KW10	KBN510	KPD001	KPD010	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel (1045)	-	-	★ 100~325	-	-	-	-	~0.004	~0.0004	~0.008	~0.0012	Wet
Stainless Steel (304)	-	-	★ 100~250	-	-	-	-	~0.004	~0.0004	~0.008	~0.0008	

★ : 1st Recommendation ☆ : 2nd Recommendation

● VNBX-S Attachment holder for VNBX-S Swiss IQ Bar

1. VNBX-S Attachment holder for VNBX-S Swiss IQ Bar is below (See page ➡ **F35**).
   ① SVNS-XN (Without Side Stopper)
   ② S…SVN-XN (Without Side Stopper)
   ③ S…SVN-SXN (Without Side Stopper)
2. Above holder assures high index accuracy by easy restraint.
3. A holder which attaches setscrews (without side stopper) can be used as binding effect holder as with side stopper holder, once taking off the setscrew, and insert a screw (HS3x4: sold separately) with wrench (LW-1.5: sold separately).

Spare Parts (Optional)

Screw (Side Stopper)	Wrench
	
HS3×4	LW-1.5

Swiss IQ Bars are sold in 5 piece boxes.

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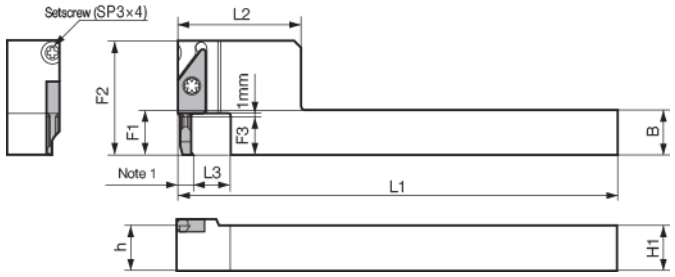
SVNS-XN (Square Shank: L-shape)



• Right-hand shown • Right-hand Insert for Right-hand Toolholder

Note 1 dimension is same size as applicable insert (VNBX) F2 dimension

Toolholder Dimensions

Part Number		Stock	Dimensions (mm)								Spare Parts			Applicable Inserts → F34
			H1=h	B	L1	L2	L3	F1	F2	F3	Clamp Screw	Wrench	Setscrew	
SVNSR	1010K-12-06XN	○	10	10	125	45	10	10	29	6	SB-3080TR	LTW-10S	SP3×4	(VNBXR02..)
	1010K-12-11XN	○	10	10	125	45	10	10	33	11				(VNBXR..11..)
	1212M-12-06XN	○	12	12	150	45	10	12	29	6				(VNBXR02..)
	1212M-12-11XN	○	12	12	150	45	10	12	33	11				(VNBXR..11..)
	1212M-12-20XN	○	12	12	150	45	10	12	42	20				(VNBXR0420..)
	1616M-12-06XN	○	16	16	150	45	16	16	29	6				(VNBXR02..)
	1616M-12-11XN	○	16	16	150	45	16	16	33	11				(VNBXR..11..)
	1616M-12-20XN	○	16	16	150	45	16	16	42	20				(VNBXR0420..)

※ All Swiss IQ Bar Inserts are used with an SVNS-XN Toolholder, however, when setting the cutting edge at the face level of the toolholder as shown in Fig., use the insert shown in ( ).

S...SVN-XN (Round Shank: Standard)

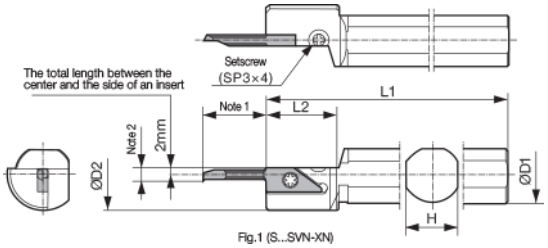


Fig.1 (S...SVN-XN)

• Right-hand shown

S...SVN-SXN (Round Shank: Straight)

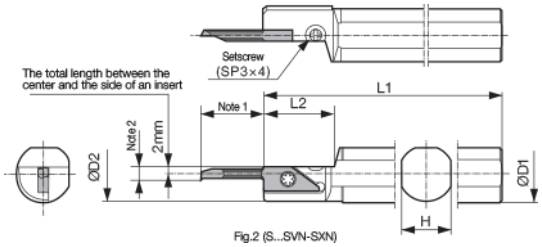


Fig.2 (S...SVN-SXN)

• Right-hand Insert for Right-hand Toolholder

1. Note 1 dimension is same size as applicable insert (VNBX) L2 dimension + 1mm
2. Note 2 dimension is same size as applicable insert (VNBX) F2 dimension

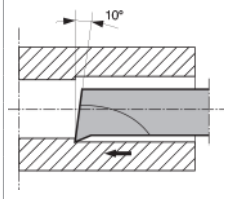
Toolholder Dimensions (Holder center axis core and insert center are coaxial type)

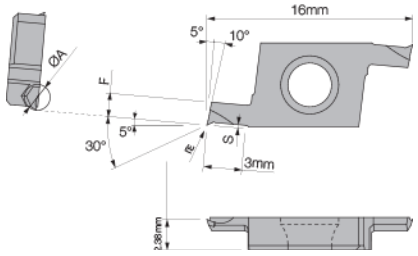
Part Number		Stock	Unit	Dimensions					Spare Parts			Applicable Inserts → F34
				ØD1	ØD2	H	L1	L2	Clamp Screw	Wrench	Setscrew	
S12F	-SVNR12XN	○	mm	12	20.0	11	80	23	SB-3080TR	FT-10	SP3×4	VNBXR...
S14G	-SVNR12XN	○		14	20.0	13	90	23				
S15H	-SVNR12XN	●	inch	0.625	0.945	0.590	3.937	0.905				
S16H	-SVNR12XN	○	mm	16	24.0	15	100	23				
S19H	-SVNR12XN	●	inch	0.750	0.945	0.669	3.937	0.945				
S19N	-SVNR12XN	●		0.750	0.945	0.669	6.299	0.945				
S20H	-SVNR12XN	○	mm	20	24.0	18	100	24				
S25H	-SVNR12XN	●	inch	1.000	1.181	0.905	3.937	0.945				
S25Q	-SVNR12XN	●		1.000	1.181	0.905	7.086	0.945				
S19H	-SVNR12SXN	●	inch	0.750	0.728	0.669	3.397	0.905	SB-3080TR	FT-10		
S20H	-SVNR12SXN	○	mm	20	19.5	18	100	23				
S22K	-SVNR12SXN	○		22	21.5	20	125	23				
S25.0G	-SVNR12SXN	○		25	24.5	23	90	23				

※ All Swiss IQ Bar Inserts are used with an SVNS-XN Toolholder, however, when setting the cutting edge at the face level of the toolholder as shown in Fig., use the insert shown in ( ).

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

TWB (Micro Boring: Horizontal Type) [Corner-R(rε) Tolerance: +0/-0.02mm, +0/-0.03mm]





• Right-hand shown

Part Number		Min.Bore Dia.	Dimensions (mm)			Insert Grade	
						PVD Coated Carbide	Carbide
		ØA	F	S	rε	PR1025	KW10
TWBR	01003-005	1.0	0.85	0.20	+0 -0.02 0.05	○	○
	01503-005	1.5	1.30	0.20		○	○
	02003-005	2.0	1.75	0.25		○	○
	02503-005	2.5	2.10	0.30		○	○
	03003-005	3.0	2.40	0.40		○	○
TWBR	01503-010	1.5	1.30	0.20	+0 -0.03 0.10	○	○
	02003-010	2.0	1.75	0.25		○	○
	02503-010	2.5	2.10	0.30		○	○
	03003-010	3.0	2.30	0.40		○	○

STW (Square Shank for Horizontal Type Inserts)

(For left-hand toolholder for grooving, please see ➡ G48)

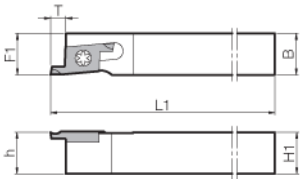


Fig.1

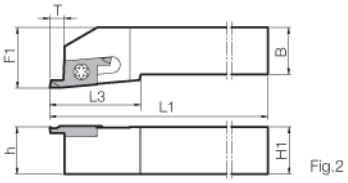


Fig.2

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock	Dimensions (mm)								Shape	Spare Parts		Applicable Inserts
			H1=h	B	L1	L2	L3	F1	F2	T		Clamp Screw	Wrench	
STWR	1212F-15	○	12	12	85	-	-	12	-	3	Fig.1	SB-3080TR	LTW-10S	TWBR○○○○○-○○○
	1212K-15	○	12	12	125	-	-	12	-	3	Fig.1			
	1616K-15	○	16	16	125	-	-	16	-	3	Fig.1			
	2020K-15	○	20	20	125	-	25	25	-	3	Fig.2			
	2525M-15	○	25	25	150	-	25	32	-	3	Fig.2			

S...-STW (Round Shank for Horizontal Type)

(For left-hand toolholder for grooving, please see ➡ G48)

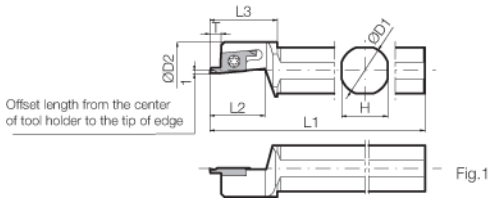


Fig.1

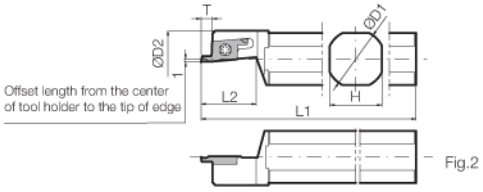


Fig.2

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock	Dimensions (mm)							Shape	Spare Parts		Applicable Inserts
			ØD1	ØD2	H	L1	L2	L3	T		Clamp Screw	Wrench	
S12F-	STWR15	○	12.000	20.0	11	80	18	22	3	Fig.1	SB-3080TR	LTW-10S	TWBR○○○○○-○○○
S14H-	STWR15	○	14.000	20.0	13	100	18	22	3	Fig.1			
S15F-	STWR15	○	15.875	20.0	15	85	18	22	3	Fig.1			
S16F-	STWR15	○	16.000	20.0	15	85	18	22	3	Fig.1			
S19G-	STWR15	○	19.050	18.5	17	90	18	-	3	Fig.2			
S19K-	STWR15	○	19.050	18.5	17	120	18	-	3	Fig.2			
S20G-	STWR15	○	20.000	19.5	18	90	18	-	3	Fig.2			
S20K-	STWR15	○	20.000	19.5	18	120	18	-	3	Fig.2			
S22K-	STWR15	○	22.000	21.5	20	125	22	-	3	Fig.2			
S25.0J-	STWR15	○	25.000	24.5	23	110	22	-	3	Fig.2			
S25K-	STWR15	○	25.400	25.0	23	120	22	-	3	Fig.2			

Twin Bars are sold in 5 piece boxes.

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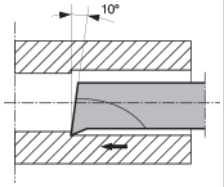
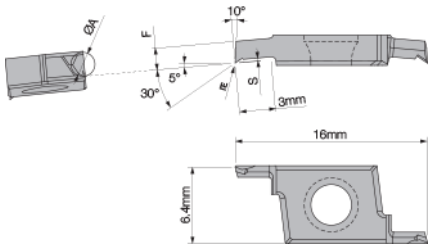
TWBT (Micro Boring: Vertical Type) [Corner-R(rε) Tolerance: +0/-0.02mm, +0/-0.03mm]

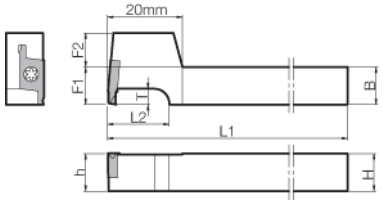




• Right-hand shown

Part Number	Min.Bore Dia.	Dimensions (mm)			Insert Grade	
					PVD Coated Carbide	Carbide
	ØA	F	S	rε	PR1025	KW10
TWBTR 01003-005	1.0	0.85	0.20	+0 -0.02 0.05	○	○
01503-005	1.5	1.30	0.20		○	○
02003-005	2.0	1.75	0.25		○	○
02503-005	2.5	2.10	0.30		○	○
03003-005	3.0	2.30	0.40		○	○
TWBTR 01503-010	1.5	1.30	0.20	+0 -0.03 0.1	○	○
02003-010	2.0	1.75	0.25		○	○
02503-010	2.5	2.10	0.30		○	○
03003-010	3.0	2.30	0.40		○	○

STWS (Square Shank for Vertical Type: L-shape)



• Right-hand shown

Toolholder Dimensions

Part Number	Stock	Dimensions (mm)								Shape	Spare Parts		Applicable Inserts Above & G49
		H1=h	B	L1	L2	L3	F1	F2	T		Clamp Screw	Wrench	
STWSR 1010JX-15T	○	10	10	120	16	-	10	9	3	-	SB-3080TR	LTW-10S	TWBTR○○○○○-○○○ TWFGTR○○○
1212JX-15T	○	12	12	120	16	-	12	7	3	-			
1616JX-15T	○	16	16	120	20	-	16	3	3	-			
STWSR 1010F-15T	○	10	10	85	16	-	10	9	3	-			
1212F-15T	○	12	12	85	16	-	12	7	3	-			

Recommended Cutting Conditions (VNB-S)

Workpiece Material	Recommended Grade (Vc sfm)	TWBR01003 TWBR01503 TWBTR01003 TWBTR01503		TWBR02003 TWBR02503 TWBR03003 TWBTR02003 TWBTR02503 TWBTR03003		Remarks
	PVD Coated Carbide	Depth of Cut: D.O.C.(in), Feed: f(ipr)				
	PR1025	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel (1045)	★ 100~325	~0.004	~0.0004	~0.008	~0.0012	Wet
Stainless Steel (304)	★ 100~250	~0.004	~0.0004	~0.008	~0.0008	

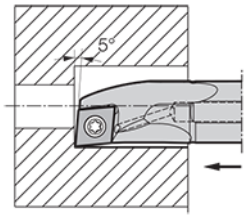
★ : 1st Recommendation ☆ : 2nd Recommendation

Twin Bars are sold in 5 piece boxes.

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

A/S-SCLC-AE Excellent Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~5.5**)



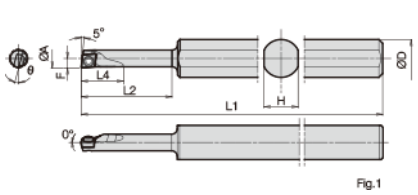


Fig.1

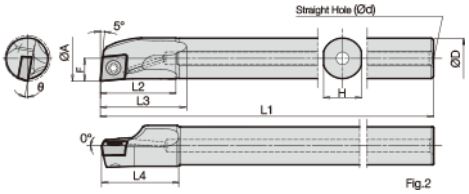


Fig.2

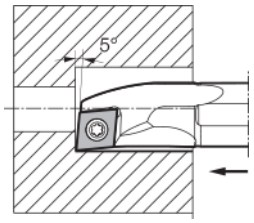
Shank Dia. ØD	Straight Hole Dia. Ød
Ø8	Ø2.5
Ø10	Ø3.0
Ø12	Ø4.0
Ø16	Ø5.0

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SCLC-A Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~4**)



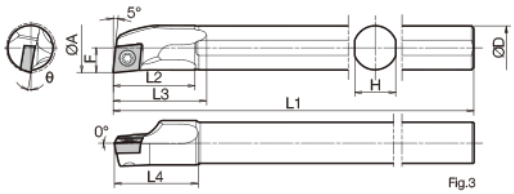


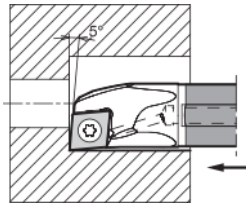
Fig.3

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

C/E-SCLC-A Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~7**)



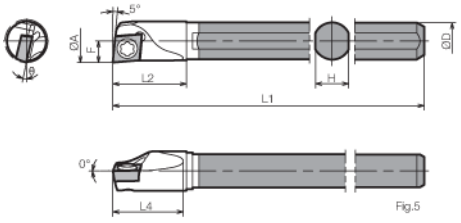


Fig.5

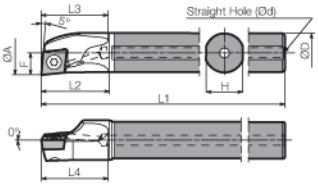


Fig.6

Shank Dia. ØD	Straight Hole Dia. Ød
Ø8	Ø3
Ø10	Ø3
Ø12	Ø4
Ø16	Ø4

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	L3	L4	F	θ	Std. Corner-R	Coolant Hole	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A06M-SCLC□2AE	●	●	inch	0.480	0.375	0.336	6	0.787	0.937	0.803	0.236	12°	1/64	Yes	Fig.2	SB-2545TR	FT-8
	A08M-SCLC□2AE	●	●		0.600	0.500	0.461	6	0.945	1.217	0.969	0.276	10°	1/64	Yes	Fig.2		
	A10R-SCLC□3AE	●	●		0.770	0.625	0.586	8	1.181	1.339	1.205	0.354	10°	1/64	Yes	Fig.2	SB-4065TR	FT-15
	S10H-SCLC□03-05AE	○	○	mm	5	10	9.0	100	24	-	11	2.5	6°	0.2	No	Fig.1	SB-1635TR	FT-6
	S10H-SCLC□03-06AE	○	○		6	10	9.0	100	28	-	13	3.0	15°	0.2	No	Fig.1		
	S10H-SCLC□04-07AE	○	○		7	10	9.0	100	32	-	15	3.5	13°	0.2	No	Fig.1	SB-2035TR	
	S10H-SCLC□04-08AE	○	○		8	10	9.0	100	37	-	15	4.0	13°	0.2	No	Fig.1		
	A08X-SCLC□06-10AE	○	○		10	8	7.0	120	16	20	17	5.0	11°	0.4	Yes	Fig.2	SB-2545TR	FT-8
	A10L-SCLC□06-12AE	○	○		12	10	9.0	140	20	25	21	6.0	14°	0.4	Yes	Fig.2		
	A12M-SCLC□06-14AE	○	○		14	12	11.0	150	24	30	25	7.0	12°	0.4	Yes	Fig.2		
	A16Q-SCLC□09-18AE	○	○		18	16	15.0	180	30	34	31	9.0	10°	0.4	Yes	Fig.2	SB-4065TR	FT-15
Steel	S08X-SCLC□06-10A	○	○	mm	10	8	7.0	120	16	20	17	5.0	10°	0.4	No	Fig.3	SB-2545TR	FT-8
	S10L-SCLC□06-12A	○	○		12	10	9.0	140	20	25	21	6.0	14°	0.4	No	Fig.3		
	S12M-SCLC□06-14A	○	○		14	12	11.0	150	24	30	25	7.0	12°	0.4	No	Fig.3		
	S16Q-SCLC□09-18A	○	○		18	16	15.0	180	30	34	31	9.0	10°	0.4	No	Fig.3	SB-4065TR	FT-15
Carbide	E06N-SCLC□2A	●	●	inch	0.480	0.375	0.336	6.3	0.787	0.764	0.764	0.236	12°	1/64	Yes	Fig.6	SB-2545TR	FT-8
	E06N-SCLC□2A-2/3	●	●		0.480	0.375	0.336	4.2	0.787	0.764	0.764	0.236	12°	1/64	Yes	Fig.6		
	E08Q-SCLC□2A	●	●		0.600	0.500	0.461	7.1	0.906	0.882	0.882	0.276	10°	1/64	Yes	Fig.6		
	E08Q-SCLC□2A-2/3	●	●		0.600	0.5	0.461	4.8	0.906	0.882	0.882	0.276	10°	1/64	Yes	Fig.6		
	E10X-SCLC□3A	●	●		0.770	0.625	0.586	8.7	1.102	1.079	1.079	0.354	10°	1/64	Yes	Fig.6		
	E10X-SCLC□3A-2/3	●	●		0.770	0.625	0.586	5.8	1.102	1.079	1.079	0.354	10°	1/64	Yes	Fig.6		
	C04G-SCLC□03-05A	○	○	mm	5	4	3.8	90	9	-	8	2.5	10°	0.2	No	Fig.5	SB-1635TR	FT-6
	C05H-SCLC□03-06A	●	○		6	5	4.4	100	11	-	11	3.0	15°	0.2	No	Fig.5		
	C06J-SCLC□04-07A	○	○		7	6	5.4	110	12	-	12	3.5	13°	0.2	No	Fig.5	SB-2035TR	
	C07K-SCLC□04-08A	○	○		8	7	6.4	125	13	-	13	4.0	13°	0.2	No	Fig.5		
	E08L-SCLC□06-10A	○	○		10	8	7.0	140	16	15	15	5.0	11°	0.4	Yes	Fig.6	SB-2545TR	FT-8
	E08L-SCLC□06-10A-2/3	○			10	8	7.0	90	16	15	15	5.0	14°	0.4	Yes	Fig.6		
	E10N-SCLC□06-12A	○	○		12	10	9.0	160	20	19	19	6.0	14°	0.4	Yes	Fig.6		
	E10N-SCLC□06-12A-2/3	●			12	10	9.0	105	20	19	19	6.0	12°	0.4	Yes	Fig.6		
	E12Q-SCLC□06-14A	○	○		14	12	11.0	180	23	22	22	7.0	12°	0.4	Yes	Fig.6		
	E12Q-SCLC□06-14A-2/3	○			14	12	11.0	120	23	22	22	7.0	10°	0.4	Yes	Fig.6		
	E16X-SCLC□09-18A	○	○		18	16	15.0	220	28	27	27	9.0	10°	0.4	Yes	Fig.6	SB-4065TR	FT-15
	E16X-SCLC□09-18A-2/3	○			18	16	15.0	145	28	27	27	9.0	10°	0.4	Yes	Fig.6		

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed
Ref. Page	B8	B8	B9	B9	B9	B9, B10	B8, B9	B11	B10	B11, B12
Shape / Toolholder	CF	GF	PP	GK	HQ	Standard	GQ	□-F	□-FSF	(E/F)□-JJ
...SCLC□03-...	CCGT1109..	-	-	-	-	-	-	CCGT1109..	CCET1109..	-
...SCLC□04-...	CCGT1411..	-	-	-	-	-	-	CCGT1411..	CCET1411..	-
...SCLC□2... ...SCLC□06-...	-	CCGT215..	CCMT215..	CCMT215..	CCMT215..	CCGT215..	CCGT215..	-	-	CCGT215..
...SCLC□3... ...SCLC□09-...	-	CCGT325..	CCMT325	CCMT325	CCMT325..	CCGT325.. CCMT325..	CCGT325..	-	-	CCGT325..

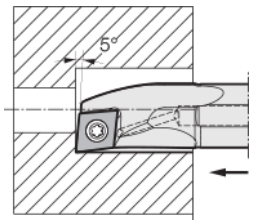
Application	Low Feed / Precision	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. Page	B11	B10	B13	B12	B13	C12	C4
Shape / Toolholder	F□-USF	MQ	Without Chipbreaker	AH	A3	PCD	CBN
...SCLC□03-...	-	-	-	-	-	-	CCMW1109..
...SCLC□04-...	-	-	-	-	-	CCGW1411..	CCMW1411..
...SCLC□2... ...SCLC□06-...	CCET215..	-	CCGW215..	-	-	CCMT215.. CCGW215..	CCMW215..
...SCLC□3... ...SCLC□09-...	CCET325..	CCMT325..	CCGW325..	CCGT325..	CCGT325..	CCMT325.. CCGW325..	CCMW325..

Recommended Cutting Conditions → F71~ → F72

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

A-SCLP-AE Excellent Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~5.5**)



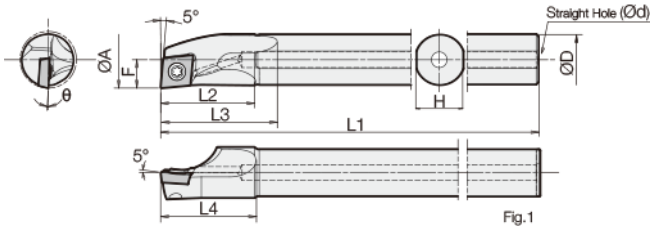


Fig.1

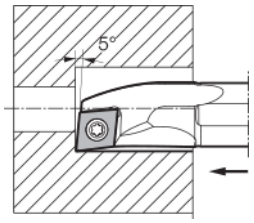
Shank Dia. ØD	Straight Hole Dia. Ød
Ø10	Ø3
Ø12	Ø4
Ø16	Ø5

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SCLP-A Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~4**)



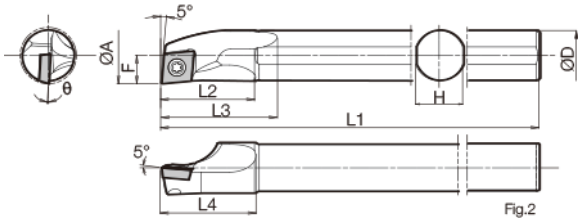


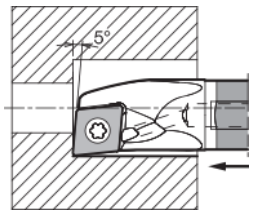
Fig.2

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

E-SCLP-A Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~7**)



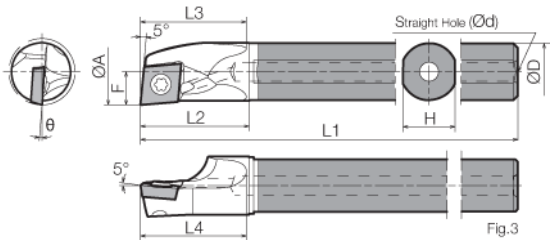


Fig.3

Shank Dia. ØD	Straight Hole Dia. Ød
Ø10	Ø3
Ø12	Ø4
Ø16	Ø4

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	L3	L4	F	θ	Std. Corner-R	Coolant Hole	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A05K-SCLP□2AE	●	●	inch	0.413	0.312	0.273	5	0.630	0.760	0.669	0.197	10.0°	1/64	Yes	Fig.1	SB-2545TR	FT-8
	A06M-SCLP□2.5AE	●	●		0.480	0.375	0.336	6	0.787	0.961	0.791	0.236	5.0°	1/64	Yes	Fig.1	SB-3060TR	FT-10
	A08M-SCLP□2.5AE	●	●		0.580	0.500	0.461	6	0.945	1.201	0.961	0.276	4.0°	1/64	Yes	Fig.1		
	A10R-SCLP□3AE	●	●		0.700	0.625	0.586	8	1.181	1.461	1.189	0.354	3.5°	1/64	Yes	Fig.1	SB-4065TR	FT-15
	A10L-SCLP□08-12AE	○	○	mm	12	10	9	140	20	25	20	6	5.0°	0.4	Yes	Fig.1	SB-3060TR	FT-10
	A12M-SCLP□08-14AE	○	○		14	12	11	150	24	29	24	7	4.0°	0.4	Yes	Fig.1		
	A12M-SCLP□09-16AE	○	○		16	12	11	150	24	31	24	8	4.0°	0.4	Yes	Fig.1	SB-4065TR	FT-15
	A16Q-SCLP□09-18AE	○	○		18	16	15	180	30	37	30	9	3.5°	0.4	Yes	Fig.1		
Steel	S10L-SCLP□08-12A	○	○	mm	12	10	9	140	20	25	20	6	5.0°	0.4	No	Fig.2	SB-3060TR	FT-10
	S12M-SCLP□08-14A	○	○		14	12	11	150	24	29	24	7	4.0°	0.4	No	Fig.2		
	S12M-SCLP□09-16A	○	○		16	12	11	150	24	31	24	8	4.0°	0.4	No	Fig.2	SB-4065TR	FT-15
	S16Q-SCLP□09-18A	○	○		18	16	15	180	30	37	30	9	3.5°	0.4	No	Fig.2		
Carbide	E10N-SCLP□08-12A	○	○	mm	12	10	9	160	20	19	19	6	5.0°	0.4	Yes	Fig.3	SB-3060TR	FT-10
	E10N-SCLP□08-12A-2/3	○			12	10	9	105	20	19	19	6	5.0°	0.4	Yes	Fig.3		
	E10N-SCLP□08-12A-1/2	○			12	10	9	80	20	19	19	6	5.0°	0.4	Yes	Fig.3		
	E12Q-SCLP□08-14A	○	○		14	12	11	180	23	22	22	7	4.0°	0.4	Yes	Fig.3		
	E12Q-SCLP□08-14A-2/3	○			14	12	11	120	23	22	22	7	4.0°	0.4	Yes	Fig.3		
	E12Q-SCLP□08-14A-1/2	○			14	12	11	90	23	22	22	7	4.0°	0.4	Yes	Fig.3		
	E16X-SCLP□09-18A	○	○		18	16	15	220	28	27	27	9	3.5°	0.4	Yes	Fig.3	SB-4065TR	FT-15
	E16X-SCLP□09-18A-2/3	○			18	16	15	145	28	27	27	9	3.5°	0.4	Yes	Fig.3		
	E16X-SCLP□09-18A-1/2	○			18	16	15	110	28	27	27	9	3.5°	0.4	Yes	Fig.3		

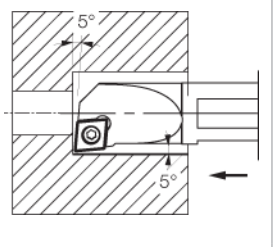
Applicable Inserts

Application	Finishing	Finishing	Finishing-Medium	Medium	Finishing-Medium	Low Carbon Steel/ Finishing	Low Carbon Steel/ Finishing-Medium	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. Page	B13	B13	B13	B13	B14	B14	B14	B14	C13	C4
Shape / Toolholder	PP	GP	HQ	Standard	□-Y	XP	XQ	Without Chipbreaker	PCD	CBN
...SCLP□2AE...	-	-	-	CPGT215..	-	-	-	-	-	-
...SCLP□2.5AE... ...SCLP□08-...	CPMT2515..	CPMT2515..	CPMH2515..	CPMH2515..	CPMH2515..	CPMT2515..	-	CPMB2515..	CPMH2515..	CPGB2515..
...SCLP□3AE... ...SCLP□09-...	CPMT32..	CPMT32..	CPMH32..	CPMH32..	CPMH32..	CPMT32..	CPMT32..	CPMB32..	CPMH32..	CPGB32..

Recommended Cutting Conditions ➡ F71~ ➡ F72

S-SCLP(C) Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~3**)



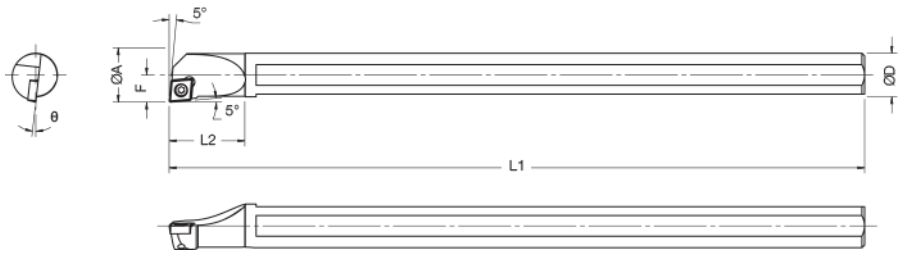


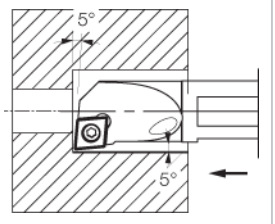
Fig.1

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

A-SCLC Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~3**)



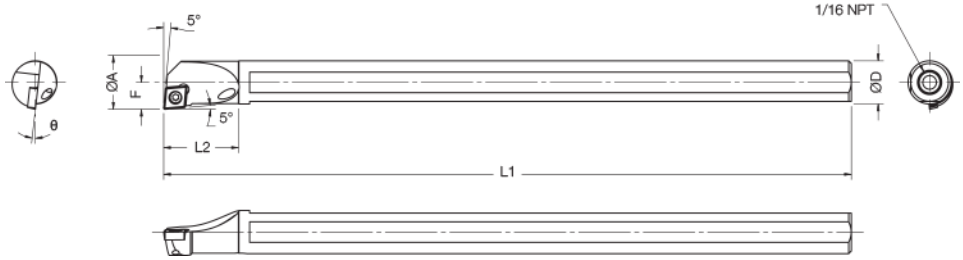


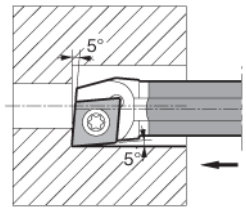
Fig.2

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

C-SCLP(C) Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~7**)



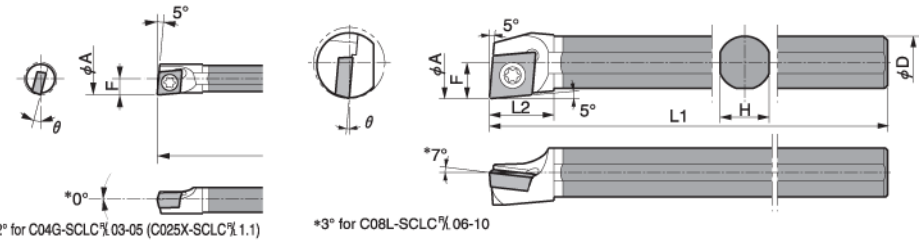


Fig.3

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

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U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	F	θ	Std. Corner-R	Coolant Hole	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench
Steel	S05K-SCLC□2	●	●	inch	0.394	0.312	-	5.00	0.625	0.197	12°	0.004	No	Fig.1	SB-2545TR	T-8
Steel	S06M-SCLP□2.5	●	●		0.472	0.375	-	6.00	1.000	0.236	5°	1/64	No	Fig.1	SB-3TR	T-10
Steel	S08M-SCLP□3	●	●		0.630	0.500	-	6.00	1.180	0.315	4°	1/64	No	Fig.1	SB-4TR	T-15
Steel	S10X-SCLP□3	●	●		0.788	0.625	-	7.00	1.380	0.394	3°	1/64	No	Fig.1		
Steel	S12R-SCLP□3	●	●		0.984	0.750	-	8.00	1.560	0.492	0°	1/64	No	Fig.1		
Steel	S16T-SCLP□3	●	●		1.338	1.000	-	12.00	1.750	0.669	0°	1/64	No	Fig.1		
Steel	A05K-SCLC□-2	●			0.415	0.313	-	5.0	0.870	0.218	11°	1/64	Yes	Fig.2	SB-2545TR	T-8
Steel	A06M-SCLC□-2	●			0.480	0.375	-	6.0	0.870	0.250	8°	1/64	Yes	Fig.2		
Steel	A08R-SCLC□-2	●			0.600	0.500	-	8.0	0.870	0.312	6°	1/64	Yes	Fig.2		
Steel	A10S-SCLC□-2	●			0.770	0.625	-	10.0	0.870	0.406	4°	1/64	Yes	Fig.2		
Carbide	C025X-SCLC□1.1 **	●		inch	0.197	0.156	0.148	3.543	0.315	0.098	15°	0.008	No	Fig.3	SB-1635TR	FT-6
Carbide	C05K-SCLC□2	●			0.394	0.312	0.282	5.00	0.625	0.197	12°	0.004	No	Fig.3	SB-2545TR	FT-8
Carbide	C06M-SCLP□2.5	●			0.472	0.375	0.334	6.00	1.000	0.236	5°	1/64	No	Fig.3	SB-3TR	FT-10
Carbide	C08R-SCLP□3	●			0.630	0.500	0.480	8.00	1.180	0.315	4°	1/64	No	Fig.3	SB-4TR	FT-15
Carbide	C10S-SCLP□3	●			0.788	0.625	0.584	10.00	1.380	0.394	3°	1/64	No	Fig.3		
Carbide	C12S-SCLP□3	●			0.984	0.750	0.710	10.00	1.560	0.492	0°	1/64	No	Fig.3		

** Optional sleeve SL2.5-10 (0.625" dia.) is available. (Sleeve screw: SLS-2, sleeve wrench: LW-2)

Applicable Inserts [CP]

Application	Finishing	Finishing	Finishing-Medium	Medium	Finishing-Medium	Low Carbon Steel/ Finishing	Low Carbon Steel/ Finishing-Medium	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. Page	B13	B13	B13	B13	B14	B14	B14	B14	C13	C4
Shape / Toolholder	PP	GP	HQ	Standard	□-Y	XP	XQ	Without Chipbreaker	PCD	CBN
...SCLP□2	-	-	-	CPGT215..	-	-	-	-	-	-
...SCLP□2.5	CPMT2515..	CPMT2515..	CPMH2515..	CPMH2515..	CPMH2515..	CPMT2515..	-	CPMB2515..	CPMH2515..	CPGB2515..
...SCLP□3	CPMT32..	CPMT32..	CPMH32..	CPMH32..	CPMH32..	CPMT32..	CPMT32..	CPMB32..	CPMH32..	CPGB32..

Applicable Inserts [CC]

Application	Minute D.O.C.	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed
Ref. Page	B8	B8	B9	B9	B9	B9, B10	B8, B9	B11	B10	B11, B12
Shape / Toolholder	CF	GF	PP	GK	HQ	Standard	GQ	□-F	□-FSF	(E/F□-U
...SCLC□1.1	CCGT1109..	-	-	-	-	-	-	CCGT1109..	CCET1109..	-
...SCLC□2 ...SCLC□-2	-	CCGT215..	CCMT215..	CCMT215..	CCMT215..	CCGT215..	CCGT215..	-	-	CCGT215..

Application	Low Feed / Precision	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. Page	B11	B10	B13	B12	B13	C12	C4
Shape / Toolholder	F□-USF	MQ	Without Chipbreaker	AH	A3	PCD	CBN
...SCLC□1.1	-	-	-	-	-	-	CCMW1109..
...SCLC□2 ...SCLC□-2	CCET215..	-	CCGW215..	-	-	CCMT215.. CCGW215..	CCMW215..

Recommended Cutting Conditions → F71~ → F72

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

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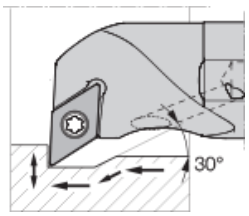
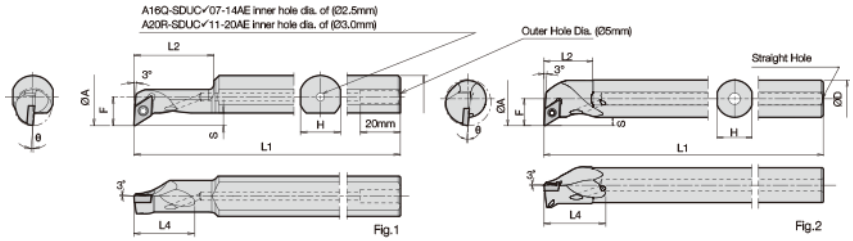
A-SDUC-AE Excellent Bar (Copying)

(Max. Overhang Length **L/D=~5.5**)





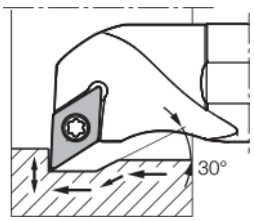
Shank Dia. ØD	Straight Hole Dia. Ød
Ø10	Ø3
Ø12	Ø4
Ø16	Ø5

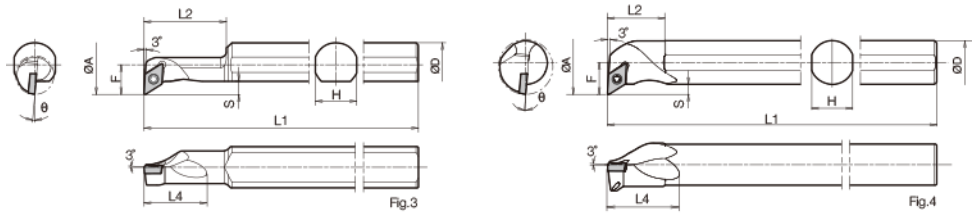
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SDUC-A Steel Bar (Copying)

(Max. Overhang Length **L/D=~4**)



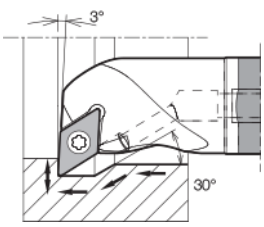


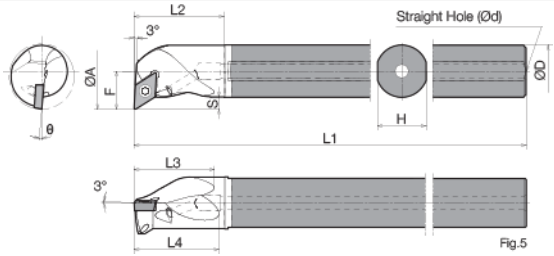
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

E-SDUC-A Carbide Shank Bar (Copying)

(Max. Overhang Length **L/D=~7**)





Shank Dia. ØD	Straight Hole Dia. Ød
Ø10	Ø3
Ø12	Ø4
Ø16	Ø4

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	L4	F	S	θ	Std. Corner-R	Coolant Hole	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A06M-SDUC□2AE	●	●	inch	0.551	0.375	0.336	6	0.748	0.756	0.341	0.130	5°	1/64	Yes	Fig.1	SB-2560TR	FT-8
	A08M-SDUC□2AE	●	●		0.630	0.500	0.461	6	0.827	0.988	0.360	0.130	5°	1/64	Yes	Fig.1		
	A10R-SDUC□2AE	●	●		0.787	0.625	0.586	8	0.827	1.031	0.459	0.130	5°	1/64	Yes	Fig.1		
	A16Q-SDUC□07-14AE	○	○	mm	14	16	15	180	28	23	10.8	4.4	5°	0.4	Yes	Fig.1	SB-2560TR	FT-8
	A10L-SDUC□07-14AE	○	○		14	10	9	140	19	20	8.7	3.3	5°	0.4	Yes	Fig.2	SB-2560TR	FT-8
	A12M-SDUC□07-16AE	○	○		16	12	11	150	21	24	9.7	3.3	5°	0.4	Yes	Fig.2		
	A16Q-SDUC□07-20AE	○	○		20	16	15	180	21	26	11.7	3.3	5°	0.4	Yes	Fig.2		
	A16Q-SDUC□11-23AE	○	○		23	16	15	180	21	31	14.5	6.1	5°	0.4	Yes	Fig.2	SB-4065TR	FT-15
Steel	S16Q-SDUC□07-14A	○	○	mm	14	16	15	180	28	23	10.8	4.4	5°	0.4	No	Fig.3	SB-2560TR	FT-8
	S20R-SDUC□11-20A	○	○		20	20	19	200	48	30	15.6	6.1	5°	0.4	No	Fig.3	SB-4065TR	FT-15
	S10L-SDUC□07-14A	○	○		14	10	9	140	19	20	8.7	3.3	5°	0.4	No	Fig.4	SB-2560TR	FT-8
	S12M-SDUC□07-16A	○	○		16	12	11	150	21	24	9.7	3.3	5°	0.4	No	Fig.4		
	S16Q-SDUC□07-20A	○	○		20	16	15	180	21	26	11.7	3.3	5°	0.4	No	Fig.4		
	S16Q-SDUC□11-23A	○	○		23	16	15	180	21	31	14.5	6.1	5°	0.4	No	Fig.4	SB-4065TR	FT-15
Carbide	E06N-SDUC□2A	●	○	inch	0.551	0.375	0.336	6.3	0.776	0.697	0.341	0.130	5°	1/64	Yes	Fig.5	SB-2560TR	FT-8
	E06N-SDUC□2A-2/3	●	○		0.551	0.375	0.336	4.2	0.776	0.697	0.341	0.130	5°	1/64	Yes	Fig.5		
	E08Q-SDUC□2A	●	○		0.630	0.500	0.461	7.1	0.894	0.772	0.360	0.098	5°	1/64	Yes	Fig.5		
	E08Q-SDUC□2A-2/3	●	○		0.630	0.500	0.461	4.8	0.894	0.772	0.360	0.098	5°	1/64	Yes	Fig.5		
	E10X-SDUC□2A	●	○		0.787	0.625	0.586	8.7	1.091	0.976	0.459	0.130	5°	1/64	Yes	Fig.5		
	E10X-SDUC□2A-2/3	●	○		0.787	0.625	0.586	5.8	1.091	0.976	0.459	0.130	5°	1/64	Yes	Fig.5		
	E10N-SDUC□07-14A	○	○	mm	14	10	9	160	20	19	8.7	3.3	5°	0.4	Yes	Fig.5	SB-2560TR	FT-8
	E10N-SDUC□07-14A-2/3	○			14	10	9	105	20	19	8.7	3.3	5°	0.4	Yes	Fig.5		
	E12Q-SDUC□07-16A	○	○		16	12	11	180	23	22	9.7	3.3	5°	0.4	Yes	Fig.5		
	E12Q-SDUC□07-16A-2/3	○			16	12	11	120	23	22	9.7	3.3	5°	0.4	Yes	Fig.5		
	E16X-SDUC□07-20A	○	○		20	16	15	220	28	26	11.7	3.3	5°	0.4	Yes	Fig.5		
	E16X-SDUC□07-20A-2/3	●			20	16	15	145	28	26	11.7	3.3	5°	0.4	Yes	Fig.5		
	E16X-SDUC□11-23A	○	○		23	16	15	220	28	27	14.5	6.1	5°	0.4	Yes	Fig.5	SB-4065TR	FT-15
	E16X-SDUC□11-23A-2/3	○			23	16	15	145	28	27	14.5	6.1	5°	0.4	Yes	Fig.5		

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Roughing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision	Low Feed
Ref. Page	➡ B15	➡ B15, ➡ B16	➡ B16	➡ B16	➡ B16	➡ B17	➡ B18	➡ B18	➡ B19, ➡ B20	➡ B19	➡ B20
Shape / Toolholder	CF	CK	PP	GK	HQ	Standard	□-F	□-FSF	(E/F)□-U	F□-USF	(E/F)□-J
...-SDUC□2AE... ...-SDUC□07-...	DCGT215..	DCGT215..	DCMT215..	DCMT215..	DCMT215..	DCGT215..	DCGT215..	DCET215..	DCGT215..	DCET215..	DCET215..
...-SDQC□2AE... ...-SDQC□07-...											
...-SDZC□07-...											
...-SDUC□11-...	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCMT325..	DCMT325.. DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..	DCET325.. DCGT325..
...-SDQC□11-...											
...-SDZC□11-...											

Application	Low Feed / Precision	Low Carbon Steel/ Finishing	Low Carbon Steel/ Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. Page	➡ B20	➡ B17	➡ B17	➡ B17	➡ B21	➡ B21	➡ B21	➡ C13	➡ C5
Shape / Toolholder	F□-JSF	XP	XQ	MQ	Without Chipbreaker	AH	□-A3	PCD	CBN
...-SDUC□2AE... ...-SDUC□07-...	-	DCMT215..	-	DCMT215..	DCGW215..	-	-	DCMT215..	DCMW215..
...-SDQC□2AE... ...-SDQC□07-...									
...-SDZC□07-...									
...-SDUC□11-...	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..
...-SDQC□11-...									
...-SDZC□11-...									

Recommended Cutting Conditions ➡ F71~ ➡ F72

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

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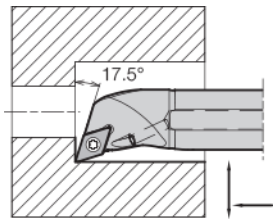
A-SDQC-AE Excellent Bar (Copying)

(Max. Overhang Length **L/D=~5.5**)



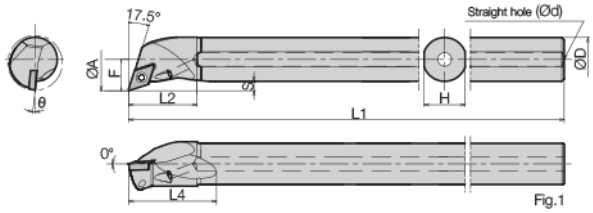


Fig.1

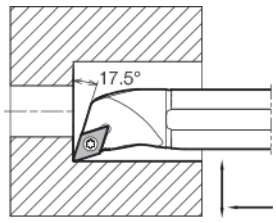
Shank Dia. ØD	Straight Hole Dia. Ød
Ø10	Ø3
Ø12	Ø4
Ø16	Ø5

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SDQC-A Steel Bar (Copying)

(Max. Overhang Length **L/D=~4**)



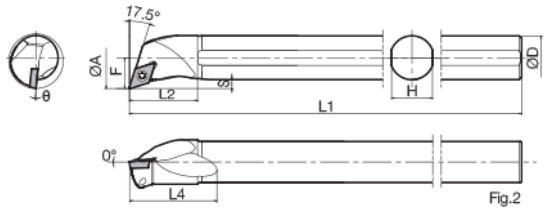


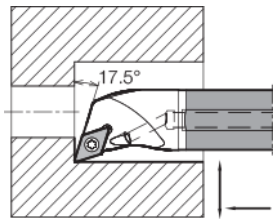
Fig.2

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

E-SDQC-A Carbide Shank Bar (Copying)

(Max. Overhang Length **L/D=~7**)



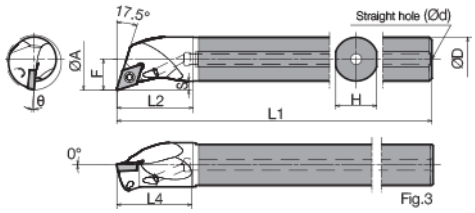


Fig.3

Shank Dia. ØD	Straight Hole Dia. Ød
Ø10	Ø3
Ø12	Ø4
Ø16	Ø4

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	L4	F	S	θ	Std. Corner-R	Coolant Hole	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A06M-SDQC□2AE	●	●	inch	0.512	0.375	0.336	6	0.736	0.783	0.295	0.083	10°	1/64	Yes	Fig.1	SB-2560TR	FT-8
Excellent Bar	A08M-SDQC□2AE	●	●	inch	0.630	0.500	0.461	6	0.866	1.051	0.364	0.102	8°	1/64	Yes	Fig.1	SB-2560TR	FT-8
Excellent Bar	A10R-SDQC□2AE	●	●	inch	0.787	0.625	0.586	8	0.984	1.256	0.443	0.102	6°	1/64	Yes	Fig.1	SB-2560TR	FT-8
Excellent Bar	A10L-SDQC□07-13AE	○	○	mm	13	10	9	140	19	21	7.50	2.1	10°	0.4	Yes	Fig.1	SB-2560TR	FT-8
Excellent Bar	A12M-SDQC□07-16AE	○	○	mm	16	12	11	150	22	25	9.25	2.6	8°	0.4	Yes	Fig.1	SB-2560TR	FT-8
Excellent Bar	A16Q-SDQC□07-20AE	○	○	mm	20	16	15	180	25	32	11.30	2.6	6°	0.4	Yes	Fig.1	SB-2560TR	FT-8
Steel	S10L-SDQC□07-13A	○	○	mm	13	10	9	140	19	21	7.50	2.1	10°	0.4	No	Fig.2	SB-2560TR	FT-8
Steel	S12M-SDQC□07-16A	○	○	mm	16	12	11	150	22	25	9.25	2.6	8°	0.4	No	Fig.2	SB-2560TR	FT-8
Steel	S16Q-SDQC□07-20A	○	○	mm	20	16	15	180	25	32	11.30	2.6	6°	0.4	No	Fig.2	SB-2560TR	FT-8
Carbide	E10N-SDQC□07-13A	○	○	mm	13	10	9	160	20	19	7.50	2.1	10°	0.4	Yes	Fig.3	SB-2560TR	FT-8
Carbide	E10N-SDQC□07-13A-2/3	○		mm	13	10	9	105	20	19	7.50	2.1	10°	0.4	Yes	Fig.3	SB-2560TR	FT-8
Carbide	E12Q-SDQC□07-16A	○	○	mm	16	12	11	180	23	22	9.25	2.6	8°	0.4	Yes	Fig.3	SB-2560TR	FT-8
Carbide	E12Q-SDQC□07-16A-2/3	○		mm	16	12	11	120	23	22	9.25	2.6	8°	0.4	Yes	Fig.3	SB-2560TR	FT-8
Carbide	E16X-SDQC□07-20A	○	○	mm	20	16	15	220	28	27	11.30	2.6	6°	0.4	Yes	Fig.3	SB-2560TR	FT-8
Carbide	E16X-SDQC□07-20A-2/3	○		mm	20	16	15	145	28	27	11.30	2.6	6°	0.4	Yes	Fig.3	SB-2560TR	FT-8

Recommended Cutting Conditions ➡ **F71~** ➡ **F72**
Applicable Inserts ➡ **F45**

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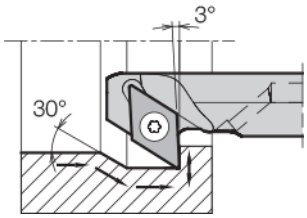
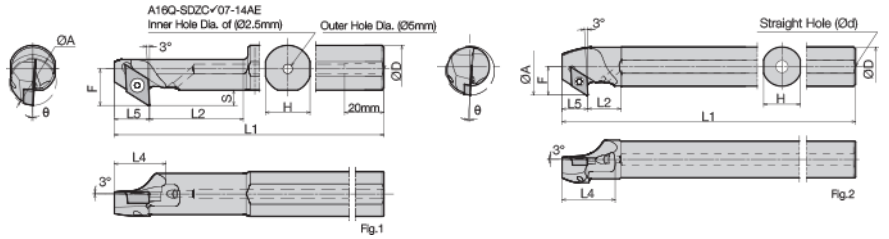
World Express (Shipping: 7-10 Business Days) : ○

A-SDZC-AE Excellent Bar (Back Boring)

(Max. Overhang Length **L/D=~5.5**)





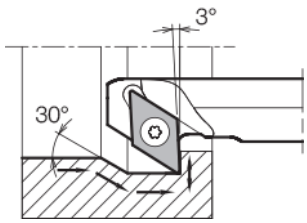
Shank Dia. ØD	Straight Hole Dia. Ød
Ø10	Ø3
Ø12	Ø4
Ø16	Ø5

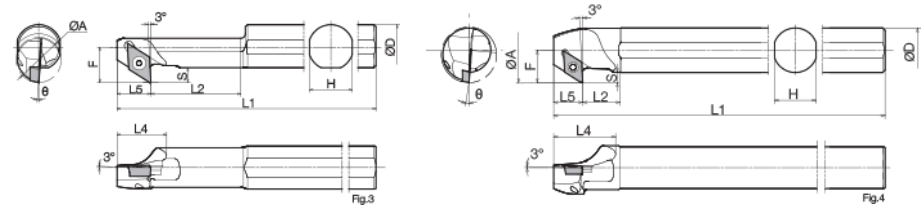
• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

S-SDZC-A Steel Bar (Back Boring)

(Max. Overhang Length **L/D=~4**)



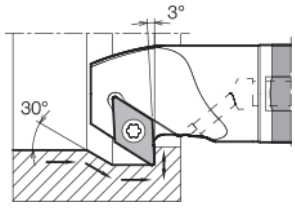


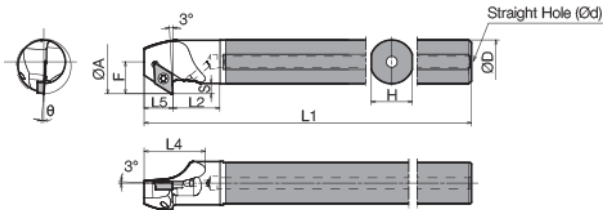
• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

E-SDZC-A Carbide Shank Bar (Back Boring)

(Max. Overhang Length **L/D=~7**)





Shank Dia. ØD	Straight Hole Dia. Ød
Ø10	Ø3
Ø12	Ø4
Ø16	Ø4

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

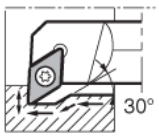
	Part Number	Stock R	Stock L	Min. Bore Dia. ØA	Dimensions (mm) ØD	H	L1	L2	L4	L5	F	S	θ	Std. Corner-R	Coolant Hole	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	**A16Q-SDZC✓07-14AE**	○	○	14	16	15	180	30.0	17	10.0	10.8	4.4	5°	0.4	Yes	Fig.1	SB-2545TR	FT-8
	A10L-SDZC✓07-14AE	○	○	14	10	9	140	14.0	16	9.5	8.7	3.3	5°	0.4	Yes	Fig.2	SB-2545TR	FT-8
	A12M-SDZC✓07-16AE	○	○	16	12	11	150	14.0	20	10.5	9.7	3.3	5°	0.4	Yes	Fig.2	SB-2560TR	
	A16Q-SDZC✓07-20AE	○	○	20	16	15	180	14.0	22	10.5	11.7	3.3	5°	0.4	Yes	Fig.2		
	A16Q-SDZC✓11-23AE	○	○	23	16	15	180	15.0	22	15.0	14.5	6.1	5°	0.4	Yes	Fig.2	SB-4065TR	FT-15
Steel	**S16Q-SDZC✓07-14A**	○	○	14	16	15	180	30.0	17	10.0	10.8	4.4	5°	0.4	No	Fig.3	SB-2545TR	FT-8
	S10L-SDZC✓07-14A	○	○	14	10	9	140	14.0	16	9.5	8.7	3.3	5°	0.4	No	Fig.4	SB-2545TR	FT-8
	S12M-SDZC✓07-16A	○	○	16	12	11	150	14.0	20	10.5	9.7	3.3	5°	0.4	No	Fig.4	SB-2560TR	
	S16Q-SDZC✓07-20A	○	○	20	16	15	180	14.0	22	10.5	11.7	3.3	5°	0.4	No	Fig.4		
	S16Q-SDZC✓11-23A	○	○	23	16	15	180	15.0	22	15.0	14.5	6.1	5°	0.4	No	Fig.4	SB-4065TR	FT-15
Carbide	**E10N-SDZC✓07-14A**	○		14	10	9	160	10.5	16	9.5	8.7	3.3	5°	0.4	Yes	Fig.5	SB-2545TR	FT-8
	E12Q-SDZC✓07-16A	●		16	12	11	180	12.5	20	10.5	9.7	3.3	5°	0.4	Yes	Fig.5	SB-2560TR	
	E16X-SDZC✓07-20A	○		20	16	15	220	17.5	22	10.5	11.7	3.3	5°	0.4	Yes	Fig.5		
	E16X-SDZC✓11-23A	○		23	16	15	220	17.0	22	15.0	14.5	6.1	5°	0.4	Yes	Fig.5	SB-4065TR	FT-15

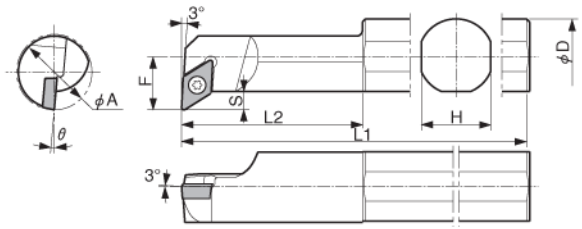
Recommended Cutting Conditions ➡ **F71~** ➡ **F72**
Applicable Inserts ➡ **F45**

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

S-SDUC Steel Bar (Copying)

(Max. Overhang Length **L/D=~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	F	S	θ	Std. Corner-R	Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Wrench
Steel	S08M-SDUC□2	●	●	inch	0.564	0.500	0.480	6.00	1.125	0.346	0.145	5°	1/64	No	SB-2560TR	FT-8
	S10X-SDUC□2	●	●		0.564	0.625	0.584	7.00	1.125	0.346	0.145	5°				
	S12R-SDUC□3	●	●		0.750	0.750	0.710	8.00	1.500	0.476	0.224	5°	1/32		SB-4085TR	FT-15
	S16X-SDUC□3	●	●		0.980	1.000	0.970	9.00	2.360	0.693	0.240	5°				

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Roughing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision	Low Feed
Ref. Page	➡ B15	➡ B15, ➡ B16	➡ B16	➡ B16	➡ B16	➡ B17	➡ B18	➡ B18	➡ B19, ➡ B20	➡ B19	➡ B20
Shape / Toolholder	CF	CK	PP	GK	HQ	Standard	□-F	□-FSF	(E/F)□-U	F□-USF	(E/F)□-J
...-SDUC□2	DCGT215..	DCGT215..	DCMT215..	DCMT215..	DCMT215..	DCGT215..	DCGT215..	DCET215..	DCGT215..	DCET215..	DCET215..
...-SDUC□3	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCMT325..	DCMT325.. DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..	DCET325.. DCGT325..

Application	Low Feed / Precision	Low Carbon Steel/ Finishing	Low Carbon Steel/ Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. Page	➡ B20	➡ B17	➡ B17	➡ B17	➡ B21	➡ B21	➡ B21	➡ C13	➡ C5
Shape / Toolholder	F□-JSF	XP	XQ	MQ	Without Chipbreaker	AH	□-A3	PCD	CBN
...-SDUC□2	-	DCMT215..	-	DCMT215..	DCGW215..	-	-	DCMT215..	DCMW215..
...-SDUC□3	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..

Recommended Cutting Conditions ➡ **F71~** ➡ **F72**

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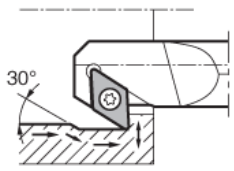
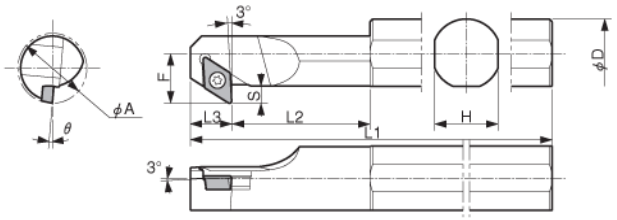
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

S-SDZC Steel Bar (Back Boring)

(Max. Overhang Length **L/D=~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	ØD	H	L1	L2		F	S	θ	Std. Corner-R	Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Wrench
Steel	S10Q-SDZC□2	●	●	inch	0.550	0.625	0.596	7.00	1.18	0.491	0.410	0.173	5°	1/64	No	SB-2560TR	FT-8
Steel	S10X-SDZC□2	●	●	inch	0.630	0.625	0.596	7.00	1.52	0.491	0.449	0.173	5°	1/64	No	SB-2560TR	FT-8
Steel	S12R-SDZC□3	●		inch	0.787	0.750	0.710	8.00	1.60	0.590	0.595	0.240	5°	1/32	No	SB-4085TR	FT-15
Steel	S16X-SDZC□3	●	●	inch	0.984	1.000	0.960	9.00	2.09	0.590	0.693	0.240	5°	1/32	No	SB-4085TR	FT-15

Applicable Inserts

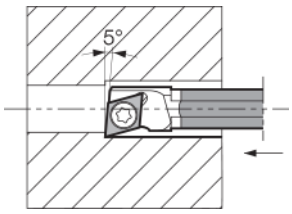
Application	Minute D.O.C.	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Roughing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision	Low Feed
Ref. Page	➡ B15	➡ B15, ➡ B16	➡ B16	➡ B16	➡ B16	➡ B17	➡ B18	➡ B18	➡ B19, ➡ B20	➡ B19	➡ B20
Shape / Toolholder	CF	CK	PP	GK	HQ	Standard	□-F	□-FSF	(E/F)□-U	F□-USF	(E/F)□-J
...-SDZC□2	DCGT215..	DCGT215..	DCMT215..	DCMT215..	DCMT215..	DCGT215..	DCGT215..	DCET215..	DCGT215..	DCET215..	DCET215..
...-SDZC□3	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCMT325..	DCMT325.. DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..	DCET325.. DCGT325..

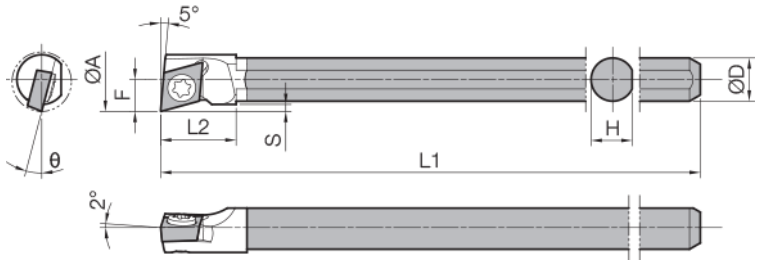
Application	Low Feed / Precision	Low Carbon Steel/ Finishing	Low Carbon Steel/ Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. Page	➡ B20	➡ B17	➡ B17	➡ B17	➡ B21	➡ B21	➡ B21	➡ C13	➡ C5
Shape / Toolholder	F□-JSF	XP	XQ	MQ	Without Chipbreaker	AH	□-A3	PCD	CBN
...-SDZC□2	-	DCMT215..	-	DCMT215..	DCGW215..	-	-	DCMT215..	DCMW215..
...-SDZC□3	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..

Recommended Cutting Conditions ➡ **F71~** ➡ **F72**

C-SJLC Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~7**)



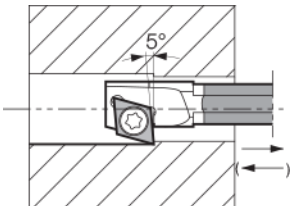


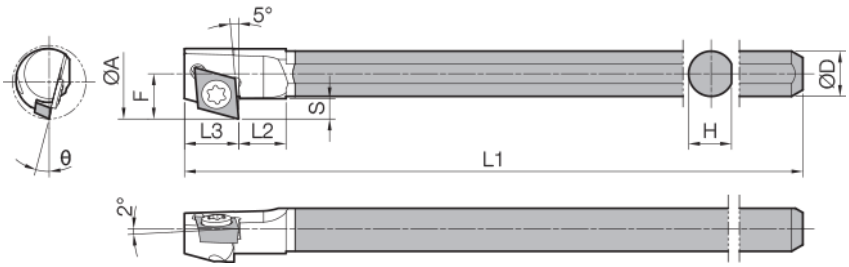
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

C-SJZC Carbide Shank Bar (Back Boring)

(Max. Overhang Length **L/D=~7**)





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

※ When using R-hand Toolholder, Use R-hand insert for machining in this direction (→)
Use L-hand insert for machining in this direction (←)

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)							θ	Std. Corner-R	Spare Parts	
	R	L	ØA	ØD	H	L1	L2	L3	F	S			Clamp Screw	Wrench
C04X-SJLC□03-055	○	○	5.5	4	3.8	91	7	-	2.95	0.65	15°	0.03	SB-1635TR	FT-6
C04X-SJZC□03-065	○	○	6.5	4	3.8	93	4	4.8	4.00	1.80	15°	0.03		

Applicable Inserts

Application	Finishing	Finishing / Precision
Ref. Page	➡ B22	➡ B22
Shape / Toolholder	□-F	□-FSF
...-SJLC□03-...	JCGT1109..	JCET1109..
...-SJZC□03-...	JCGT1109..	JCET1109..

Recommended Cutting Conditions ➡ **F71~** ➡ **F72**

Features of C-SJLC

1. Well balanced design minimizing bore diameter yet maintaining a smaller insert radius.
2. High flexibility of tool pass during pecking.
3. Good surface finish at internal facing.

Features of C-SJZC

1. Back boring bars for workpieces which require high concentric circle accuracy and are unavailable for chuck change.
2. Available for back boring and pecking.
3. Large clearance between cutting edge and holder (1.8mm).

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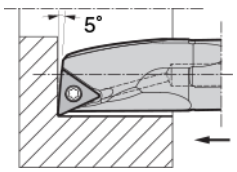
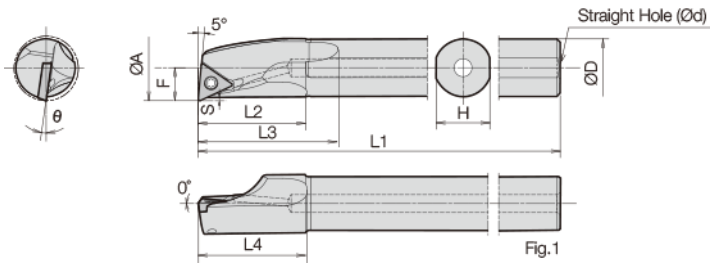
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

A-STLC-AE Excellent Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~5.5**)



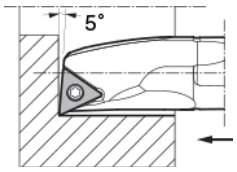


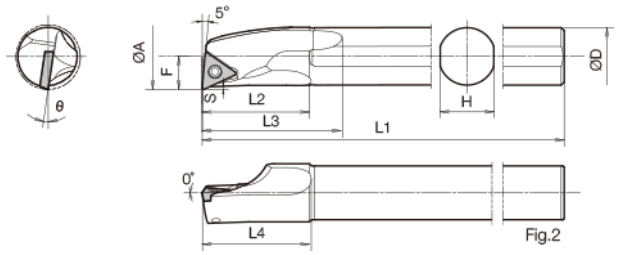
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-STLC-A Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~4**)





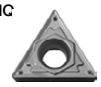
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Min. Bore Dia. ØA	Dimensions (mm) ØD	H	L1	L2	L3	L4	F	S	θ	Std. Corner-R	Coolant Hole	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A08X-STLC□09-10AE	○	○	10	8	7	120	16	22	16	5.0	0.5	14°	0.4	Yes	Fig.1	SB-2250TR	FT-7
	A10L-STLC□09-12AE	○	○	12	10	9	140	20	26	20	6.2	0.9	12°	0.4	Yes	Fig.1		
	A10L-STLC□11-12AE	○	○	12	10	9	140	20	26	20	6.2	0.9	12°	0.4	Yes	Fig.1	SB-2560TR	FT-8
	A12M-STLC□11-14AE	○	○	14	12	11	150	24	30	25	7.2	0.7	10°	0.4	Yes	Fig.1		
	A16Q-STLC□11-18AE	○	○	18	16	15	180	30	39	31	9.2	0.7	8°	0.4	Yes	Fig.1		
Steel	S08X-STLC□09-10A	○	○	10	8	7	120	16	22	16	5.0	0.5	14°	0.4	No	Fig.2	SB-2250TR	FT-7
	S10L-STLC□09-12A	○	○	12	10	9	140	20	26	20	6.2	0.9	12°	0.4	No	Fig.2		
	S10L-STLC□11-12A	○	○	12	10	9	140	20	26	20	6.2	0.9	12°	0.4	No	Fig.2	SB-2560TR	FT-8
	S12M-STLC□11-14A	○	○	14	12	11	150	24	30	25	7.2	0.7	10°	0.4	No	Fig.2		
	S16Q-STLC□11-18A	○	○	18	16	15	180	30	39	31	9.2	0.7	8°	0.4	No	Fig.2		

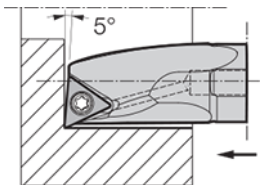
Applicable Insert

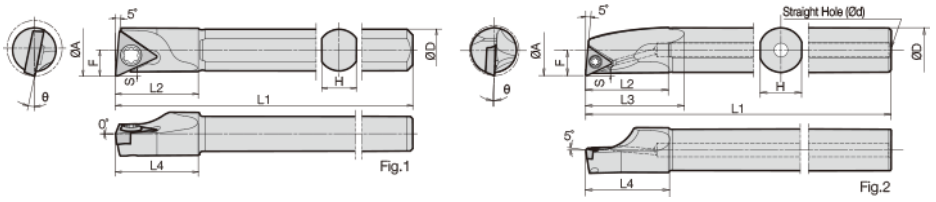
Application	Finishing-Medium
Ref. Page	B23
Shape / Toolholder	HC 
...-STLC□09-...	TCMT1815..
...-STLC□11-...	TCMT215..

Recommended Cutting Conditions F71~ F72

A/S-STLB(P)-AE Excellent Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~5.5**)





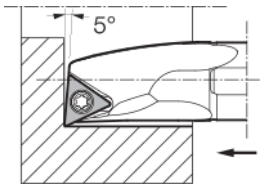
Shank Dia. ØD	Straight Hole Dia. Ød
Ø8	Ø2.5
Ø10	Ø3.0
Ø12	Ø4.0
Ø16	Ø5.0

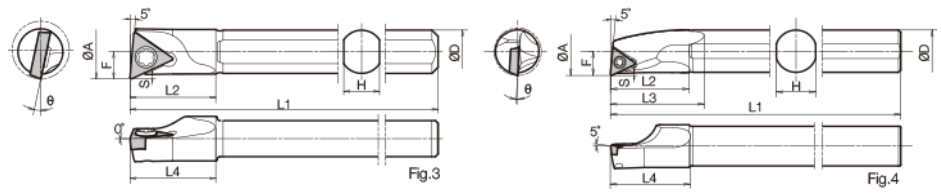
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-STLB(P)-A Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~4**)



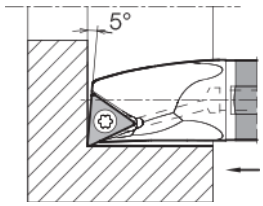


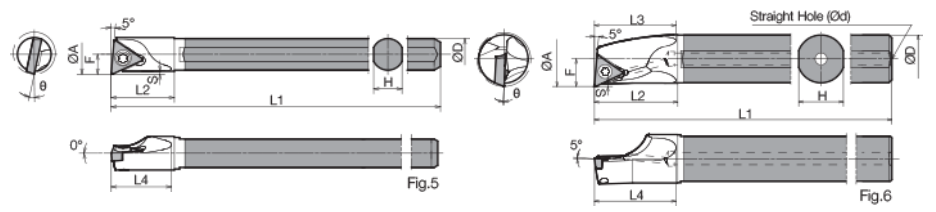
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

E(C)-STLB(P)-A Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~7**)





Shank Dia. ØD	Straight Hole Dia. Ød
Ø8	Ø3
Ø10	Ø3
Ø12	Ø4
Ø16	Ø4

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	ØD	H	L1	L2	L3	L4	F	S	θ	Std. Corner-R	Coolant Hole	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	S04H-STLB□1.2AE	●	●	inch	0.312	0.250	0.211	4	0.472	-	0.469	0.150	0.025	12.0°	0.008	No	Fig.1	SB-2035TR	FT-6
	A05K-STLB□1.2AE	●	●		0.392	0.312	0.273	5	0.630	0.839	0.650	0.201	0.031	12.0°	0.008	Yes	Fig.2		
	A05K-STLP□1.8AE	●	●		0.392	0.312	0.273	5	0.630	0.850	0.646	0.197	0.022	10.0°	1/64	Yes	Fig.2	SB-2545TR	FT-8
	A06M-STLP□1.8AE	●	●		0.480	0.375	0.336	6	0.787	0.949	0.807	0.244	0.036	8.0°	1/64	Yes	Fig.2		
	A06M-STLP□2AE	●	●		0.480	0.375	0.336	6	0.787	0.961	0.807	0.236	0.030	10.0°	1/64	Yes	Fig.2		
	A08M-STLP□2AE	●	●		0.580	0.500	0.461	6	0.945	1.228	0.953	0.283	0.032	7.0°	1/64	Yes	Fig.2	SB-3060TR	FT-10
	A10R-STLP□2AE	●	●		0.700	0.625	0.586	8	1.181	1.402	1.193	0.362	0.036	3.5°	1/64	Yes	Fig.2		
	S06H-STLB□06-08AE	○	○	mm	8	6	5.0	100	12	-	12	3.8	0.5	12.0°	0.2	No	Fig.1	SB-2035TR	FT-6
	NEW A08X-STLP□08-10AE	○	○		10	8	7.0	120	16	22	16	5.0	0.5	10.0°	0.4	Yes	Fig.2	SB-1TR	FT-6
	A08X-STLP□09-10AE	○	○		10	8	7.0	120	16	22	16	5.0	0.5	10.0°	0.4	Yes	Fig.2	SB-2545TR	FT-8
	A10L-STLP□09-12AE	○	○		12	10	9.0	140	20	25	20	6.2	0.9	8.0°	0.4	Yes	Fig.2		
	A10L-STLP□11-12AE	○	○		12	10	9.0	140	20	26	20	6.0	0.7	10.0°	0.4	Yes	Fig.2	SB-3060TR	FT-10
	A12M-STLP□11-14AE	○	○		14	12	11.0	150	24	30	24	7.2	0.8	7.0°	0.4	Yes	Fig.2		
	NEW A12M-STLP□09-16AE	○	○		16	12	11.0	150	24	30	24	8.0	0.6	5.0°	0.4	Yes	Fig.2	SB-2545TR	FT-8
	A16Q-STLP□11-18AE	○	○		18	16	15.0	180	30	36	30	9.2	0.7	3.5°	0.4	Yes	Fig.2	SB-3060TR	FT-10
Steel	S06H-STLB□06-08A	○	○	mm	8	6	5.0	100	12	-	12	3.8	0.5	12.0°	0.2	No	Fig.3	SB-2035TR	FT-6
	NEW S08X-STLP□08-10A	○	○		10	8	7.0	120	16	22	16	5.0	0.5	10.0°	0.4	No	Fig.4	SB-1TR	FT-6
	S08X-STLP□09-10A	○	○		10	8	7.0	120	16	22	16	5.0	0.5	10.0°	0.4	No	Fig.4	SB-2545TR	FT-8
	S10L-STLP□09-12A	○	○		12	10	9.0	140	20	25	20	6.2	0.9	8.0°	0.4	No	Fig.4		
	S10L-STLP□11-12A	○	○		12	10	9.0	140	20	26	20	6.0	0.7	10.0°	0.4	No	Fig.4	SB-3060TR	FT-10
	S12M-STLP□11-14A	○	○		14	12	11.0	150	24	30	24	7.2	0.8	7.0°	0.4	No	Fig.4		
	NEW S12M-STLP□09-16A	○	○		16	12	11.0	150	24	30	24	8.0	0.6	5.0°	0.4	No	Fig.4	SB-2545TR	FT-8
	S16Q-STLP□11-18A	○	○		18	16	15.0	180	30	36	30	9.2	0.7	3.5°	0.4	No	Fig.4	SB-3060TR	FT-10
Carbide	C06J-STLB□06-08A	○	○	mm	8	6	5.4	110	12	-	12	3.8	0.5	12.0°	0.2	No	Fig.5	SB-2035TR	FT-6
	NEW E08L-STLP□08-10A	○	○		10	8	7.0	140	16	15	15	5.0	0.5	10.0°	0.4	Yes	Fig.6	SB-1TR	FT-6
	E08L-STLP□09-10A	○	○		10	8	7.0	140	16	15	15	5.0	0.5	10.0°	0.4	Yes	Fig.6	SB-2545TR	FT-8
	E10N-STLP□09-12A	○	○		12	10	9.0	160	20	19	19	6.2	0.9	8.0°	0.4	Yes	Fig.6		
	E10N-STLP□09-12A-2/3	○			12	10	9.0	105	20	19	19	6.2	0.9	8.0°	0.4	Yes	Fig.6		
	E10N-STLP□09-12A-1/2	○			12	10	9.0	80	20	19	19	6.2	0.9	8.0°	0.4	Yes	Fig.6		
	E10N-STLP□11-12A	○	○		12	10	9.0	160	20	19	19	6.0	0.7	10.0°	0.4	Yes	Fig.6		
	E10N-STLP□11-12A-2/3	○			12	10	9.0	105	20	19	19	6.0	0.7	10.0°	0.4	Yes	Fig.6		
	E10N-STLP□11-12A-1/2	○			12	10	9.0	80	20	19	19	6.0	0.7	10.0°	0.4	Yes	Fig.6		
	E12Q-STLP□11-14A	○	○		14	12	11.0	180	23	22	22	7.2	0.8	7.0°	0.4	Yes	Fig.6	SB-3060TR	FT-10
	E12Q-STLP□11-14A-2/3	○			14	12	11.0	120	23	22	22	7.2	0.8	7.0°	0.4	Yes	Fig.6		
	E12Q-STLP□11-14A-1/2	○			14	12	11.0	90	23	22	22	7.2	0.8	7.0°	0.4	Yes	Fig.6		
	E12Q-STLP□11-14A-1/2	○			14	12	11.0	90	23	22	22	7.2	0.8	7.0°	0.4	Yes	Fig.6		
	NEW E12Q-STLP□09-16A	○	○		16	12	11.0	180	23	22	22	8.0	0.6	5.0°	0.4	Yes	Fig.6	SB-2545TR	FT-8
	E16X-STLP□11-18A	○	○		18	16	15.0	220	28	27	27	9.2	0.7	3.5°	0.4	Yes	Fig.6	SB-3060TR	FT-10
	E16X-STLP□11-18A-2/3	○			18	16	15.0	145	28	27	27	9.2	0.7	3.5°	0.4	Yes	Fig.6		
	E16X-STLP□11-18A-1/2	○			18	16	15.0	110	28	27	27	9.2	0.7	3.5°	0.4	Yes	Fig.6		

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Medium	Low Feed / Precision	Low Carbon Steel/ Finishing
Ref. Page	➡ B23, ➡ B25	➡ B25	➡ B25	➡ B23	➡ B25	➡ B23, ➡ B26, ➡ B27	➡ B27	➡ B27	➡ B27	➡ B25
Shape / Toolholder	CF	PP	GP	DP	HQ	□	□-FSF	□-H	F□-USF	XP
...-STLB□1.2... ...-STLB□06-...	TBGT121..	-	-	TBMT121..	-	TBGT121..	-	-	-	-
...-STLB□08-...	TPGT1515..	-	-	-	-	TPGH1515..	TPET1515..	-	TPET1515..	-
...-STLP□1.8... ...-STLP□09-...	TPGT1815..	TPMT1815..	TPMT1815..	-	TPMT1815..	TPGH1815..	-	-	-	TPMT1815..
...-STLP□2... ...-STLP□11-...	-	TPMT22..	TPMT22..	-	TPMT22..	TPGH22..	TPET22..	TPGH22..	TPET22..	TPMT22..

Application	Low Carbon Steel/ Finishing-Medium	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. Page	➡ B26	➡ B23, ➡ B27	➡ C14~ ➡ C16	➡ C6
Shape / Toolholder	XQ	Without Chipbreaker	PCD	CBN
...-STLB□1.2... ...-STLB□06-...	-	TBGW121..	TBMT121.. TBGW121..	-
...-STLB□08-...	-	TPGB1515..	TPMH1515.. TPGB1515..	TPGB1515..
...-STLP□1.8... ...-STLP□09-...	-	TPGB1815..	TPMH1815.. TPGB1815..	TPGB1815..
...-STLP□2... ...-STLP□11-...	TPMT22..	TPGB22..	TPMH22.. TPGB22..	TPGB22..

Recommended Cutting Conditions ➡ F71~ ➡ F72

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

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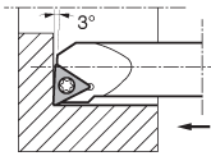
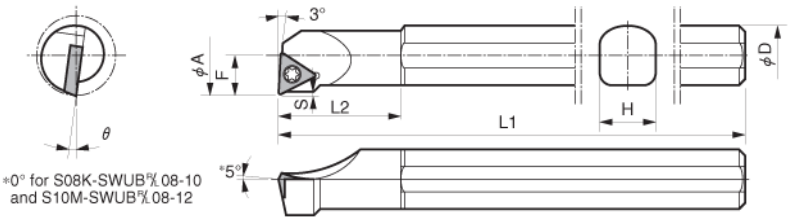
S-STUP(B) Steel Bar (Boring)

(Max. Overhang Length **L/D=~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

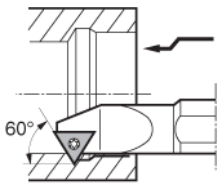
Toolholder Dimensions

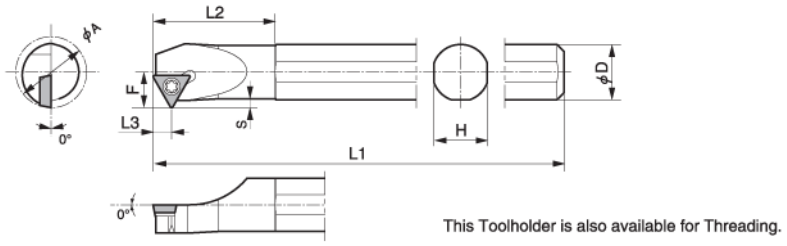
Part Number		Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	F	S	θ	Std. Corner-R	Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Wrench
Steel	S04H-STUB□1.2	●		inch	0.312	0.250	0.224	4.00	0.50	0.148	0.023	12°	1/64	No	SB-1STR	FT-6
	S05K-STUP□1.5	●			0.392	0.313	0.270	5.00	0.75	0.196	0.020	13°	1/64		SB-1TR	FT-6
	S06M-STUP□1.8	●	●		0.472	0.375	0.356	6.00	1.01	0.236	0.015	13°	1/64		SB-2TR	FT-8
	S08M-STUP□1.8	●	●		0.630	0.500	0.480	6.00	1.18	0.315	0.090	10°	1/64			
	S10X-STUP□2	●	●		0.787	0.625	0.584	7.00	1.38	0.394	0.100	7°	1/64		SB-3TR	FT-10
	S12R-STUP□2	●	●		0.912	0.750	0.710	8.00	1.58	0.456	0.115	5°	1/64			

Applicable Inserts ➡ F55

S-STWP Steel Bar (Copying)

(Max. Overhang Length **L/D=~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

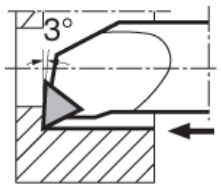
Toolholder Dimensions

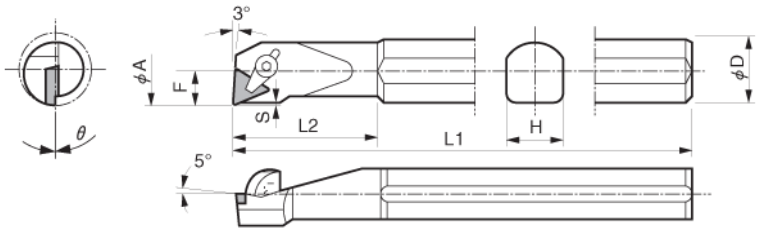
Part Number		Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	L3	F	S	θ	Std. Corner-R	Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Wrench
Steel	S06M-STWP□2	●		inch	0.476	0.375	0.350	6.00	0.91	0.205	0.238	0.056	0°	1/64	No	SB-3STR	FT-10
	S08M-STWP□2	●			0.630	0.500	0.476	6.00	1.20	0.205	0.315	0.700	0°	1/64			
	S10X-STWP□2	●			0.786	0.625	0.600	7.00	1.40	0.205	0.393	0.860	0°	1/64			
	S12R-STWP□2	●			0.970	0.750	0.726	8.00	1.60	0.205	0.485	0.115	0°	1/64			
	S16R-STWP□2	●			1.240	1.000	0.974	8.00	2.00	0.205	0.620	0.125	0°	1/64			

Applicable Inserts ➡ F55

S-CTUP Steel Bar (Copying)

(Max. Overhang Length **L/D=~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	F	S	θ	Std. Corner-R	Coolant Hole	Spare Parts: Clamp Assembly	Wrench		Shim	Shim Screw
Steel	S10X-CTUP□2	●		inch	0.625	0.625	0.584	7.00	1.25	0.313	0.03	0°	1/64	No	CPS-2S	FT-15	-	-	-
	S12X-CTUP□2	●			1.060	0.750	0.710	7.00	1.50	0.520	0.05	0°	1/64		CPS-2	-	LW-2.5	-	-

Applicable Inserts

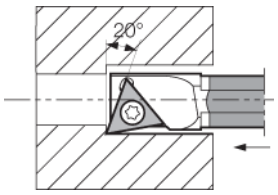
Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Medium	Low Feed / Precision	Low Carbon Steel/ Finishing
Ref. Page	➡ B23, ➡ B25	➡ B25	➡ B25	➡ B23	➡ B25	➡ B23, ➡ B26, ➡ B27	➡ B27	➡ B27	➡ B27	➡ B25
Shape / Toolholder	CF	PP	GP	DP	HQ	□	□-FSF	□-H	F□-USF	XP
...-STUB□1.2	TBGT121..	-	-	TBMT121..	-	TBGT121..	-	-	-	-
...-STUP□1.5	TPGT1515..	-	-	-	-	TPGH1515..	TPET1515..	-	TPET1515..	-
...-STUP□1.8	TPGT1815..	TPMT1815..	TPMT1815..	-	TPMT1815..	TPGH1815..	-	-	-	TPMT1815..
...-STUP□2 ...-STWP□2 ...-CTUP□2	-	TPMT22..	TPMT22..	-	TPMT22..	TPGH22..	TPET22..	TPGH22..	TPET22..	TPMT22..

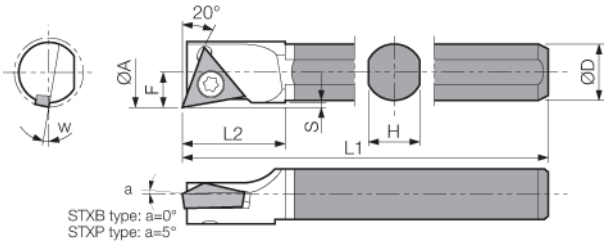
Application	Low Carbon Steel/ Finishing-Medium	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. Page	➡ B26	➡ B23, ➡ B27	➡ C14~ ➡ C16	➡ C6
Shape / Toolholder	XQ	Without Chipbreaker	PCD	CBN
...-STUB□1.2	-	TBGW121..	TBMT121.. TBGW121..	-
...-STUP□1.5	-	TPGB1515..	TPMH1515.. TPGB1515..	TPGB1515..
...-STUP□1.8	-	TPGB1815..	TPMH1815.. TPGB1815..	TPGB1815..
...-STUP□2 ...-STWP□2 ...-CTUP□2	TPMT22..	TPGB22..	TPMH22.. TPGB22..	TPGB22..

Recommended Cutting Conditions ➡ F71~ ➡ F72

C-STXP(B) Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~7**)



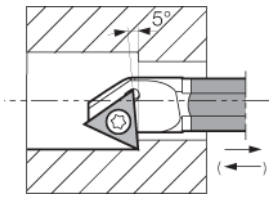


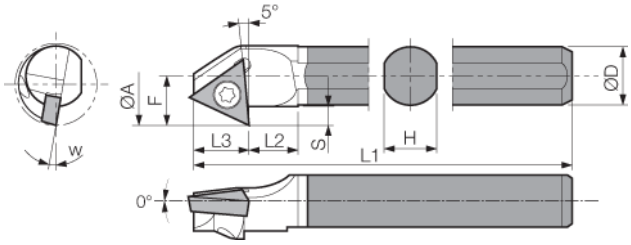
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

C-STZB Carbide Shank Bar (Back Boring)

(Max. Overhang Length **L/D=~7**)





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

※ When using R-hand Toolholder, Use R-hand insert for machining in this direction (→)
Use L-hand insert for machining in this direction (←)

Toolholder Dimensions

Part Number	Previous Part Number	Stock		Min. Bore Dia.	Dimensions (mm)							θ	Std. Corner-R	Spare Parts	
														Clamp Screw	Wrench
		R	L	ØA	ØD	H	L1	L2	L3	F	S				
C06J-STXBR/L06 -075	STXBR/L 07506B-06W	○	○	7.5	6	5.4	110	11	0.5	3.75	0.5	10°	0.03	SB-1STR	FT-6
C08X-STXPR/L08 -09	STXPR/L 09008B-08W	○	○	9.0	8	7.0	143	14	0.6	4.60	0.5	10°	0.03	SB-1TR	
C10X-STXPR/L09 -11	STXPR/L 11010B-09W	○	○	11.0	10	9.0	164	17	0.6	5.60	0.5	10°	0.03	SB-2TR	FT-8
C06J-STZBR/L06 -085	STZBR/L 08506B-06W	○		8.5	6	5.4	110	5	5.7	5.10	2.0	10°	0.03	SB-1STR	FT-6

Applicable Inserts → **F57**

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Low Feed / Precision	Low Carbon Steel/ Finishing	Cast Iron
Ref. Page	➡ B23, ➡ B25	➡ B25	➡ B25	➡ B23	➡ B25	➡ B23, ➡ B26, ➡ B27	➡ B27	➡ B27	➡ B25	➡ B23, ➡ B27
Shape / Toolholder	CF	PP	GP	DP	HQ	R/L	R/L-FSF	F R/L -USF	XP	Without Chipbreaker
...-STXBR/L1.2... ...-STXBR/L06-...	TBGT121..	-	-	TBMT121..	-	TBGT121..	-	-	-	TBGW121..
...-STXPR/L08-...	TPGT1515..	-	-	-	-	TPGH1515..	TPET1515..	TPET1515..	-	TPGB1515..
...-STXPR/L1.8... ...-STXPR/L09-...	TPGT1815..	TPMT1815..	TPMT1815..	-	TPMT1815..	TPGH1815..	-	-	TPMT1815..	TPGB1815..
...-STZBR/L1.2... ...-STZBR/L06-...	TBGT121..	-	-	TBMT121..	-	TPGH121..	-	-	-	TPGB22..

Application	Non-ferrous Metals	Hard Materials
Ref. Page	➡ C14~ ➡ C16	➡ C6
Shape / Toolholder	PCD	CBN
...-STXBR/L1.2... ...-STXBR/L06-...	TBMT121..	-
...-STXPR/L08-...	TPMH1515.. TPGB1515..	TPGB1515..
...-STXPR/L1.8... ...-STXPR/L09-...	TPMH1815.. TPGB1815..	TPGB1815..
...-STZBR/L1.2... ...-STZBR/L06-...	TBMT121..	-

Recommended Cutting Conditions ➡ F71~ ➡ F72

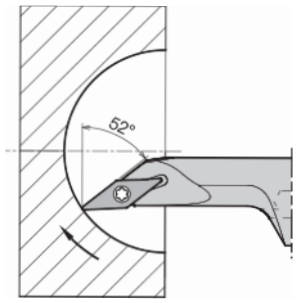
Recommended Cutting Conditions C...STXP(B) Boring Bar

(Work Material : 4140)

Toolholder Description	Insert Description (Grade)	Insert Grade (Vc:sfm)	Depth of Cut: D.O.C.(in), Feed: f(ipr)		Coolant
			D.O.C.	f	
C06J-STXBR/L06-075	TBGT0601003R/L (PR930)	100~330	0.001~0.004	0.001~0.002	Yes
C08X-STXPR/L08-09	TPGH080201R/L (PR930)	100~330	0.002~0.006	0.001~0.003	Yes
C10X-STXPR/L09-11	TPGH090201R/L (PR930)	100~330	0.002~0.006	0.001~0.003	Yes

A-SVJP(C)-AE Excellent Bar (Internal Spherical Machining / Internal Facing)

(Max. Overhang Length **L/D=~5.5**)



Please see ➡ F59 for cutting instructions

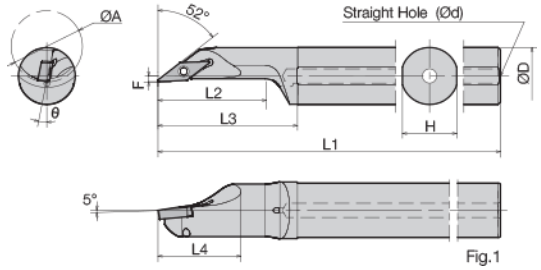


Fig.1

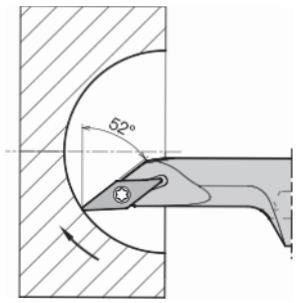
Shank Dia. ØD	Straight Hole Dia. Ød
Ø12	Ø4
Ø16	Ø4

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SVJP(C)-A Steel Bar (Internal Spherical Machining / Internal Facing)

(Max. Overhang Length **L/D=~4**)



Please see ➡ F59 for cutting instructions

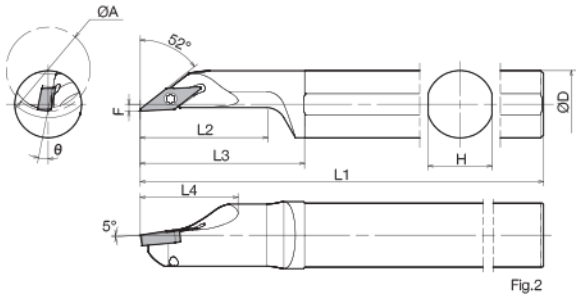


Fig.2

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Min. Bore Dia. ØA	Dimensions (mm) ØD	H	L1	L2	L3	L4	F	θ	Std. Corner-R	Coolant Hole	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A12M-SVJP□08-16AE	○	○	16	12	11	150	26	33	21	2	5°	0.2	Yes	Fig.1	SB-2050TR	FT-6
	A12M-SVJC□08-16AE	○	○	16	12	11	150	26	33	20	2	5°	0.4	Yes	Fig.1		
	A16Q-SVJC□08-20AE	○	○	20	16	15	180	36	43	22	2	5°	0.4	Yes	Fig.1		
Steel	S12M-SVJP□08-16A	○	○	16	12	11	150	26	33	21	2	5°	0.2	No	Fig.2	SB-2050TR	FT-6
	S12M-SVJC□08-16A	○	○	16	12	11	150	26	33	20	2	5°	0.4	No	Fig.2		
	S16Q-SVJC□08-20A	○	○	20	16	15	180	36	43	22	2	5°	0.4	No	Fig.2		

Applicable Inserts

Application	Finishing	Finishing	Finishing	Finishing-Medium	Finishing / Precision	Low Feed / Precision	Non-ferrous Metals	Hard Materials
Ref. Page	➡ B31	➡ B30	➡ B30	➡ B30	➡ B32	➡ B32	➡ C16	➡ C7
Shape / Toolholder	CK	VF	PP	HQ	□-FSF	F□-USF	PCD	CBN
...-SVJP□08-...	VPGT1515	-	-	-	VPET1515..	VPET1515..	-	-
...-SVJC□08-...	-	VCMT1515..	VCMT1515..	VCMT1515..	-	-	VCMT1515..	VCGW1515..

Recommended Cutting Conditions ➡ **F71~** ➡ **F72**

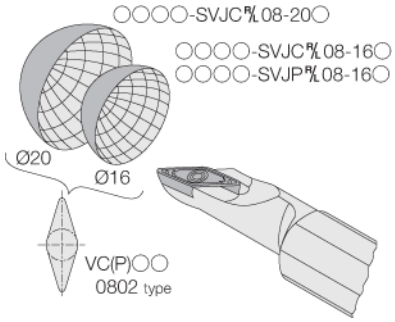
(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at KyoceraPrecisionTools.com

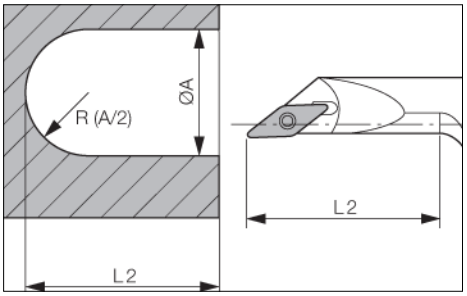
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

A...SVJP(C)-○, S...SVJP(C)-○ Excellent Bar (Internal Spherical Machining / Internal Facing)

〔 Refer to Page ➡ 58 (Dynamic bar) 〕

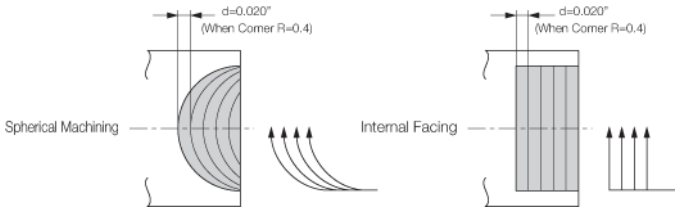
1. Application Range





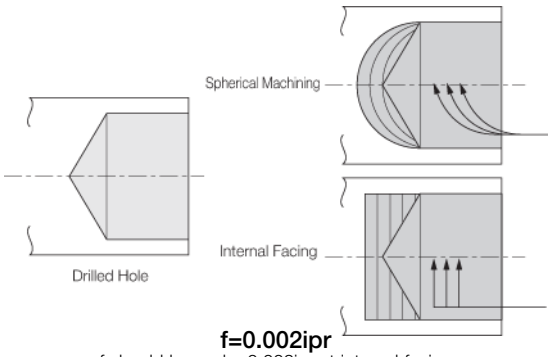
2. Machining Method

In Cases with No Existing Hole



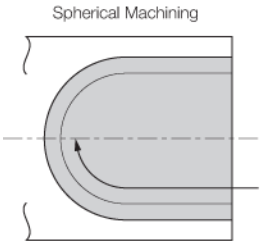
f=0.002ipr
f should be under 0.002ipr at internal facing

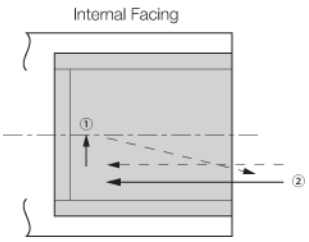
In Cases with Drilled Hole



f=0.002ipr
f should be under 0.002ipr at internal facing

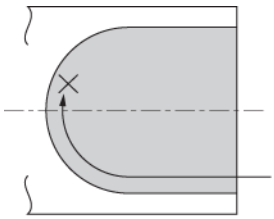
Finishing



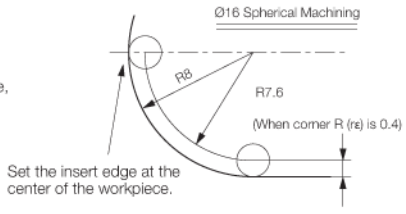


Machining Process
1. Finish the internal face firstly.
2. Next, finish the internal diameter.

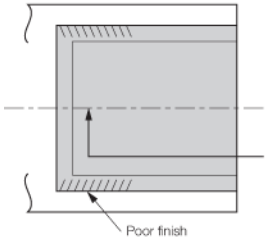
3. Caution



When machining past the center of the workpiece, insert breakage may occur.

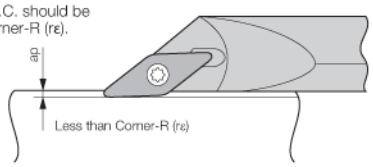


Adjust the machining program of radius smaller by Corner-R (rε) value.



Machining of this kind is available, but the oblique part may be scratched by chips.

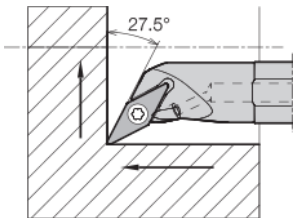
For internal profiling, D.O.C. should be less than the value of Corner-R (rε).



(Burr may occur, if D.O.C. is bigger than corner-R)

A-SVPB(C)-AE Excellent Bar (Copying / Undercutting)

(Max. Overhang Length **L/D=~5.5**)



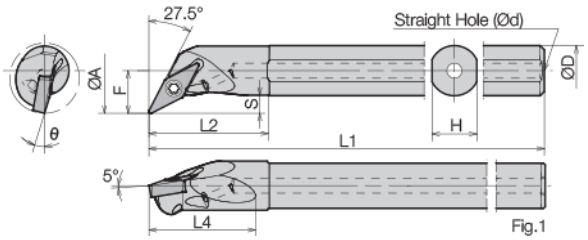


Fig.1

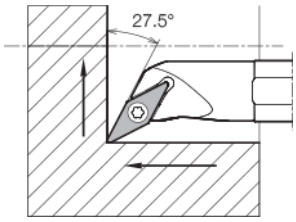
Shank Dia. ØD	Straight Hole Dia. Ød
Ø10	Ø3
Ø12	Ø4
Ø16	Ø5

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SVPB-A Steel Bar (Copying / Undercutting)

(Max. Overhang Length **L/D=~4**)



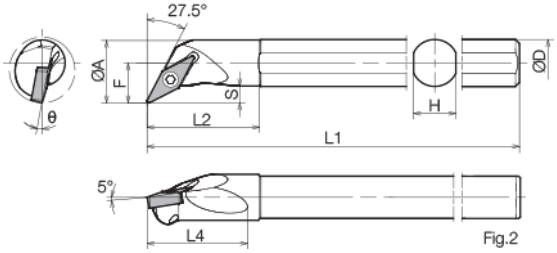


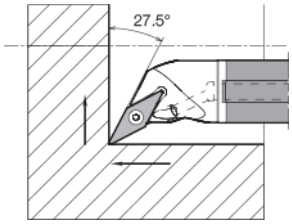
Fig.2

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

E-SVPB(C)-A Carbide Shank Bar (Copying / Undercutting)

(Max. Overhang Length **L/D=~7**)



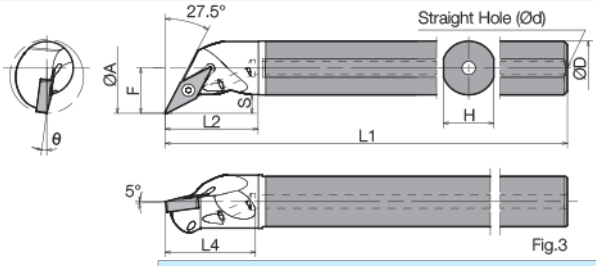


Fig.3

Shank Dia. ØD	Straight Hole Dia. Ød
Ø10	Ø3
Ø12	Ø4
Ø16	Ø4

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	L4	F	S	θ	Std. Corner-R	Coolant Hole	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A06M-SVPC□1.5AE	●	●	inch	0.630	0.375	0.336	6	0.945	0.843	0.335	0.118	8°	1/64	Yes	Fig.1	SB-2570TR	FT-8
	A08M-SVPB□2AE	●	●		0.790	0.500	0.461	6	1.142	1.000	0.433	0.177	8°	1/64	Yes	Fig.1		
	A10R-SVPB□2AE	●	●		0.980	0.625	0.586	8	1.378	1.283	0.531	0.197	5°	1/64	Yes	Fig.1		
	A10L-SVPC□08-14AE	○	○	mm	14	10	9	140	24	21.0	8.5	3.0	8°	0.4	Yes	Fig.1	SB-2050TR	FT-6
	A12M-SVPB□11-18AE	○	○		18	12	11	150	29	26.0	11.0	4.5	8°	0.4	Yes	Fig.1	SB-2570TR	FT-8
	A16Q-SVPB□11-22AE	○	○		22	16	15	180	35	33.0	13.5	5.0	5°	0.4	Yes	Fig.1		
Steel	S10L-SVPC□08-14A	○	○	mm	14	10	9	140	24	21.0	8.5	3.0	8°	0.4	No	Fig.2	SB-2050TR	FT-6
	S12M-SVPB□11-18A	○	○		18	12	11	150	29	26.0	11.0	4.5	8°	0.4	No	Fig.2	SB-2570TR	FT-8
	S16Q-SVPB□11-22A	○	○		22	16	15	180	35	33.0	13.5	5.0	5°	0.4	No	Fig.2		
Carbide	E10N-SVPC□08-14A	○		mm	14	10	9	160	20	18.5	8.5	3.0	8°	0.4	Yes	Fig.3	SB-2050TR	FT-6
	E12Q-SVPB□11-18A	○			18	12	11	180	23	22.0	11.0	4.5	8°	0.4	Yes	Fig.3	SB-2570TR	FT-8
	E16X-SVPB□11-22A	○			22	16	15	220	28	27.0	13.5	5.0	5°	0.4	Yes	Fig.3		

Applicable Inserts

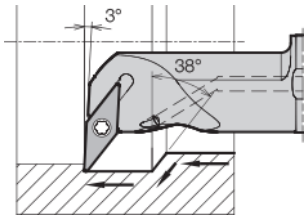
Application	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Non-ferrous Metals	Hard Materials
Ref. Page	➡ B28, ➡ B30	➡ B28, ➡ B30	➡ B28	➡ B28, ➡ B30	➡ B29	➡ B28	➡ B29	➡ C16	➡ C7
Shape / Toolholder	VF	PP	GP	HQ	□-F	□-FSF	□-Y	PCD	CBN
...-SVPC□1.5AE... ...-SVPC□08-...	VCMT1515..	VCMT1515..	-	VCMT1515..	-	-	-	VCMT1515..	VCGW1515..
...-SVPB□2AE... ...-SVPB□11-...	VBMT22..	VBMT22..	VBMT22..	VBMT22..	VB_T22..	VBET22..	VBGT22..	VBMT22..	VBGW22..

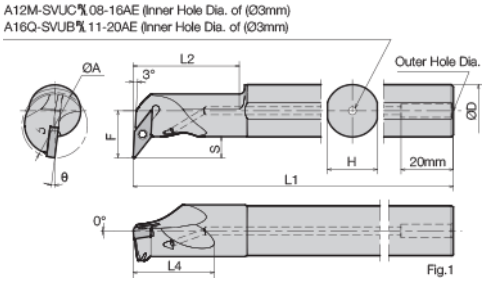
Recommended Cutting Conditions ➡ F71~ ➡ F72

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

A-SVUB(C)-AE Excellent Bar (Copying)

(Max. Overhang Length **L/D=~5.5**)





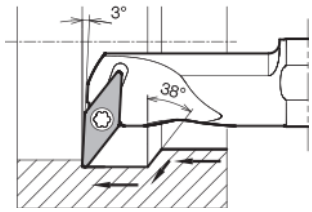
Shank Dia. ØD	Outer Hole Dia. Ød
Ø12	Ø4
Ø16	Ø5

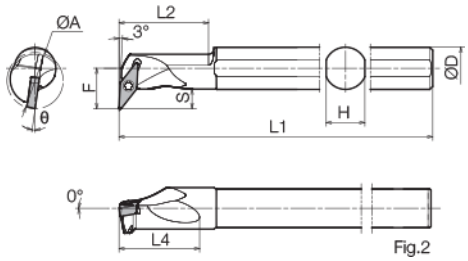
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SVUB(C)-A Steel Bar (Copying)

(Max. Overhang Length **L/D=~4**)



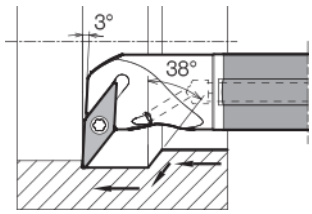


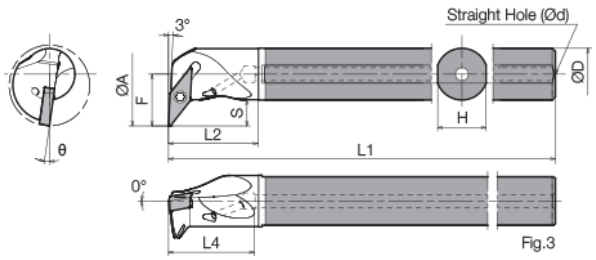
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

A-SVUB(C)-A Carbide Shank Bar (Copying)

(Max. Overhang Length **L/D=~7**)





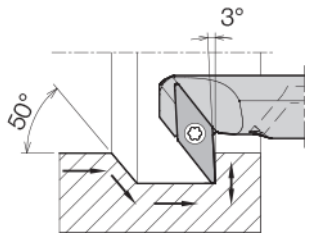
Shank Dia. ØD	Straight Hole Dia. Ød
Ø12	Ø4
Ø16	Ø4

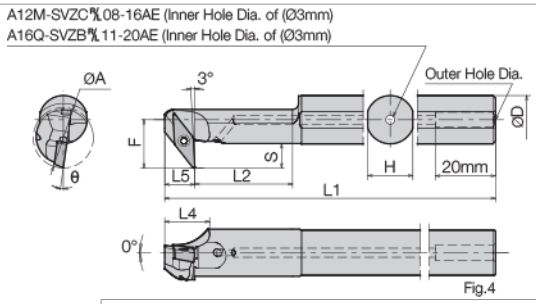
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

A-SVZB(C)-AE Excellent Bar (Back Boring)

(Max. Overhang Length **L/D=~5.5**)





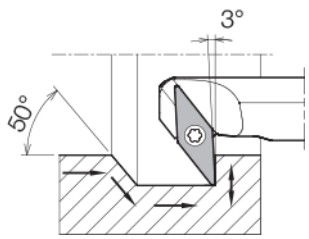
Shank Dia. ØD	Outer Hole Dia. Ød
Ø12	Ø4
Ø16	Ø5

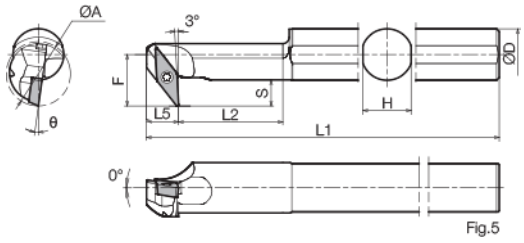
• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

A-SVZB(C)-A Steel Bar (Back Boring)

(Max. Overhang Length **L/D=~4**)





• Right-hand shown

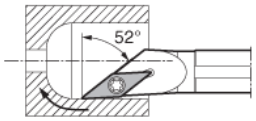
• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

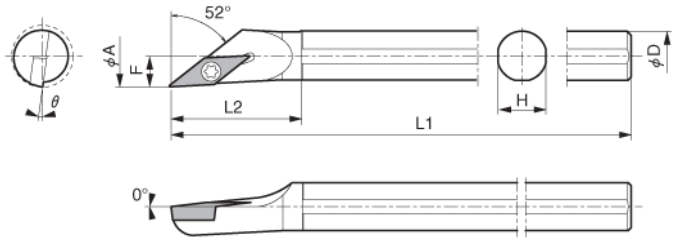
Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	L4	L5	F	S	θ	Std. Corner-R	Coolant Hole	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A08M-SVUC□1.5AE	●	●	inch	0.630	0.500	0.461	6	1.004	0.906	-	0.453	0.217	8°	1/64	Yes	Fig.1	SB-2050TR	FT-6
	A10R-SVUB□2AE	●	●		0.790	0.625	0.586	8	1.280	1.063	-	0.630	0.315	8°	1/64	Yes	Fig.1	SB-2570TR	FT-8
	A12M-SVUC□08-16AE	○	○	mm	16	12	11	150	25.5	23	-	11.5	5.5	8°	0.4	Yes	Fig.1	SB-2050TR	FT-6
	A16Q-SVUB□11-20AE	○	○		20	16	15	180	32.5	27	-	16.0	8.0	8°	0.4	Yes	Fig.1	SB-2570TR	FT-8
	A08M-SVZC□1.5AE	●	●	inch	0.630	0.500	0.461	6	1.299	0.579	-	0.453	0.217	8°	1/64	Yes	Fig.1	SB-2050TR	FT-6
	A10R-SVZB□2AE	●			0.790	0.625	0.586	8	1.673	0.799	-	0.630	0.315	8°	1/64	Yes	Fig.1	SB-2570TR	FT-8
Steel Bar	S12M-SVUC□08-16A	○	○	mm	16	12	11	150	25.5	23	-	11.5	5.5	8°	0.4	No	Fig.2	SB-2050TR	FT-6
	S16Q-SVUB□11-20A	○	○		20	16	15	180	32.5	27	-	16.0	8.0	8°	0.4	No	Fig.2	SB-2570TR	FT-8
Carbide	E12Q-SVUC□08-18A	○			18	12	11	180	23.0	22	-	11.5	5.5	8°	0.4	Yes	Fig.3	SB-2050TR	FT-6
	E16X-SVUB□11-25A	○			25	16	15	220	28.0	27	-	16.0	8.0	8°	0.4	Yes	Fig.3	SB-2570TR	FT-8
Excellent Bar	A12M-SVZC□08-16AE	○	○		16	12	11	150	25.5	14	7.5	11.5	5.5	8°	0.4	Yes	Fig.4	SB-2050TR	FT-6
	A16Q-SVZB□11-20AE	○	○		20	16	15	180	32.5	20	10.0	16.0	8.0	8°	0.4	Yes	Fig.4	SB-2570TR	FT-8
Steel	S12M-SVZC□08-16A	○	○		16	12	11	150	25.5	14	7.5	11.5	5.5	8°	0.4	No	Fig.5	SB-2050TR	FT-6
	S16Q-SVZB□11-20A	○	○		20	16	15	180	32.5	20	10.0	16.0	8.0	8°	0.4	No	Fig.5	SB-2570TR	FT-8

S-SVJB Steel Bar (Internal Spherical Machining / Internal Facing)

(Max. Overhang Length **L/D=~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	L3	F	S	θ	Std. Corner-R	Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Wrench
Steel	S08M-SVJB□2	●	●	inch	0.620	0.500	0.480	6.00	1.25	-	0.310	-	8°	1/64	No	SB-2570TR	FT-8
	S10X-SVJB□2	●	●		0.780	0.625	0.584	7.00	1.44	-	0.390	-	8°				

Applicable Inserts

Application	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Non-ferrous Metals	Hard Materials
Ref. Page	B28, B30	B28, B30	B28	B28, B30	B29	B28	B29	C16	C7
Shape / Toolholder	VF	PP	GP	HQ	□-F	□-FSF	□-Y	PCD	CBN
...-SVUC□1.5AE... ...-SVUC□08-...	VCMT1515..	VCMT1515..	-	VCMT1515..	-	-	-	VCMT1515..	VCGW1515..
...-SVUB□2AE... ...-SVUB□11-...	VBMT22..	VBMT22..	VBMT22..	VBMT22..	VB_T22..	VBET22..	VBGT22..	VBMT22..	VBGW22..
...-SVZC□1.5AE... ...-SVZC□08-...	VCMT1515..	VCMT1515..	-	VCMT1515..	-	-	-	VCMT1515..	VCGW1515..
...-SVZB□2AE... ...-SVZB□11-...	VBMT22..	VBMT22..	VBMT22..	VBMT22..	VB_T22..	VBET22..	VBGT22..	VBMT22..	VBGW22..
...-SVJB□2	VBMT22..	VBMT22..	VBMT22..	VBMT22..	VB_T22..	VBET22..	VBGT22..	VBMT22..	VBGW22..

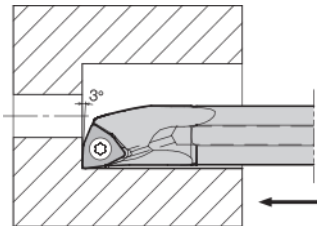
Recommended Cutting Conditions ➡ F71~ ➡ F72

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

S/A-SWUB(P)-AE Excellent Bar (Boring)

(Max. Overhang Length **L/D=~5.5**)



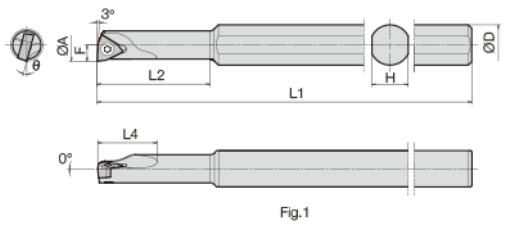
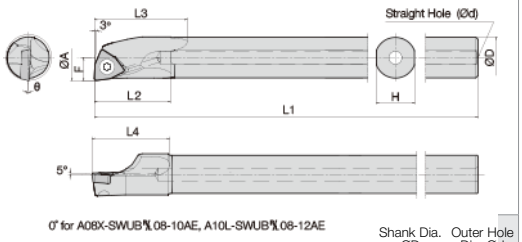


Fig.1



0° for A08X-SWUB□08-10AE, A10L-SWUB□08-12AE

Fig.2

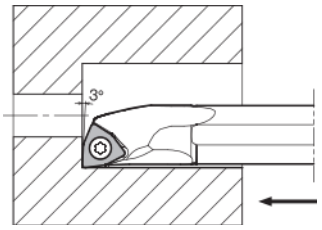
Shank Dia. ØD	Outer Hole Dia. Ød
Ø8	Ø2.5
Ø10	Ø3.0
Ø12	Ø4.0
Ø16	Ø5.0

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S/A-SWUB(P)-A Steel Bar (Boring)

(Max. Overhang Length **L/D=~4**)



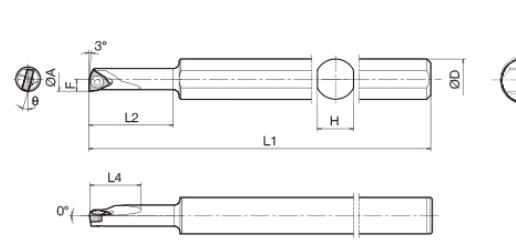
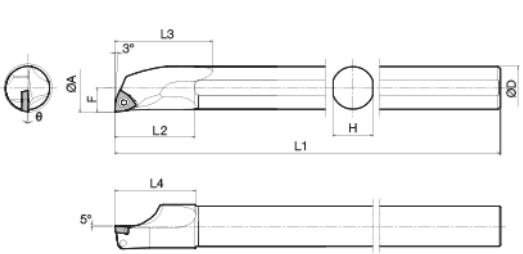


Fig.3



0° for S08X-SWUB□08-10A, S10L-SWUB□08-12A

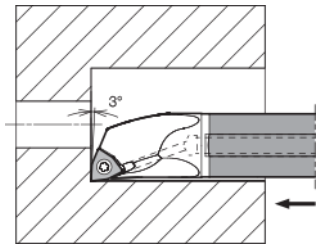
Fig.4

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

E(C)-SWUB(P)-A Carbide Shank Bar (Boring)

(Max. Overhang Length **L/D=~7**)



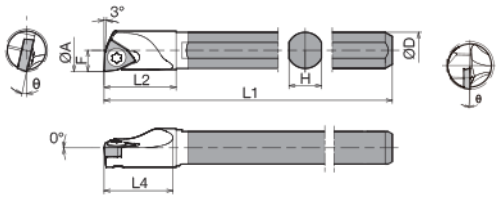
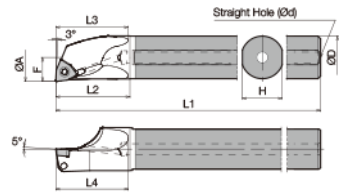


Fig.5



0° for E08L-SWUB□08-10A, E10N-SWUB□08-12A, E10N-SWUB□08-12A-2/3, E10N-SWUB□08-12A-1/2

Fig.6

Shank Dia. ØD	Outer Hole Dia. Ød
Ø5	-
Ø6	-
Ø7	-
Ø8	Ø3
Ø10	Ø3
Ø12	Ø4
Ø16	Ø4

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	L3	L4	F	θ	Std. Corner-R	Coolant Hole	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	S06H-SWUB□1.2AE	●	●	inch	0.240	0.375	0.336	4	0.827	-	0.504	0.118	15.0°	0.01	No	Fig.1	SB-2035TR	FT-6
	S06H-SWUB□1.5AE	●	●		0.312	0.375	0.336	4	1.102	-	0.583	0.157	15.0°	0.01	No	Fig.1		
	A06M-SWUB□1.5AE	●	●		0.472	0.375	0.336	6	0.787	0.945	0.795	0.236	10.0°	0.01	Yes	Fig.2	SB-2050TR	
	A08M-SWUP□2AE	●	●		0.630	0.500	0.461	6	0.945	1.220	0.957	0.276	4.0°	1/64	Yes	Fig.2	SB-2545TR	FT-8
	A10R-SWUP□3AE	●	●		0.770	0.625	0.586	8	1.181	1.433	1.193	0.354	3.5°	1/32	Yes	Fig.2	SB-4065TR	FT-15
	S10H-SWUB□06-06AE	○	○	mm	6	10	9.0	100	21	-	13	3.0	15.0°	0.2	No	Fig.1	SB-2035TR	FT-6
	S10H-SWUB□06-07AE	○	○		7	10	9.0	100	25	-	15	3.5	13.0°	0.2	No	Fig.1		
	S10H-SWUB□08-08AE	○	○		8	10	9.0	100	28	-	15	4.0	15.0°	0.2	No	Fig.1		
	A08X-SWUB□08-10AE	○	○		10	8	7.0	120	16	21	16	5.0	13.0°	0.2	Yes	Fig.2	SB-2050TR	
	A10L-SWUB□08-12AE	○	○		12	10	9.0	140	20	25	20	6.0	10.0°	0.2	Yes	Fig.2		
	A12M-SWUP□11-14AE	○	○		14	12	11.0	150	24	30	24	7.0	4.0°	0.4	Yes	Fig.2	SB-2545TR	FT-8
	A16Q-SWUP□11-18AE	○	○		18	16	15.0	180	30	37	30	9.0	1.0°	0.4	Yes	Fig.2		
	A16Q-SWUP□16-18AE	○	○		18	16	15.0	180	30	37	30	9.0	3.5°	0.8	Yes	Fig.2	SB-4065TR	FT-15
Steel	S10H-SWUB□06-06A	○	○	mm	6	10	9.0	100	21	-	13	3.0	15.0°	0.2	No	Fig.3	SB-2035TR	FT-6
	S10H-SWUB□06-07A	○	○		7	10	9.0	100	25	-	15	3.5	13.0°	0.2	No	Fig.3		
	S10H-SWUB□08-08A	○	○		8	10	9.0	100	28	-	15	4.0	15.0°	0.2	No	Fig.3		
	S08X-SWUB□08-10A	○	○		10	8	7.0	120	16	21	16	5.0	13.0°	0.2	No	Fig.4	SB-2050TR	
	S10L-SWUB□08-12A	○	○		12	10	9.0	140	20	25	20	6.0	10.0°	0.2	No	Fig.4		
	S12M-SWUP□11-14A	○	○		14	12	11.0	150	24	30	24	7.0	4.0°	0.4	No	Fig.4	SB-2545TR	FT-8
	S16Q-SWUP□11-18A	○	○		18	16	15.0	180	30	37	30	9.0	1.0°	0.4	No	Fig.4		
	S16Q-SWUP□16-18A	○	○		18	16	15.0	180	30	37	30	9.0	3.5°	0.8	No	Fig.4	SB-4065TR	FT-15
Carbide	C05H-SWUB□06-06A	○	○	mm	6	5	4.4	100	11	-	11	3.0	13.0°	0.2	No	Fig.5	SB-2035TR	FT-6
	C06J-SWUB□06-07A	○	○		7	6	5.4	110	12	-	12	3.5	13.0°	0.2	No	Fig.5		
	C07K-SWUB□08-08A	○	○		8	7	6.4	125	13	-	13	4.0	13.0°	0.2	No	Fig.5		
	E08L-SWUB□08-10A	○	○		10	8	7.0	140	16	15	15	5.0	13.0°	0.2	Yes	Fig.6	SB-2050TR	
	E10N-SWUB□08-12A	○	○		12	10	9.0	160	20	19	19	6.0	10.0°	0.2	Yes	Fig.6		
	E10N-SWUB□08-12A-2/3	○			12	10	9.0	105	20	19	19	6.0	10.0°	0.2	Yes	Fig.6		
	E10N-SWUB□08-12A-1/2	○			12	10	9.0	80	20	19	19	6.0	10.0°	0.2	Yes	Fig.6		
	E12Q-SWUP□11-14A	○	○		14	12	11.0	180	23	22	22	7.0	4.0°	0.4	Yes	Fig.6	SB-2545TR	FT-8
	E12Q-SWUP□11-14A-2/3	○			14	12	11.0	120	23	22	22	7.0	4.0°	0.4	Yes	Fig.6		
	E12Q-SWUP□11-14A-1/2	○			14	12	11.0	90	23	22	22	7.0	4.0°	0.4	Yes	Fig.6		
	E16X-SWUP□11-18A	○	○		18	16	15.0	220	28	27	27	9.0	1.0°	0.4	Yes	Fig.6		
	E16X-SWUP□11-18A-2/3	○			18	16	15.0	145	28	27	27	9.0	1.0°	0.4	Yes	Fig.6		
	E16X-SWUP□11-18A-1/2	○			18	16	15.0	110	28	27	27	9.0	1.0°	0.4	Yes	Fig.6		
	E16X-SWUP□16-18A	○	○		18	16	15.0	220	28	27	27	9.0	3.5°	0.8	Yes	Fig.6	SB-4065TR	FT-15
	E16X-SWUP□16-18A-2/3	○			18	16	15.0	145	28	27	27	9.0	3.5°	0.8	Yes	Fig.6		
	E16X-SWUP□16-18A-1/2	○			18	16	15.0	110	28	27	27	9.0	3.5°	0.8	Yes	Fig.6		

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. Page	B33	B34	B33	B34	B33	B34	B34	C16, C17	C8
Shape / Toolholder	CF	GP	□-DP	HQ	□-F	□-Y	Without Chipbreaker	PCD	CBN
...-SWUB□1.2AE... ...-SWUB□06-...	WBGT121..	-	WBMT121..	-	WB_T121..	-	WBGW121..	WBMT121..	WBGW121..
...-SWUB□1.5AE... ...-SWUB□08-...	-	-	WBMT1515..	-	WB_T1515..	-	WBGW1515..	WBMT1515..	WBGW1515..
...-SWUP□2AE... ...-SWUP□11-...	-	WPMT215..	-	WPMT215..	-	WPGT215..	WPGW215..	WPMT215..	-
...-SWUP□3AE... ...-SWUP□16-...	-	WPMT32..	-	WPMT32..	-	WPGT32..	WPGW32..	-	-

Recommended Cutting Conditions → F71~ → F72

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○ : World Express (Shipping: 7-10 Business Days)

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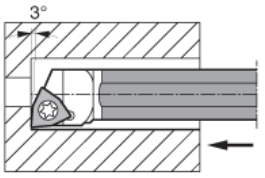
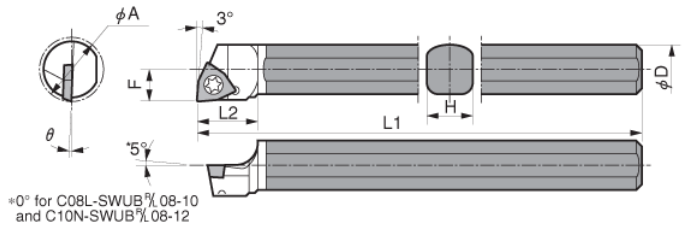
C-SWUB Carbide Shank Bar (Boring)

(Max. Overhang Length **L/D=~7**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	F	S	θ	Std. Corner-R	Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Wrench
Carbide	**C0325K-SWUB□1.2**	●	●	inch	0.240	0.203	0.180	5.00	0.50	0.118	15°	1/64	1/64	No	SB-2040TR	FT-6
Carbide	**C045K-SWUB□1.5**	●	●	inch	0.312	0.281	0.252	5.00	0.55	0.157	15°	1/64	1/64	No	SB-2050TR	FT-6

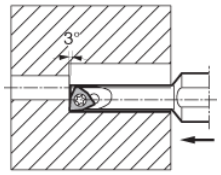
Applicable Inserts

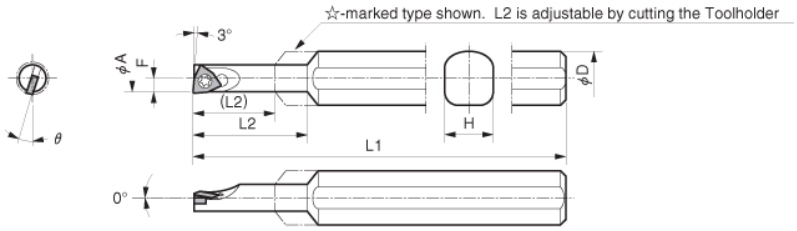
Application	Minute D.O.C.	Finishing	Finishing	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. Page	B33	B33	B33	B34	C16, C17	C8
Shape / Toolholder	CF	□-DP	□-F	Without Chipbreaker	PCD	CBN
...-SWUB□1.2	WBGT121..	WBMT121..	WB_T121..	WBGW121..	WBMT121..	WBGW121..
...-SWUB□1.5	-	WBMT1515..	WB_T1515..	WBGW1515..	WBMT1515..	WBGW1515..

Recommended Cutting Conditions **F71~ F72**

S-SWUB Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D=~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	F	θ	Std. Corner-R	Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Wrench
Steel	**S06H-SWUBR1.2**	●	●	inch	0.240	0.375	0.356	4.00	0.825	0.115	15°	0.004	No	SB-2040TR	FT-6
Steel	**S06X-SWUBR1.5**	●	●	inch	0.312	0.375	0.356	4.33	1.102	0.156	15°	1/64	No	SB-2050TR	FT-6

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. Page	B33	B33	B33	B34	C16, C17	C8
Shape / Toolholder	CF	R-DP	R-F	Without Chipbreaker	PCD	CBN
...-SWUBR1.2	WBGT121..	WBMT121..	WB_T121..	WBGW121..	WBMT121..	WBGW121..
...-SWUBR1.5	-	WBMT1515..	WB_T1515..	WBGW1515..	WBMT1515..	WBGW1515..

Recommended Cutting Conditions **F71~ F72**

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

EZH Sleeves EZ Bar Sleeves (Listed by Sleeve Shank Dia.)

Sleeve Part Number				EZ Bar Part Number					Applicable Machine Manufacturer
EZH-CT (With coolant hole and EZ Adjust Structure)	EZH-HP (Adjustable)	EZH-ST	Sleeve Shank Dia ØD1 (mm)	EZB	EZG EZFG EZT EZVB	EZ Bar Plus	HP	Shank Dia ØD1 (mm)	
-	-	EZH 01712ST-80	12.00	EZBR ...017...	-	-	-	1.7	General Machines
		02012ST-80		EZBR ...020...			HPB®L 0202-...	2.0	
		02512ST-80		EZBR ...025...	EZ-- ...025-...		-	2.5	
		03012ST-80		EZBR ...030...	EZ-- ...030-...		HPB®L 0303-...	3.0	
		03512ST-80		EZBR ...035...	EZ-- ...035-...		-	3.5	
		04012ST-80		EZBR ...040...	EZ-- ...040-...		HP-- ...04-...	4.0	
		05012ST-80		EZBR ...050...	EZ-- ...050-...		HP-- ...05-...	5.0	
		06012ST-80		EZBR ...060...	EZ-- ...060-...		HP-- 0606-...	6.0	
		07012ST-80		EZBR ...070...	EZ-- ...070-...		HP-- ...07-...	7.0	
-	EZH 01716HP-100	EZH 01716ST-100	16.00	EZBR ...017...	-	-	-	1.7	General Machines
	02016HP-100	02016ST-100		EZBR ...020...			HPB®L 0202-...	2.0	
	02516HP-100	02516ST-100		EZBR ...025...	EZ-- ...025-...		-	2.5	
	03016HP-100	03016ST-100		EZBR ...030...	EZ-- ...030-...		HPB®L 0303-...	3.0	
	03516HP-100	03516ST-100		EZBR ...035...	EZ-- ...035-...		-	3.5	
	04016HP-100	04016ST-100		EZBR ...040...	EZ-- ...040-...		HP-- ...04-...	4.0	
	04516HP-100	-		-	-	-045X- ...-050EZ	-	4.5	
	05016HP-100	05016ST-100		EZBR ...050...	EZ-- ...050-...	-	HP-- ...05-...	5.0	
	06016HP-100	06016ST-100		EZBR ...060...	EZ-- ...060-...	-060X- ...-070EZ	HP-- 0606-...	6.0	
	07016HP-100	07016ST-100		EZBR ...070...	EZ-- ...070-...	-	HP-- ...07-...	7.0	
EZH 01719CT-120	EZH 01719HP-120	EZH 01719ST-120	19.05	EZBR ...017...	-	-	-	1.7	CITIZEN MACHINERY MIYANO CO., LTD.
02019CT-120	02019HP-120	02019ST-120		EZBR ...020...			HPB®L 0202-...	2.0	
02519CT-120	02519HP-120	02519ST-120		EZBR ...025...	EZ-- ...025-...		-	2.5	
03019CT-120	03019HP-120	03019ST-120		EZBR ...030...	EZ-- ...030-...		HPB®L 0303-...	3.0	
03519CT-120	03519HP-120	03519ST-120		EZBR ...035...	EZ-- ...035-...		-	3.5	
04019CT-120	04019HP-120	04019ST-120		EZBR ...040...	EZ-- ...040-...		HP-- ...04-...	4.0	
-	04519HP-120	-		-	-	-045X- ...-050EZ	-	4.5	
05019CT-120	05019HP-120	05019ST-120		EZBR ...050...	EZ-- ...050-...	-	HP-- ...05-...	5.0	
06019CT-120	06019HP-120	06019ST-120		EZBR ...060...	EZ-- ...060-...	-060X- ...-070EZ	HP-- 0606-...	6.0	
07019CT-120	07019HP-120	07019ST-120		EZBR ...070...	EZ-- ...070-...	-	HP-- ...07-...	7.0	
EZH 01720CT-120	EZH 01720HP-120	EZH 01720ST-120	20.00	EZBR ...017...	-	-	-	1.7	AMADA MACHINE TOOLS CO.,LTD. EGURO.LTD TSUGAMI CORPORATION CITIZEN MACHINERY MIYANO CO., LTD. General Machines
02020CT-120	02020HP-120	02020ST-120		EZBR ...020...			HPB®L 0202-...	2.0	
02520CT-120	02520HP-120	02520ST-120		EZBR ...025...	EZ-- ...025-...		-	2.5	
03020CT-120	03020HP-120	03020ST-120		EZBR ...030...	EZ-- ...030-...		HPB®L 0303-...	3.0	
03520CT-120	03520HP-120	03520ST-120		EZBR ...035...	EZ-- ...035-...		-	3.5	
04020CT-120	04020HP-120	04020ST-120		EZBR ...040...	EZ-- ...040-...		HP-- ...04-...	4.0	
-	04520HP-120	-		-	-	-045X- ...-050EZ	-	4.5	
05020CT-120	05020HP-120	05020ST-120		EZBR ...050...	EZ-- ...050-...	-	HP-- ...05-...	5.0	
06020CT-120	06020HP-120	06020ST-120		EZBR ...060...	EZ-- ...060-...	-060X- ...-070EZ	HP-- 0606-...	6.0	
07020CT-120	07020HP-120	07020ST-120		EZBR ...070...	EZ-- ...070-...	-	HP-- ...07-...	7.0	
EZH 01722CT-135	EZH 01722HP-135	EZH 01722ST-135	22.00	EZBR ...017...	-	-	-	1.7	STAR MICRONICS CO., LTD. Nomura VTC Automatic Lathe Co., Ltd. TSUGAMI CORPORATION
02022CT-135	02022HP-135	02022ST-135		EZBR ...020...			HPB®L 0202-...	2.0	
02522CT-135	02522HP-135	02522ST-135		EZBR ...025...	EZ-- ...025-...		-	2.5	
03022CT-135	03022HP-135	03022ST-135		EZBR ...030...	EZ-- ...030-...		HPB®L 0303-...	3.0	
03522CT-135	03522HP-135	03522ST-135		EZBR ...035...	EZ-- ...035-...		-	3.5	
04022CT-135	04022HP-135	04022ST-135		EZBR ...040...	EZ-- ...040-...		HP-- ...04-...	4.0	
-	04522HP-135	-		-	-	-045X- ...-050EZ	-	4.5	
05022CT-135	05022HP-135	05022ST-135		EZBR ...050...	EZ-- ...050-...	-	HP-- ...05-...	5.0	
06022CT-135	06022HP-135	06022ST-135		EZBR ...060...	EZ-- ...060-...	-060X- ...-070EZ	HP-- 0606-...	6.0	
07022CT-135	07022HP-135	07022ST-135		EZBR ...070...	EZ-- ...070-...	-	HP-- ...07-...	7.0	
EZH 01725.0CT-135	EZH 01725.0HP-135	EZH 01725.0ST-135	25.00	EZBR ...017...	-	-	-	1.7	AMADA MACHINE TOOLS CO.,LTD. EGURO.LTD TSUGAMI CORPORATION CITIZEN MACHINERY MIYANO CO., LTD. General Machines
02025.0CT-135	02025.0HP-135	02025.0ST-135		EZBR ...020...			HPB®L 0202-...	2.0	
02525.0CT-135	02525.0HP-135	02525.0ST-135		EZBR ...025...	EZ-- ...025-...		-	2.5	
03025.0CT-135	03025.0HP-135	03025.0ST-135		EZBR ...030...	EZ-- ...030-...		HPB®L 0303-...	3.0	
03525.0CT-135	03525.0HP-135	03525.0ST-135		EZBR ...035...	EZ-- ...035-...		-	3.5	
04025.0CT-135	04025.0HP-135	04025.0ST-135		EZBR ...040...	EZ-- ...040-...		HP-- ...04-...	4.0	
-	04525.0HP-135	-		-	-	-045X- ...-050EZ	-	4.5	
05025.0CT-135	05025.0HP-135	05025.0ST-135		EZBR ...050...	EZ-- ...050-...	-	HP-- ...05-...	5.0	
06025.0CT-135	06025.0HP-135	06025.0ST-135		EZBR ...060...	EZ-- ...060-...	-060X- ...-070EZ	HP-- 0606-...	6.0	
07025.0CT-135	07025.0HP-135	07025.0ST-135		EZBR ...070...	EZ-- ...070-...	-	HP-- ...07-...	7.0	
EZH 01725.4CT-120	EZH 01725.4HP-120	EZH 01725.4ST-120	25.40	EZBR ...017...	-	-	-	1.7	CITIZEN MACHINERY MIYANO CO., LTD.
02025.4CT-120	02025.4HP-120	02025.4ST-120		EZBR ...020...			HPB®L 0202-...	2.0	
02525.4CT-120	02525.4HP-120	02525.4ST-120		EZBR ...025...	EZ-- ...025-...		-	2.5	
03025.4CT-120	03025.4HP-120	03025.4ST-120		EZBR ...030...	EZ-- ...030-...		HPB®L 0303-...	3.0	
03525.4CT-120	03525.4HP-120	03525.4ST-120		EZBR ...035...	EZ-- ...035-...		-	3.5	
04025.4CT-120	04025.4HP-120	04025.4ST-120		EZBR ...040...	EZ-- ...040-...		HP-- ...04-...	4.0	
-	04525.0HP-135	-		-	-	-045X- ...-050EZ	-	4.5	
05025.4CT-120	05025.4HP-120	05025.4ST-120		EZBR ...050...	EZ-- ...050-...	-	HP-- ...05-...	5.0	
06025.4CT-120	06025.4HP-120	06025.4ST-120		EZBR ...060...	EZ-- ...060-...	-060X- ...-070EZ	HP-- 0606-...	6.0	
07025.4CT-120	07025.4HP-120	07025.4ST-120		EZBR ...070...	EZ-- ...070-...	-	HP-- ...07-...	7.0	

- Choose sleeves (Ød1) to meet with ØD dimension of bar.
- Adjustment pin cannot be installed in EZH-ST sleeves. To adjust overhang of EZB insert, please use EZH-CT or EZH-HP sleeves.
- Machine manufacturers in random order.

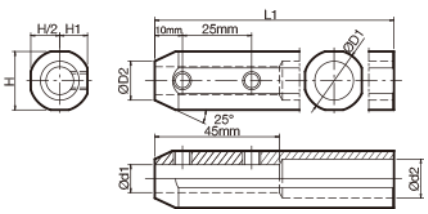
EZH Sleeves and Compatible Bars (Listed by Sleeve Shank Dia.)

Shank Size (Hole Dia. : mm)		017 (1.7mm)	020 (2.0mm)	025 (2.5mm)	03 (3.0mm)	035 (3.5mm)
EZH-CT (With coolant hole and EZ Adjust Structure) Sleeve Part Numbers		EZH 01719CT-120 01720CT-120 01722CT-135 01725.0CT-135 01725.4CT-120	EZH 02019CT-120 02020CT-120 02022CT-135 02025.0CT-135 02025.4CT-120	EZH 02519CT-120 02520CT-120 02522CT-135 02525.0CT-135 02525.4CT-120	EZH 03019CT-120 03020CT-120 03022CT-135 03025.0CT-135 03025.4CT-120	EZH 03519CT-120 03520CT-120 03522CT-135 03525.0CT-135 03525.4CT-120
EZH-HP (Adjustable) Sleeve Part Numbers		EZH 01716HP-100 01719HP-120 01720HP-120 01722HP-135 01725.0HP-135 01725.4HP-120	EZH 02016HP-100 02019HP-120 02020HP-120 02022HP-135 02025.0HP-135 02025.4HP-120	EZH 02516HP-100 02519HP-120 02520HP-120 02522HP-135 02525.0HP-135 02525.4HP-120	EZH 03016HP-100 03019HP-120 03020HP-120 03022HP-135 03025.0HP-135 03025.4HP-120	EZH 03516HP-100 03519HP-120 03520HP-120 03522HP-135 03525.0HP-135 03525.4HP-120
EZH-ST Sleeve Part Numbers		EZH 01712ST-80 01716ST-100 01719ST-120 01720ST-120 01722ST-135 01725.0ST-135 01725.4ST-120	EZH 02012ST-80 02016ST-100 02019ST-120 02020ST-120 02022ST-135 02025.0ST-135 02025.4ST-120	EZH 02512ST-80 02516ST-100 02519ST-120 02520ST-120 02522ST-135 02525.0ST-135 02525.4ST-120	EZH 03012ST-80 03016ST-100 03019ST-120 03020ST-120 03022ST-135 03025.0ST-135 03025.4ST-120	EZH 03512ST-80 03516ST-100 03519ST-120 03520ST-120 03522ST-135 03525.0ST-135 03525.4ST-120
EZ Bar	Boring	EZBR 020017ST- EZBR 020017-...NB	EZBR 020020HP- EZBR 025020ST- EZBR 025020-...NB	EZBR 025025HP- EZBR 030025ST- EZBR 030025-...NB	EZBR 030030HP- EZBR 035030ST- EZBR ...030-...NB EZVBR 035030-	EZBR 035035HP- EZBR 040035ST- EZBR 040035-...NB
	Internal Grooving				EZGR 030030-	
	Face Grooving					
	Internal Threading			EZTR 030025-	EZTR 035030-	EZTR 040035-
EZ Bar - Plus						
2-edge Micro-Bar	Boring Bar		HPB® 0202-		HPB® 0303-	
	Internal Grooving					
	Face Grooving					
	Internal Threading					
Boring Bars						

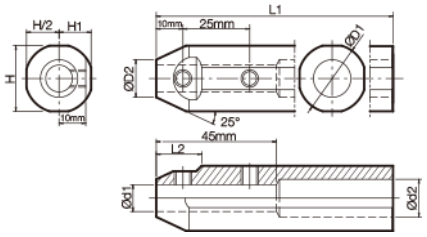
Shank Size (Hole Dia. : mm)		04 (4.0mm)	045 (4.5mm)	05 (5.0mm)	06 (6.0mm)	07 (7.0mm)
EZH-CT (With coolant hole and EZ Adjust Structure) Sleeve Part Numbers		EZH 04019CT-120 04020CT-120 04022CT-135 04025.0CT-135 04025.4CT-120		EZH 05019CT-120 05020CT-120 05022CT-135 05025.0CT-135 05025.4CT-120	EZH 06019CT-120 06020CT-120 06022CT-135 06025.0CT-135 06025.4CT-120	EZH 07019CT-120 07020CT-120 07022CT-135 07025.0CT-135 07025.4CT-120
EZH-HP (Adjustable) Sleeve Part Numbers		EZH 04016HP-100 04019HP-120 04020HP-120 04022HP-135 04025.0HP-135 04025.4HP-120	EZH 04516HP-100 04519HP-120 04520HP-120 04522HP-135 04525.0HP-135 04525.4HP-120	EZH 05016HP-100 05019HP-120 05020HP-120 05022HP-135 05025.0HP-135 05025.4HP-120	EZH 06016HP-100 06019HP-120 06020HP-120 06022HP-135 06025.0HP-135 06025.4HP-120	EZH 07016HP-100 07019HP-120 07020HP-120 07022HP-135 07025.0HP-135 07025.4HP-120
EZH-ST Sleeve Part Numbers		EZH 04012ST-80 04016ST-100 04019ST-120 04020ST-120 04022ST-135 04025.0ST-135 04025.4ST-120		EZH 05012ST-80 05016ST-100 05019ST-120 05020ST-120 05022ST-135 05025.0ST-135 05025.4ST-120	EZH 06012ST-80 06016ST-100 06019ST-120 06020ST-120 06022ST-135 06025.0ST-135 06025.4ST-120	EZH 07012ST-80 07016ST-100 07019ST-120 07020ST-120 07022ST-135 07025.0ST-135 07025.4ST-120
EZ Bar	Boring	EZBR 040040HP- EZBR 045040ST- EZBR ...040-...NB EZVBR 045040-		EZBR 050050HP- EZBR 055050ST- EZBR ...050-...NB EZVBR 055050-	EZBR 060060HP- EZBR 065060ST- EZBR ...060-...NB EZVBR 065060-...	EZBR 075070ST- EZBR ...070-...NB
	Internal Grooving	EZGR 040040-		EZGR 050050-	EZGR 060060-	EZGR ...070-...
	Face Grooving	EZFGR 050040-		EZFGR 060050-		EZFGR 080070-
	Internal Threading	EZTR 050040-		EZTR 060050-	EZTR 070060-	EZTR 080070-
EZ Bar - Plus			S045X- SCLCR03-050EZ C045X- SCLCR03-050EZ		S060X- SCLCR04-070EZ C060X- SCLCR04-070EZ	
Double-Sided Micro-Bar	Boring Bar	HPB® 0404- HPBT® 0404-		HPB® 0505- HPBT® 0505-	HPB® 0606-	HPB® 0707-
	Internal Grooving	HPG® 0404-		HPG® 0505-	HPG® 0606-	HPG® 0707-
	Face Grooving					HPFG® 0807-
	Internal Threading	HPT® 04504-		HPT® 06005-		HPT® 07507-
Boring Bar		C04-		C05-	C06- S06-	C07- ....

Note 1) When attaching Double-Sided Micro Bar to EZH-HP Sleeve (Adjustable overhang length), detach Adjustable Pin. Overhang length is NOT adjustable.
2) PSH Sleeves will be switched to EZH Sleeves.

SHA Sleeves



Holder Installation Side **Fig.1**



Holder Installation Side **Fig.2**

Part Number	Stock	Dimensions (mm)								Shape	Spare Parts		Applicable Machine Manufacturer
		Ød1	ØD1	ØD2	Ød2	H	H1	L1	L2		Screw	Wrench	
SHA 0820-120	○	8	20.00	14	12	19.0	9.25	120	-	Fig.1	HS6x4P	LW-3	AMADA MACHINE TOOLS CO.,LTD. EGURO.LTD CITIZEN MACHINERY MIYANO CO., LTD. TSUGAMI CORPORATION
1020-120	○	10	20.00	14	12	19.0	9.25	120	-	Fig.1			
SHA 0825.0-135	○	8	25.00	14	14	24.0	11.5	135	17	Fig.2			
1025.0-135	○	10	25.00	14	14	24.0	11.5	135	17	Fig.2			
1225.0-135	○	12	25.00	16	14	24.0	11.5	135	17	Fig.2			
SHA 0819-120	○	8	19.05	14	12	18.0	8.75	120	-	Fig.1	HS6x4P	LW-3	CITIZEN MACHINERY MIYANO CO., LTD.
1019-120	○	10	19.05	14	12	18.0	8.75	120	-	Fig.1			
SHA 0820-120	○	8	20.00	14	12	19.0	9.25	120	-	Fig.1			
1020-120	○	10	20.00	14	12	19.0	9.25	120	-	Fig.1			
SHA 0825.4-120	○	8	25.40	14	14	24.4	12.0	120	17	Fig.2			
1025.4-120	○	10	25.40	14	14	24.4	12.0	120	17	Fig.2			
1225.4-120	○	12	25.40	16	14	24.4	12.0	120	17	Fig.2			
SHA 0822-125	○	8	22.00	14	14	21.0	10.0	125	-	Fig.1	HS6x4P	LW-3	STAR MICRONICS CO., LTD. Nomura VTC Automatic Lathe Co., Ltd.
1022-125	○	10	22.00	14	14	21.0	10.0	125	-	Fig.1			
1222-125	○	12	22.00	16	14	21.0	10.0	125	-	Fig.1			
SHA 0823-120	○	8	23.00	14	14	22.0	10.5	120	16	Fig.2	HS6x4P	LW-3	Nomura VTC Automatic Lathe Co., Ltd.
1023-120	○	10	23.00	14	14	22.0	10.5	120	16	Fig.2			
1223-120	○	12	23.00	16	14	22.0	10.5	120	16	Fig.2			

※ : Length of Ød1…45mm (All SHA sleeves)

- Choose sleeves (Ød1) to meet with ØD dimension of toolholder.
- Machine manufacturers are in random order.

SHA Sleeves and Applicable Toolholders (Listed by Shank Dia.)

Shank Size (Hole Dia. : mm)	08 (8mm)	10 (10mm)	12 (12mm)
SHA Sleeve Part Numbers	SHA0819-120	SHA1019-120	
	SHA0820-120	SHA1020-120	
	SHA0822-125	SHA1022-125	SHA1222-125
	SHA0823-120	SHA1023-120	SHA1223-120
	SHA0825.0-135	SHA1025.0-135	SHA1225.0-135
	SHA0825.4-120	SHA1025.4-120	SHA1225.4-120
Boring Bars Part Numbers	A08-….	A10-….	A12-….
	C08-….	C10-….	C12-….
	E08-….	E10-….	E12-….
	S08-….	S10-….	S12-….
Internal Grooving Toolholder Part Numbers	SIGER 0808A-EH	SIGER 1010B-EH	SIGER 1412C-EH
		SIGER 1210B-EH	SIGER 1612C-EH
	SIGER 0808A-WH	SIGER 1010B-WH	SIGER 1412C-WH
		SIGER 1210B-WH	SIGER 1612C-WH
	SIGER1008B-WH-90	SIGER1210B-WH-90	SIGER1412C-WH-90

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Recommended Cutting Conditions - Boring (Positive Insert)

[D.O.C. Indicates Radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Application	Recommended Chipbreaker	Recommended Grade	Corner-R (rε)	Lower Limit - **Recommendation** - Upper Limit		
								Vc (sfm)	D.O.C. (in)	Feed Rate f(ipr)
P※	Low-carbon Steel Low-carbon Alloy 1010, 4115, 5115 etc.	HB ≦ 300	Finishing (Solid Type)	Continuous	EZB-F EZB-H	PR1225	0.002	100 - **225** - 350	0.002 - **0.004** - 0.008	0.000 - **0.002** - 0.003
				Interrupted			0.006	100 - **200** - 300	0.002 - **0.004** - 0.008	0.001 - **0.003** - 0.004
			Finishing	Continuous	F	PR1425	0.004	125 - **250** - 400	0.002 - **0.003** - 0.004	0.001 - **0.002** - 0.003
				Interrupted			0.008	125 - **225** - 325	0.002 - **0.004** - 0.006	0.001 - **0.003** - 0.004
			Finishing-Medium	Continuous	CF	PR1425	0.004	125 - **250** - 400	0.002 - **0.006** - 0.010	0.001 - **0.002** - 0.003
				Interrupted			0.008	125 - **225** - 325	0.002 - **0.006** - 0.010	0.001 - **0.003** - 0.004
	Medium-carbon Steel Medium-carbon Alloy 1045, 4137 etc.	HB ≦ 300	Finishing (Solid Type)	Continuous	EZB-F EZB-H	PR1225	0.002	100 - **225** - 350	0.002 - **0.004** - 0.008	0.000 - **0.002** - 0.003
				Interrupted			0.006	100 - **200** - 300	0.002 - **0.004** - 0.008	0.001 - **0.003** - 0.004
			Finishing	Continuous	F	PR1425	0.004	125 - **250** - 400	0.002 - **0.003** - 0.004	0.001 - **0.002** - 0.003
				Interrupted			0.008	125 - **225** - 400	0.002 - **0.004** - 0.006	0.001 - **0.003** - 0.004
			Finishing-Medium	Continuous	CF	PR1425	0.004	125 - **250** - 400	0.002 - **0.006** - 0.010	0.001 - **0.002** - 0.003
				Interrupted			0.008	125 - **225** - 325	0.002 - **0.006** - 0.010	0.001 - **0.003** - 0.004
	High-carbon Alloy D2, H13 etc.	HB ≦ 280	Finishing (Solid Type)	Continuous	EZB-F EZB-H	PR1225	0.002	100 - **225** - 350	0.002 - **0.004** - 0.008	0.000 - **0.002** - 0.003
				Interrupted			0.006	100 - **200** - 300	0.002 - **0.004** - 0.008	0.001 - **0.003** - 0.004
			Finishing	Continuous	F	PR1425	0.004	125 - **250** - 400	0.002 - **0.003** - 0.004	0.001 - **0.002** - 0.003
				Interrupted			0.008	125 - **225** - 325	0.002 - **0.004** - 0.006	0.001 - **0.003** - 0.004
			Finishing-Medium	Continuous	CF	PR1425	0.004	125 - **250** - 400	0.002 - **0.006** - 0.010	0.001 - **0.002** - 0.003
				Interrupted			0.008	125 - **225** - 325	0.002 - **0.006** - 0.010	0.001 - **0.003** - 0.004
M	Stainless Steel 303, 304, 316, 420 etc.	HB ≦ 220	Finishing (Solid Type)	Continuous	EZB-F EZB-H	PR1225	0.002	100 - **200** - 250	0.002 - **0.004** - 0.008	0.000 - **0.001** - 0.002
				Interrupted			0.006	100 - **200** - 250	0.002 - **0.004** - 0.008	0.001 - **0.002** - 0.003
			Finishing	Continuous	F	PR1225	0.004	100 - **200** - 250	0.002 - **0.003** - 0.004	0.001 - **0.002** - 0.003
				Interrupted			0.008	100 - **200** - 250	0.002 - **0.004** - 0.006	0.001 - **0.003** - 0.004
			Finishing-Medium	Continuous	CF	PR1225	0.004	100 - **200** - 250	0.002 - **0.006** - 0.010	0.001 - **0.002** - 0.003
				Interrupted			0.008	100 - **200** - 250	0.002 - **0.006** - 0.010	0.001 - **0.003** - 0.004
	Stainless Steel S17400 etc.	HB ≦ 300	Finishing (Solid Type)	Continuous	EZB-F EZB-H	PR1225	0.002	100 - **200** - 250	0.002 - **0.004** - 0.008	0.000 - **0.001** - 0.002
				Interrupted			0.006	100 - **200** - 250	0.002 - **0.004** - 0.008	0.001 - **0.002** - 0.003
			Finishing	Continuous	F	PR1225	0.004	100 - **200** - 250	0.002 - **0.003** - 0.004	0.001 - **0.002** - 0.003
				Interrupted			0.008	100 - **200** - 250	0.002 - **0.004** - 0.006	0.001 - **0.003** - 0.004
			Finishing-Medium	Continuous	CF	PR1225	0.004	100 - **200** - 250	0.002 - **0.006** - 0.010	0.001 - **0.002** - 0.003
				Interrupted			0.008	100 - **200** - 250	0.002 - **0.006** - 0.010	0.001 - **0.003** - 0.004
K	Gray Cast Iron NO.35 NO.45 NO.50 etc.	HB ≦ 250	Finishing (Solid Type)	Continuous	(VNB) (VNB-NB)	KW10	0.001	100 - **200** - 325	0.002 - **0.003** - 0.004	0.001 - **0.002** - 0.003
				Interrupted			0.008	100 - **200** - 325	0.002 - **0.004** - 0.006	0.001 - **0.003** - 0.004
			Finishing	Continuous	F	KW10	0.004	100 - **200** - 325	0.002 - **0.003** - 0.004	0.001 - **0.002** - 0.003
				Interrupted			0.008	100 - **200** - 250	0.002 - **0.004** - 0.006	0.001 - **0.003** - 0.004
			Finishing-Medium	Continuous	Without Chipbreaker	KW10	0.008	100 - **200** - 325	0.004 - **0.008** - 0.012	0.001 - **0.002** - 0.003
				Interrupted			0.016	100 - **200** - 250	0.004 - **0.008** - 0.012	0.001 - **0.003** - 0.004
	Nodular Cast Iron 65-45-12 80-60-03 etc.	HB ≦ 270	Finishing (Solid Type)	Continuous	(VNB) (VNB-NB)	KW10	0.001	100 - **200** - 250	0.002 - **0.003** - 0.004	0.001 - **0.002** - 0.003
				Interrupted			0.008	100 - **200** - 250	0.002 - **0.004** - 0.006	0.001 - **0.003** - 0.004
			Finishing	Continuous	F, U	KW10	0.004	100 - **200** - 250	0.002 - **0.003** - 0.004	0.001 - **0.002** - 0.003
				Interrupted			0.008	100 - **200** - 250	0.002 - **0.004** - 0.006	0.001 - **0.003** - 0.004
			Finishing-Medium	Continuous	Without Chipbreaker	KW10	0.008	100 - **200** - 325	0.004 - **0.008** - 0.012	0.001 - **0.002** - 0.003
				Interrupted			0.016	100 - **200** - 250	0.004 - **0.008** - 0.012	0.001 - **0.003** - 0.004
N	Non-ferrous Metals Copper Alloy Aluminum Alloy (Si 10% Under) etc.	HB ≦ 100	High Speed Finishing (Rainbow-colored Finish)	Continuous	Without Chipbreaker	KPD001	0.002	500 - **650** - 975	0.002 - **0.004** - 0.012	0.002 - **0.004** - 0.006
			Finishing	Continuous	F, U	KW10	0.004	325 - **500** - 650	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.008
				Interrupted			0.008	325 - **500** - 650	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.008
S	Titanium Alloy Ti-6Al-4V etc.	HB ≦ 400	Precision Finishing (Rainbow-colored Finish)	Continuous	Without Chipbreaker	KW10	0.004	325 - **400** - 500	0.002 - **0.004** - 0.012	0.001 - **0.003** - 0.004
				Interrupted			0.008	225 - **325** - 400	0.002 - **0.004** - 0.012	0.001 - **0.003** - 0.004
			Finishing	Continuous	F, U	KW10	0.004	75 - **125** - 200	0.002 - **0.008** - 0.020	0.001 - **0.004** - 0.008
				Interrupted			0.008	75 - **125** - 200	0.002 - **0.008** - 0.020	0.001 - **0.004** - 0.008
	Heat-resistant Alloys Inconel 625 Inconel 718	HB ≦ 350	Finishing (Solid Type)	Continuous	(VNB)	KW10	0.008	25 - **100** - 175	0.002 - **0.004** - 0.012	0.001 - **0.002** - 0.004
				Interrupted			0.008	25 - **100** - 175	0.002 - **0.004** - 0.012	0.001 - **0.002** - 0.003
			Finishing	Continuous	F, U	KW10	0.008	25 - **100** - 175	0.002 - **0.008** - 0.016	0.001 - **0.002** - 0.004
				Interrupted			0.008	25 - **100** - 175	0.002 - **0.008** - 0.016	0.001 - **0.002** - 0.004
H	Hardened Steel Hard Materials D2, H13 etc.	40 ~ 50 HRC	Finishing	Continuous	(VNB)	PR930	0.008	100 - **175** - 225	0.002 - **0.004** - 0.016	0.000 - **0.001** - 0.002
				Interrupted			0.008	100 - **175** - 225	0.002 - **0.004** - 0.008	0.000 - **0.001** - 0.001
		45 ~ 68 HRC	Finishing	Continuous	ME MES	KBN05M	0.008	200 - **325** - 450	0.002 - **0.004** - 0.008	0.001 - **0.002** - 0.004
				Interrupted			1/64	200 - **250** - 400	0.002 - **0.004** - 0.008	0.001 - **0.002** - 0.004

※ For machining free-cutting steels, use PR1005 at Vc=500sfm or less. For D.O.C. and feed rate (f), refer to specs for low carbon steels.

Recommended Cutting Conditions - Boring (Positive Insert)

[D.O.C. Indicates Radius]

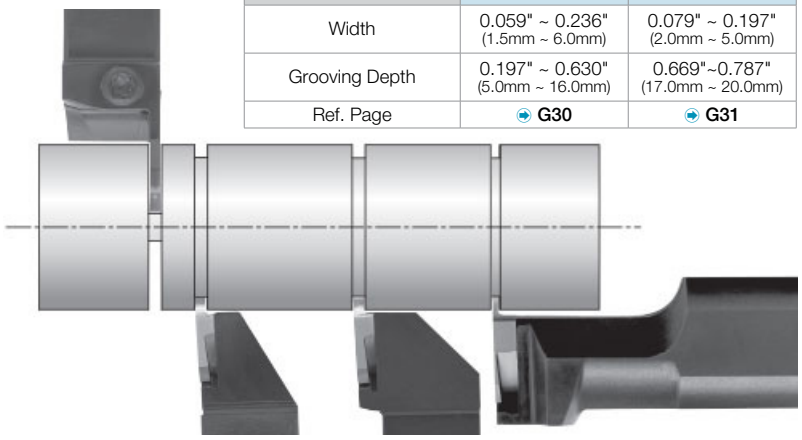
ISO Classification	Workpiece Material	Hardness	Cutting Range	Application	Recommended Chipbreaker	Recommended Grade	Corner-R (re)	Lower Limit - **Recommendation** - Upper Limit		
								Vc (sfm)	D.O.C. (in)	Feed Rate f(ipr)
P※	Low-carbon Steel Low-carbon Alloy 1010, 4115, 5115 etc.	HB ≦ 300	Precision Finishing	Continuous	F, U	TN6020 PR1425	0.004	825 - **975** - 1150	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
				Interrupted			0.008	400 - **550** - 725	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
			Finishing	Continuous	XP	PV7010 CA525	1/64	650 - **825** - 975	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted			1/64	500 - **650** - 825	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing-Medium	Continuous	XQ	PV7010 CA525	1/64	500 - **650** - 825	0.020 - **0.039** - 0.079	0.004 - **0.006** - 0.010
				Interrupted			1/64	325 - **500** - 650	0.020 - **0.039** - 0.059	0.004 - **0.006** - 0.008
			Medium	Continuous	Standard	PV725 CA525	1/32	325 - **500** - 650	0.039 - **0.059** - 0.098	0.004 - **0.006** - 0.012
				Interrupted			1/32	250 - **400** - 500	0.039 - **0.059** - 0.079	0.004 - **0.006** - 0.008
	Medium-carbon Steel Medium-carbon Alloy 1045, 4137 etc.	HB ≦ 300	Precision Finishing	Continuous	F, U	TN620 PR1425	0.008	500 - **650** - 825	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
				Interrupted			1/64	400 - **450** - 550	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
			Finishing	Continuous	PP	PV7010 CA525	1/64	500 - **650** - 825	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted			1/64	400 - **600** - 650	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing-Medium	Continuous	HQ	PV7010 CA525	1/64	400 - **600** - 725	0.020 - **0.039** - 0.079	0.004 - **0.006** - 0.010
				Interrupted			1/64	325 - **500** - 650	0.039 - **0.039** - 0.059	0.004 - **0.006** - 0.008
			Medium	Continuous	Standard	PV725 CA5525	1/32	325 - **500** - 650	0.039 - **0.059** - 0.098	0.004 - **0.006** - 0.012
				Interrupted			1/32	250 - **400** - 500	0.039 - **0.059** - 0.079	0.004 - **0.006** - 0.008
	High-carbon Alloy D2, H13 etc.	HB ≦ 280	Precision Finishing	Continuous	F, U	TN620 PR1425	0.008	400 - **500** - 600	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
				Interrupted			1/64	350 - **425** - 525	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
			Finishing	Continuous	PP	PV7010 CA525	1/64	400 - **500** - 600	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted			1/64	325 - **400** - 500	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing-Medium	Continuous	HQ	PV7010 CA525	1/64	400 - **500** - 600	0.020 - **0.039** - 0.079	0.004 - **0.006** - 0.010
				Interrupted			1/64	325 - **400** - 500	0.020 - **0.039** - 0.059	0.004 - **0.006** - 0.008
			Medium	Continuous	Standard	CA515 CA525	1/32	325 - **400** - 500	0.039 - **0.059** - 0.098	0.004 - **0.006** - 0.012
				Interrupted			1/32	250 - **325** - 400	0.039 - **0.059** - 0.079	0.004 - **0.006** - 0.008
M	Stainless Steel 303, 304, 316, 420 etc.	HB ≦ 220	Finishing	Continuous	MQ	CA6525	1/64	400 - **500** - 600	0.008 - **0.020** - 0.031	0.002 - **0.003** - 0.004
				Interrupted			1/32	325 - **400** - 500	0.008 - **0.020** - 0.031	0.002 - **0.003** - 0.004
			Medium	Continuous	Standard	CA6525	1/64	400 - **500** - 600	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.008
				Interrupted			1/32	325 - **400** - 500	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.008
	Stainless Steel S17400 etc.	HB ≦ 300	Finishing	Continuous	MQ	CA6525	1/64	250 - **325** - 400	0.008 - **0.028** - 0.039	0.002 - **0.004** - 0.006
				Interrupted			1/32	200 - **250** - 325	0.008 - **0.028** - 0.039	0.002 - **0.004** - 0.006
			Medium	Continuous	Standard	CA6525	1/64	250 - **325** - 400	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.008
				Interrupted			1/32	200 - **250** - 325	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.008
K	Gray Cast Iron NO.35 NO.45 NO.50 etc.	HB ≦ 250	High Speed Finishing	Continuous	Without Chipbreaker	KBN60M PT600M	1/64	1300 - **1650** - 1975	0.002 - **0.008** - 0.020	0.002 - **0.004** - 0.006
				Interrupted			1/32	650 - **825** - 1150	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Finishing (Gloss Oriented)	Continuous	Standard	PV7005 TN620	1/32	650 - **825** - 975	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted			1/32	325 - **500** - 650	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing	Continuous	Standard	CA4505 CA4515	1/64	500 - **600** - 650	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted			1/32	325 - **500** - 600	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Medium	Continuous	Standard Without Chipbreaker	CA4505 CA4515	1/32	325 - **500** - 650	0.020 - **0.039** - 0.079	0.004 - **0.006** - 0.008
				Interrupted			1/32	250 - **400** - 500	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.006
	Nodular Cast Iron 65-45-12 80-60-03 etc.	HB ≦ 270	High Speed Finishing	Continuous	Without Chipbreaker	KBN60M PT600M	1/64	650 - **975** - 1300	0.002 - **0.008** - 0.020	0.001 - **0.002** - 0.004
				Interrupted			1/32	500 - **650** - 825	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Finishing (Gloss Oriented)	Continuous	Standard	PV7005 TN620	1/32	500 - **650** - 825	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted			1/32	325 - **400** - 500	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing	Continuous	Standard	CA4505 CA4515	1/64	400 - **500** - 600	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted			1/32	325 - **400** - 500	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Medium	Continuous	Standard	CA4505 CA4515	1/32	325 - **400** - 500	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.008
				Interrupted			1/32	250 - **325** - 400	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.006
N	Non-ferrous Metals Copper Alloy Aluminum Alloy (Si 10% Under) etc.	HB ≦ 100	High Speed Finishing (Rainbow-colored Finish)	Continuous	Without Chipbreaker	KPD001	0.008	650 - **1300** - 3275	0.002 - **0.004** - 0.012	0.002 - **0.004** - 0.006
			Finishing	Continuous	FSF, USF	KW10	1/64	325 - **650** - 1300	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
				Interrupted			1/64	325 - **650** - 1300	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
S	Titanium Alloy Ti-6Al-4V etc.	HB ≦ 400	Precision Finishing (Rainbow-colored Finish)	Continuous	Without Chipbreaker	KPD001	0.008	325 - **400** - 500	0.002 - **0.004** - 0.012	0.001 - **0.003** - 0.004
				Interrupted			1/64	225 - **325** - 400	0.002 - **0.004** - 0.012	0.001 - **0.003** - 0.004
			Finishing	Continuous	F, U	KW10	0.008	100 - **175** - 225	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
				Interrupted			1/64	100 - **175** - 225	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
	Heat-restistant Alloys Inconel 625 Inconel 718	HB ≦ 350	Finishing	Continuous	F, U	KW10	1/64	25 - **100** - 175	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
				Interrupted			1/64	25 - **100** - 175	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
			Finishing	Continuous	MQ	PR1310	1/64	125 - **200** - 250	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
				Interrupted			1/32	125 - **200** - 250	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
H	Hardened Steel Hard Materials D2, H13 etc.	40 ~ 50 HRC	Finishing	Continuous	HQ	CA515	1/32	200 - **250** - 325	0.002 - **0.012** - 0.020	0.002 - **0.003** - 0.004
				Interrupted			1/32	100 - **175** - 225	0.002 - **0.012** - 0.020	0.002 - **0.003** - 0.004
		45 ~ 68 HRC	Finishing	Continuous	ME MET	KBN05M	1/64	325 - **450** - 600	0.004 - **0.008** - 0.012	0.001 - **0.003** - 0.004
				Interrupted			1/32	300 - **400** - 525	0.004 - **0.008** - 0.012	0.001 - **0.003** - 0.004

※ For machining free-cutting steels, use PR1005 at Vc=500sfm or less. For D.O.C. and feed rate (f), refer to specs for low carbon steels.

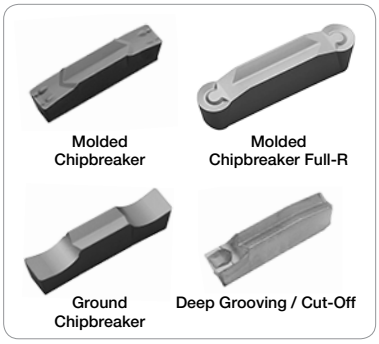
GROOVING

G1 - G49

External Grooving of Precision Parts (G3~G13, G26~G32)

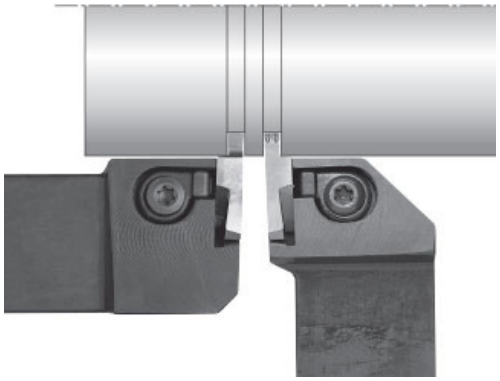


Type	KGM	KGM-T
Width	0.059" ~ 0.236" (1.5mm ~ 6.0mm)	0.079" ~ 0.197" (2.0mm ~ 5.0mm)
Grooving Depth	0.197" ~ 0.630" (5.0mm ~ 16.0mm)	0.669"~0.787" (17.0mm ~ 20.0mm)
Ref. Page	G30	G31



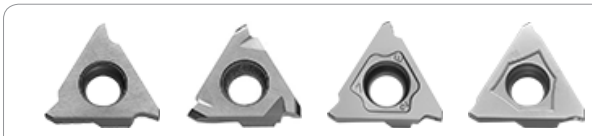
Type	KTGF-F	KTGF	S-KTGF
Width	0.013" ~ 0.098" (0.33mm ~ 2.50mm)		0.013" ~ 0.098" (0.33mm ~ 2.50mm)
Grooving Depth	0.032" ~ 0.098" (0.80mm ~ 2.50mm)		0.032" ~ 0.098" (0.80mm ~ 2.50mm)
Ref. Page	G4		G5

Shallow Grooving [Grooving Depth : ~0.020" (5mm)]

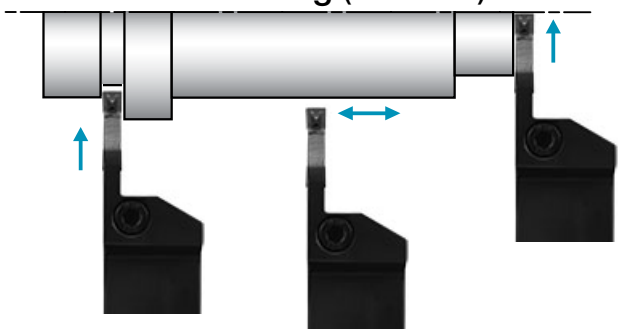


Type	KGBAS	KGBA
Width	0.013" ~ 0.189" (0.33mm ~ 4.80mm)	0.013" ~ 0.098" (0.33mm ~ 2.50mm)
Grooving Depth	0.032" ~ 0.197" (0.80mm ~ 5.00mm)	0.032" ~ 0.098" (0.80mm ~ 2.50mm)
Ref. Page	G13	G12

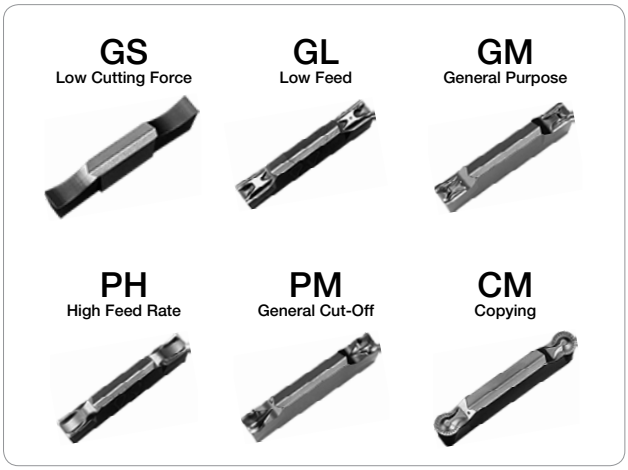
Edge Shape	General (Square)	Full-R (Round)	GM Chipbreaker	MY Chipbreaker
				



External Grooving (G14~G25)



Type	KGD
Width	0.079" ~ 0.236" (2.0mm ~ 6.0mm)
Grooving Depth	0.236" ~ 0.787" (6.0mm ~ 20.0mm)
Ref. Page	G19~ G21



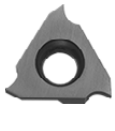
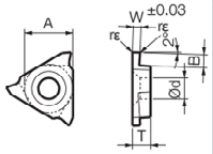
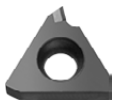
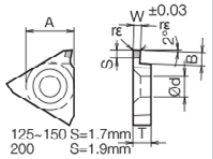
Applicable Inserts

P	Carbon Steel / Alloy Steel		●	◔	◔		
M	Stainless Steel		●	◔	●		
K	Cast Iron					●	
N	Non-ferrous Metals					●	●
S	Titanium Alloy					●	●
H	Hard materials (≤40HRC)		●	○	●		
	Hard materials (≥40HRC)						

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

(in)

Part Number	A	T	Ød
TGF32_	0.375	0.125	0.177

Insert (Right-handed Insert Shown)	Part Number	Unit	Dimensions W	B	rε	Cermet TC40	MEGA COAT PR1215	PVD Coated Carbide PR930	PVD Coated Carbide PR1115	Carbide KW10	PCD KPD001	Applicable Toolholders	Ref. Page for Toolholder
 	TGF32R/L 031N	inch	0.031	0.078	0.004		●					KTGFR/L...16F KTGFR/L...16 S...KTGFL16	G4 G5
	041N		0.041	0.078	0.004		●						
	047N		0.047	0.078	0.004		●						
	058N		0.058	0.078	0.004		●						
	062N		0.062	0.078	0.004		●						
	078N		0.078	0.098	0.004		●						
	094N		0.094	0.098	0.004		●						
	TGF32R/L 033-005	mm	0.33	0.8	0.05		Ⓡ	Ⓡ					
	050-005		0.50	1.2	0.05	Ⓡ	○	○	Ⓛ	Ⓡ			
	075-010		0.75	2.0	0.10	Ⓡ	○	○	Ⓛ	Ⓡ			
	095-010		0.95	2.0	0.10	Ⓡ	○	○	Ⓛ	Ⓡ			
	100-010		1.00	2.0	0.10	Ⓡ	○	○	Ⓛ	Ⓡ			
	120-010		1.20	2.0	0.10		○						
	125-010		1.25	2.0	0.10	Ⓡ	○	○	Ⓛ	Ⓡ	Ⓡ		
	140-010		1.40	2.0	0.10		○						
	145-010		1.45	2.0	0.10	Ⓡ	○	○	Ⓛ	Ⓡ			
	150-010		1.50	2.0	0.10	Ⓡ	○	○	Ⓛ	Ⓡ	Ⓡ		
	175-010		1.75	2.0	0.10	Ⓡ	○	○	Ⓛ	Ⓡ			
	200-010		2.00	2.5	0.10	Ⓡ	○	○	Ⓛ	Ⓡ	Ⓡ		
	250-010		2.50	2.5	0.10	Ⓡ	○	○	Ⓛ	Ⓡ			
 1 Edge	TGF32R/L 125-010	inch	1.25	2.0	0.10	Ⓡ	○	○	Ⓛ	Ⓡ	Ⓡ		
 125~150 S=1.7mm 200 S=1.9mm	150-010		1.50	2.0	0.10	Ⓡ	○	○	Ⓛ	Ⓡ	Ⓡ		
	200-010		2.00	2.5	0.10	Ⓡ	○	○	Ⓛ	Ⓡ	Ⓡ		

• Dimension B shows available grooving depth

Recommended Cutting Conditions

TGF Insert (Ground Chipbreaker)

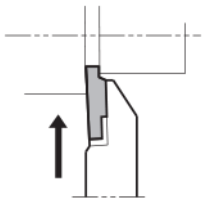
Workpiece Material	Recommended Insert Grade (Vc sfm) Cermet TN90	Cermet TC40	Cermet TC60	MEGA COAT PR1215	PVD Coated Carbide PR930	PVD Coated Carbide PR1115	Carbide KW10	PCD KPD001 (KPD010)	① f (feed) during Grooving (ipr) ② f (feed) during Turning (ipr) ③ D.O.C. during Turning (in) TGF32R/L 033 ~ 050	TGF32R/L 075 ~ 095	TGF32R/L 100 ~ 145	TGF32R/L 150 ~ 250	Remarks
Carbon Steel	☆ 500~725	☆ 500~725	☆ 325~500	★ 250~600	☆ 250~600	☆ 250~600	-	-	① 0.0004~0.0020 ② Turning N/A ③ Turning N/A	① 0.0008~0.0028 ② Turning N/A ③ Turning N/A	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	Wet
Alloy Steel	☆ 425~650	☆ 425~650	☆ 250~425	★ 250~525	☆ 250~525	☆ 250~525	-	-	① 0.0004~0.0016 ② Turning N/A ③ Turning N/A	① 0.0008~0.0024 ② Turning N/A ③ Turning N/A	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	
Stainless Steel	☆ 225~500	-	☆ 200~325	☆ 200~425	☆ 200~425	★ 200~425	-	-	① 0.0004~0.0016 ② Turning N/A ③ Turning N/A	① 0.0008~0.0024 ② Turning N/A ③ Turning N/A	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	
Cast Iron	-	-	-	-	-	-	★ 200~650	-	① 0.0004~0.0020 ② Turning N/A ③ Turning N/A	① 0.0008~0.0028 ② Turning N/A ③ Turning N/A	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	
Aluminum	-	-	-	-	-	-	★ 500~1300	★ 500~6550	① 0.0004~0.0020 ② Turning N/A ③ Turning N/A	① 0.0008~0.0028 ② Turning N/A ③ Turning N/A	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	
Brass	-	-	-	-	-	-	★ 500~975	★ 650~2625	① 0.0004~0.0016 ② Turning N/A ③ Turning N/A	① 0.0008~0.0024 ② Turning N/A ③ Turning N/A	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	

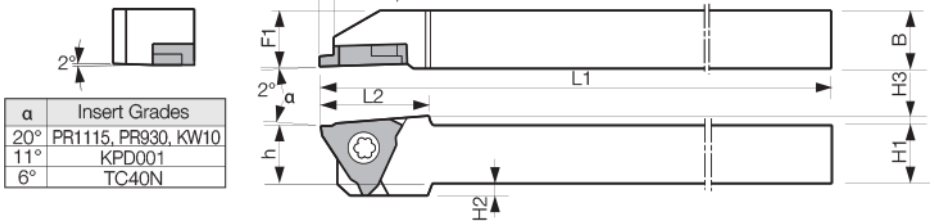
★ : 1st Recommendation ☆ : 2nd Recommendation

Inserts are sold in 10 piece boxes. *CBN & PCD Tools are sold in 1 piece boxes.*

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

KTGF-F (Without Offset)



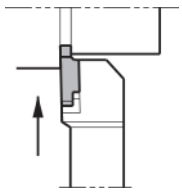


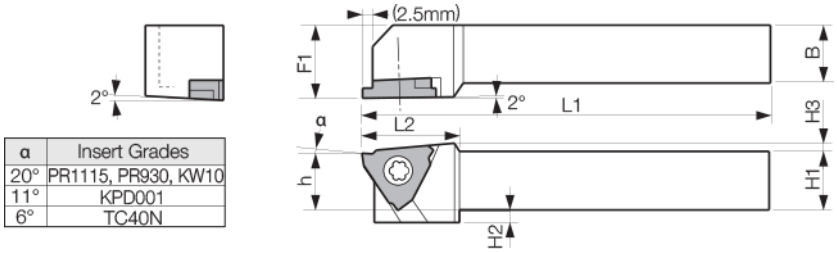
α	Insert Grades
20°	PR1115, PR930, KW10
11°	KPD001
6°	TC40N

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

KTGF (With Offset)





α	Insert Grades
20°	PR1115, PR930, KW10
11°	KPD001
6°	TC40N

• Right-hand shown

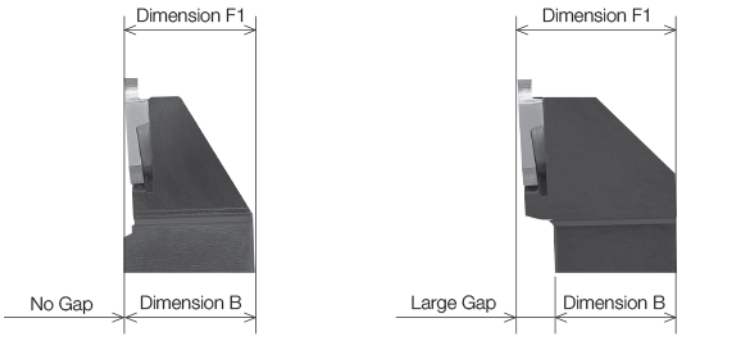
• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H1=h	H2	H3	B	L1	L2	F1	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts (G3)
KTGF R/L	6-3JXF	●	●	inch	0.375	0.079	0.098	0.375	4.750	0.728	0.383	SB-4070TRW	FT-8	TGF32 R/L
	8-3JXF	●	●		0.500	-	0.098	0.098	4.750	0.728	0.500			
	10-3JXF	●	●		0.625	-	0.098	-	4.750	0.728	0.098			
KTGF R/L	1010JX-16F	○	○	mm	10	2	2.5	10	120	18.5	10	SB-4070TRW	FT-8	
	1212JX-16F	○	○		12	-	2.5	12	120	18.5	12			
	1616JX-16F	○	○		16	-	2.5	16	120	18.5	16			
KTGF R/L	1212F-16F	○			12	-	2.5	12	85	18.5	12	SB-4070TRW	FT-8	
KTGF R/L	1010F-16	○	○		10	4	2.5	10	80	18.5	12	SB-4070TRS	FT-10	
	1212H-16	○	○		12	2	2.5	12	100	18.5	16			
	1616H-16	○	○		16	-	2.5	16	100	18.5	20			
	2020K-16	○	○		20	-	2.5	20	125	20.0	25			

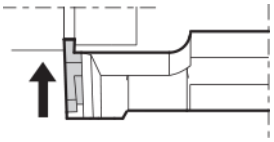
Usage Difference Between KTGF-F and KTGF Toolholders

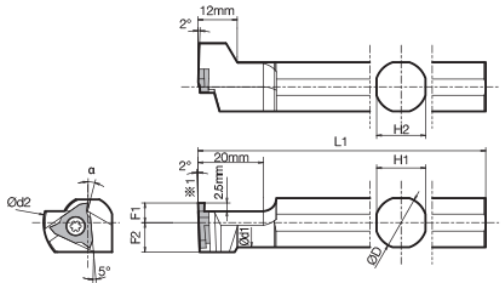
It is necessary to use "Without Offset" in operating the automatic lathe.



Without Offset (KTGF-F) With Offset (KTGF)

S-KTGF (Sleeve Holder)





α	L-hand Shown
20°	PR1115, PR1215, PR930, KW10
11°	KPD001
6°	TC40N

• Left-hand shown

• Right-hand Insert for Left-hand Toolholder

※1 : Dimension B shows available grooving depth

Toolholder Dimensions

Part Number	Stock	Unit	Dimensions							Spare Parts		Applicable Inserts ➔ G3
			ØD	L1	F1	F2	Ød1	Ød2	H1=H2	Clamp Screw	Wrench	
S12F-KTGFL16	○	mm	12.0	80	6	9.0	11.0	27	11	SB-4070TRS	FT-10	TGF32R/L
S14H-KTGFL16	○		14.0	100	6	9.0	13.0	27	13			
S15F-KTGFL16	●	inch	0.625	3.35	0.236	0.354	0.575	1.063	0.591			
S16F-KTGFL16	○	mm	16.0	85	6	9.0	14.6	27	15			
S19G-KTGFL16	●	inch	0.750	3.54	0.236	0.413	0.693	1.063	0.669			
S19K-KTGFL16	●		0.750	4.73	0.236	0.413	0.693	1.063	0.669			
S20G-KTGFL16	○	mm	20.0	90	6	11.0	18.6	27	18			
S20K-KTGFL16	○		20.0	120	6	11.0	18.6	27	18			
S25.0H-KTGFL16	○		25.0	100	10	14.0	23.6	32	23			
S25K-KTGFL16	●	inch	1.000	4.73	3.940	0.551	0.929	1.260	0.906			

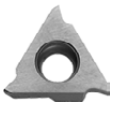
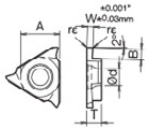
GBA Inserts (Inch)

(in)

Part Number	A	T	Ød
GBA32_	0.375	0.125	0.173
GBA43_	0.500	0.187	0.217
GBA43R480	0.500	0.197	0.217

P	Carbon Steel / Alloy Steel	●	◔
M	Stainless Steel		●
K	Cast Iron		
N	Non-ferrous Metals		
S	Titanium Alloy		●
H	Hard materials (≤40HRC)		●
	Hard materials (≥40HRC)		

Classification of Usage
◕ : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Unit	Dimensions (in) W	B	rε	MEGACOAT Cermet PV7040	MEGA COAT PR1215	Applicable Toolholders	Ref. Page for Toolholder
 	GBA32R 031N	-	inch	0.031	0.079	0.002	●	●	KGBAR…3 KGBAR…16 KGBASR…16	G12 G13
	041N	-		0.041	0.079	0.002	●	●		
	047N	-		0.047	0.079	0.008	●	●		
	058N	-		0.058	0.079	0.008	●	●		
	062N	-		0.062	0.079	0.008	●	●		
	078N	-		0.078	0.098	0.008	●	●		
	094N	-		0.094	0.098	0.008	●	●		
	GBA43R 031N	-	inch	0.031	0.079	0.008	●	●	KGBAR…4-15 KGBAR…22-15 KGBASR…22-15	
	047N	-		0.047	0.079	0.008	●	●		
	062N	-		0.062	0.138	0.008	●	●		
	072N	-		0.072	0.138	0.008	●	●		
	078N	-		0.078	0.138	0.008	●	●		
	088N	-		0.088	0.138	0.008	●	●		
	094N	-		0.094	0.157	0.012	●	●	KGBAR…4-25 KGBAR…22-25 KGBASR…22-25 KGBAR…22-25T5 KGBASR…22-25T5	
	097N	-		0.097	0.157	0.012	●	●		
	105N	-		0.105	0.157	0.012	●	●		
	109N	-		0.109	0.157	0.012		●		
	110N	-		0.110	0.157	0.012	●	●		
	125N	-		0.125	0.157	0.012	●	●		
	141N	-		0.141	0.197	0.012		●	KGBAR…4-35 KGBAR…22-35 KGBASR…22-35	
	142N	-		0.142	0.197	0.012	●	●		
	156N	-		0.156	0.197	0.016	●	●		
	172N	-		0.172	0.197	0.016		●		
	178N	-		0.178	0.197	0.016	●	●		
	188N	-		0.188	0.197	0.016		●		

• Dimension B shows available grooving depth

Inserts are sold in 5 piece boxes.

KYOCERA

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U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

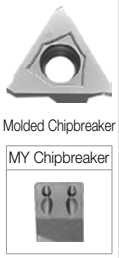
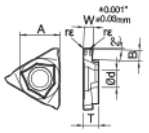
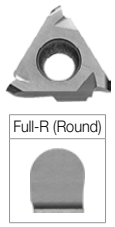
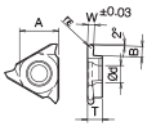
GBA Inserts (Inch)

(in)

Part Number	A	T	Ød
GBA32_	0.375	0.125	0.173
GBA43_	0.500	0.187	0.217
GBA43R480	0.500	0.197	0.217

P	Carbon Steel / Alloy Steel	●	◔
M	Stainless Steel		●
K	Cast Iron		
N	Non-ferrous Metals		
S	Titanium Alloy		●
H	Hard materials (≤40HRC)		●
	Hard materials (≥40HRC)		

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Unit	Dimensions (in) W	B	rε	MEGACOAT Cermet PV7040	MEGA COAT PR1215	Applicable Toolholders	Ref. Page for Toolholder
 Molded Chipbreaker / MY Chipbreaker 	GBA43R 078MYN	-	inch	0.078	0.138	0.008		●	KGBAR…4-15 KGBAR…22-15 KGBASR…22-15	
	094MYN	-		0.094	0.157	0.012		●	KGBAR…4-25 KGBAR…22-25 KGBASR…22-25 KGBAR…22-25T5 KGBASR…22-25T5	
	125MYN	-		0.125	0.157	0.012		●		
	156MYN	-		0.156	0.197	0.016		●	KGBAR…4-35 KGBAR…22-35 KGBASR…22-35	
 Full-R (Round) 	GBA32R 031R	-	inch	0.062	0.079	0.031		●	KGBAR…3 KGBAR…16 KGBASR…16	G12 G13
	047R	-		0.094	0.098	0.047		●		
	062R	-		0.125	0.098	0.062		●		
	GBA43R 031R	-	inch	0.062	0.138	0.031		●	KGBAR…4-15 KGBAR…22-15 KGBASR…22-15	
	047R	-		0.094	0.157	0.047		●	KGBAR…4-25 KGBAR…22-25 KGBASR…22-25 KGBAR…22-25T5 KGBASR…22-25T5	
	062R	-		0.125	0.157	0.062		●		
	078R	-		0.156	0.197	0.078		●	KGBAR…4-35 KGBAR…22-35 KGBASR…22-35	
	094R	-		0.188	0.197	0.094		●		

• Dimension B shows available grooving depth

Inserts are sold in 5 piece boxes.

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

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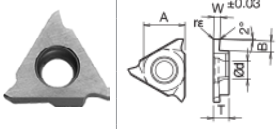
GBA Inserts (Metric)

(mm)

Part Number	A	T	Ød
GBA32_	9.525	3.18	4.4
GBA43_	12.700	4.76	5.5
GBA43R/L480	12.700	5.00	5.5

P	Carbon Steel / Alloy Steel	●				◕	◔		◔		
M	Stainless Steel					●	◕		◔		
K	Cast Iron							◕		◔	
N	Non-ferrous Metals									◕	
S	Titanium Alloy									◕	
H	Hard materials (≤40HRC)					●	○		○		
	Hard materials (≥40HRC)										

Classification of Usage
◕ : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Dimensions (mm) W	B	rε	MC ※2 PV7040	Cermet TC40	Cermet TN6020	Cermet TN90	MEGA COAT PR1215	PVD Coated Carbide PR1115	PVD Coated Carbide PR905	PVD Coated Carbide PR930	Carbide KW10	Applicable Toolholders	Ref. Page for Toolholder
	GBA32R/L 033-005	-	0.33	0.8	0.05						○	○			KGBAR/L…16 KGBASR/L…16	G12 G13
	050-005 ※1	GBA32R/L 050 ※1	0.50	1.0	0.05				○				●	○		
	050-005 ※1	-	0.50	1.2	0.05					●	○	○				
	075-005	GBA32R/L 075	0.75	2.0	0.05	○			○	●	○	○	●	○		
	095-005	095	0.95	2.0	0.05				○	●	○	○	●	○		
	100-005	100	1.00	2.0	0.05	○			○	●	●	○	●	○		
	110-005	110	1.10	2.0	0.05						○	○				
	120-005	120	1.20	2.0	0.05					●	○	○				
	125-020	125	1.25	2.0	0.20	○			○	Ⓡ	○	○	●	○		
	130-020	130	1.30	2.0	0.20					●	○	○				
	140-020	140	1.40	2.5	0.20					●	○	○				
	145-020	145	1.45	2.0	0.20				○					○		
	145-020	-	1.45	2.5	0.20					●	○	○	Ⓛ			
	150-020	GBA32R/L 150	1.50	2.0	0.20	○			○					○		
	150-020	-	1.50	2.5	0.20	○				●	○	○	●			
	160-020	GBA32R/L 160	1.60	2.5	0.20					●	○	○				
	170-020	170	1.70	2.5	0.20					●	○	○				
	175-020	GBA32R/L 175	1.75	2.0	0.20				○					○		
	175-020	-	1.75	2.5	0.20					●	○	○	●			
	200-020	GBA32R/L 200	2.00	2.5	0.20	○			○	●	○	Ⓛ	●	○		
	225-020	225	2.25	2.5	0.20					●	○	○				
	250-020	250	2.50	2.5	0.20				○	●	○	○	●	○		
	300-020	300	3.00	2.5	0.20					●	○	○				
	GBA43R/L 125-010	-	1.25	2.0	0.10					●	○				KGBAR/L…22-15 KGBASR/L…22-15	
	125-020	GBA43R/L 125	1.25	2.0	0.20	○	○		○	●	○	○	Ⓡ	○		
	140-020	140	1.40	3.5	0.20					●	○	○				
	145-020	145	1.45	2.0	0.20		○		○					○		
	145-020	-	1.45	3.5	0.20					●	○	○	○			
	150-010	-	1.50	3.5	0.10					●	○					
	150-020	GBA43R/L 150	1.50	3.5	0.20	○	○		○	●	Ⓛ	○	●	○		
	170-020	170	1.70	3.5	0.20					●	○	○				
	175-020	175	1.75	3.5	0.20		○		Ⓛ	●	○	○	Ⓛ	○		
	185-020	185	1.85	3.5	0.20		○		○	●	○	○	●	○		
	195-020	195	1.95	3.5	0.20						Ⓛ	○				
	200-010	-	2.00	3.5	0.10					●	○					
	200-020	GBA43R/L 200	2.00	3.5	0.20	○	○		Ⓡ	●	○	○	●	○		
	225-020	225	2.25	3.5	0.20					●	○	○				
	230-020	230	2.30	3.5	0.20		○		○	●	○	○	●	○		
	250-010	-	2.50	5.0	0.10					●	○				★1	
	250-030	GBA43R/L 250	2.50	4.0	0.30	○	○		○					○	★2	
	250-030	-	2.50	5.0	0.30					●	Ⓡ	○	●		★1	
	265-030	GBA43R/L 265	2.65	4.0	0.30		○		○					○	★2	
	265-030	-	2.65	5.0	0.30					●	○	○	●		★1	
	280-030	GBA43R/L 280	2.80	4.0	0.30		○		○					○	★2	
	280-030	-	2.80	5.0	0.30					●	●	○	Ⓛ		★1	
	300-010	-	3.00	5.0	0.10					●	○					
	300-030	GBA43R/L 300	3.00	4.0	0.30	○	○		○					○	★2	
	300-030	-	3.00	5.0	0.30					●	○	○	●		★1	
	325-030	GBA43R/L 325	3.25	5.0	0.30						Ⓡ	Ⓡ			★2	
	330-030	330	3.30	4.0	0.30		○		○					○		
	330-030	-	3.30	5.0	0.30					●	Ⓡ	○	●		★1	

Recommended Cutting Conditions ➔ G11

- Dimension B shows available grooving depth.

※1 : The edge width tolerance of GBA32R/L050 with mark ※1 is different.
※2 : MC stands for MEGACOAT Cermet

★1: KGBAR/L…22-25T5, KGBASR/L…22-25T5
★2: KGBAR/L…22-25T5, KGBASR/L…22-25T5, KGBAR/L…22-25, KGBASR/L…22-25

Inserts are sold in 10 piece boxes.

KYOCERA

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

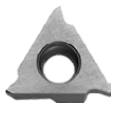
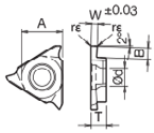
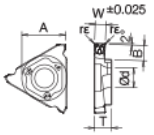
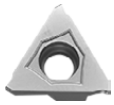
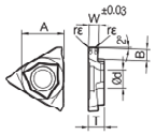
GBA Inserts (Metric)

(mm)

Part Number	A	T	Ød
GBA32_	9.525	3.18	4.4
GBA43_	12.70	4.76	5.5
GBA43R/L480	12.70	5.00	5.5

P	Carbon Steel / Alloy Steel	●				◕	◔		◔	
M	Stainless Steel					●	◕		◔	
K	Cast Iron							◕		◔
N	Non-ferrous Metals									◕
S	Titanium Alloy									◕
H	Hard materials (≤40HRC)					●	○		○	
	Hard materials (≥40HRC)									

Classification of Usage
◕ : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Dimensions (mm) W	B	rε	MC ※1 PV7040	Cermet TC40	TN6020	TN90	MEGA COAT PR1215	PVD Coated Carbide PR1115	PR905	PR930	Carbide KW10	Applicable Toolholders	Ref. Page for Toolholder
 	GBA43R/L 350-010	-	3.50	5.0	0.10					●	○				KGBAR/L…22-35 KGBASR/L…22-35	
	350-030	GBA43R/L 350	3.50	5.0	0.30		○		○	●	○	○	●	○		
	400-010	-	4.00	5.0	0.10					●	○					
	400-040	GBA43R/L 400	4.00	5.0	0.40	○	○		○	●	○	○	●	○		
	430-040	430	4.30	5.0	0.40		○		○	●	○	○	●	○		
	450-040	450	4.50	5.0	0.40		○		○	●	○	○	●	○		
	480-040	480	4.80	5.0	0.40		○		○	●	○	○	●	○		
NEW  GM Chipbreaker  	GBA43R/L 140-010GM	-	1.40	3.5	0.10					○					KGBAR/L…22-15 KGBASR/L…22-15	G12 G13
	150-020GM		1.50	3.5	0.20					○						
	175-020GM		1.75	3.5	0.20					○						
	185-020GM		1.85	3.5	0.20					○						
	200-020GM		2.00	3.5	0.20					○						
	230-020GM		2.30	3.5	0.20					○						
	250-030GM		2.50	5.0	0.30					○					KGBAR/L…22-25T5 KGBASR/L…22-25T5	
	265-030GM		2.65	5.0	0.30					○						
	300-030GM		3.00	5.0	0.30					○						
	330-030GM		3.30	5.0	0.30					○						
	350-030GM		3.50	5.0	0.30					○					KGBAR/L…22-35 KGBASR/L…22-35	
	400-040GM		4.00	5.0	0.40					○						
 Molded Chipbreaker MY Chipbreaker  	GBA43R/L 175-020MY	GBA43R/L 175MY	1.75	3.5	0.20			○		●	○		○		KGBAR/L…22-15 KGBASR/L…22-15	
	185-020MY	185MY	1.85	3.5	0.20			○		●	○		○			
	200-020MY	200MY	2.00	3.5	0.20			Ⓡ		●	○		Ⓡ			
	230-020MY	230MY	2.30	3.5	0.20			○		●	Ⓛ		○			
	250-030MY	GBA43R/L 250MY	2.50	4.0	0.30			Ⓡ							★2	
	250-030MY	-	2.50	5.0	0.30					●	○		Ⓡ		★1	
	265-030MY	GBA43R/L 265MY	2.65	4.0	0.30			○							★2	
	265-030MY	-	2.65	5.0	0.30					●	○		○		★1	
	300-030MY	GBA43R/L 300MY	3.00	4.0	0.30			○							★2	
	300-030MY	-	3.00	5.0	0.30					●	○		Ⓡ		★1	
	330-030MY	GBA43R/L 330MY	3.30	4.0	0.30			Ⓡ							★2	
	330-030MY	-	3.30	5.0	0.30					●	○		Ⓡ		★1	
	350-030MY	GBA43R/L 350MY	3.50	5.0	0.30			○		●	○		○		KGBAR/L…22-35 KGBASR/L…22-35	
	400-040MY	400MY	4.00	5.0	0.40			○		●	Ⓛ		Ⓡ			

• Dimension B shows available grooving depth.
※1 : MC stands for MEGACOAT Cermet
★1: KGBAR/L…22-25T5, KGBASR/L…22-25T5
★2: KGBAR/L…22-25T5, KGBASR/L…22-25T5, KGBAR/L…22-25, KGBASR/L…22-25

Recommended Cutting Conditions G11

GBA-GM Rake Angle after Installment of GBA(α)

α (°)	Insert Part Number
10°	GBA43R/L150-020GM
15°	GBA43R/L175-020GM ~ GBA43R/L265-030GM
12°	GBA43R/L300-030GM ~ GBA43R/L400-040GM

• α indicates the rake angle at the center of the edge width after installing insert.

GBA-MY Rake Angle after Installment of GBA-MY(α)

α (°)	Insert Part Number
15°	GBA43R/L175-020MY ~ GBA43R/L350-030MY
14°	GBA43R/L400-040MY

Inserts are sold in 10 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

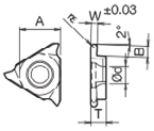
GBA Inserts (Metric)

(mm)

Part Number	A	T	Ød
GBA32_	9.525	3.18	4.4
GBA43_	12.70	4.76	5.5
GBA43R480	12.70	5.00	5.5

		PV7040	TC40N	TN6020	TN90	PR1215	PR1115	PR905	PR930	KW10
P	Carbon Steel / Alloy Steel	●				◕	◔		◔	
M	Stainless Steel					●	◕		◔	
K	Cast Iron							◕		◔
N	Non-ferrous Metals									◕
S	Titanium Alloy									◕
H	Hard materials (≤40HRC)					●	○		○	
	Hard materials (≥40HRC)									

Classification of Usage
◕ : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Dimensions (mm) W	B	rε	Applicable Toolholders	Ref. Page for Toolholder
 Molded Chipbreaker, Full-R (Round) 	GBA32R 200-100R	-	2.00	2.5	1.00	KGBAR…16 KGBASL…16	G12 G13
	GBA32R 300-150R	-	3.00	2.5	1.50		
	GBA43R 100-050R	GBA43R 050R	1.00	2.0	0.50	KGBAR…22-15 KGBASR…22-15	
	GBA43R 150-075R	GBA43R 075R	1.50	3.5	0.75		
	GBA43R 200-100R	GBA43R 100R	2.00	3.5	1.00		
	GBA43R 250-125R	GBA43R 125R	2.50	4.0	1.25	KGBAR…22-25 KGBASR…22-25 KGBAR…22-25T5 KGBASR…22-25T5	
	GBA43R 300-150R	GBA43R 150R	3.00	4.0	1.50		
	GBA43R 400-200R	GBA43R 200R	4.00	5.0	2.00	KGBAR…22-35 KGBASR…22-35	

• Dimension B shows available grooving depth.
※1 : MC stands for MEGACOAT Cermet

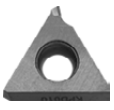
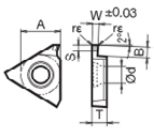
GBA Inserts (Metric)

(mm)

Part Number	A	T	Ød
GBA32_	9.525	3.18	4.4
GBA43_	12.700	4.76	5.5
GBA43R480	12.700	5.00	5.5

		KBN510	KBN525	KPD001	KPD010
P	Carbon Steel / Alloy Steel				
M	Stainless Steel				
K	Cast Iron				
N	Non-ferrous Metals			●	
S	Titanium Alloy			●	
H	Hard materials (≤40HRC)				
	Hard materials (≥40HRC)	○	●		

Classification of Usage
◕ : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Dimensions (mm) W	B	rε	Applicable Toolholders	Ref. Page for Toolholder
 1-Edge  GBA32 S=1.7 GBA43 S=1.9	GBA32R 125-010	GBA32R 125	1.25	2.0	0.1	KGBAR…16 KGBASL…16	G12 G13
	GBA32R 150-010	GBA32R 150	1.50	2.0	0.1		
	GBA43R 125-010	GBA43R 125	1.25	2.0	0.1	KGBAR…22-15 KGBASR…22-15	
	GBA43R 125-020	GBA43R 125	1.25	2.0	0.2		
	GBA43R 150-010	GBA43R 150	1.50	3.5	0.1		
	GBA43R 150-020	GBA43R 150	1.50	3.5	0.2		
	GBA43R 200-010	GBA43R 200	2.00	3.5	0.1		
	GBA43R 200-020	GBA43R 200	2.00	3.5	0.2		
	GBA43R 250-010	GBA43R 250	2.50	4.0	0.1	KGBAR…22-25 KGBASR…22-25 KGBAR…22-25T5 KGBASR…22-25T5	
	GBA43R 250-020	GBA43R 250	2.50	4.0	0.2		
	GBA43R 300-010	GBA43R 300	3.00	4.0	0.1		
	GBA43R 300-020	GBA43R 300	3.00	4.0	0.2		

• Dimension B shows available grooving depth

GBA Rake Angle after Installment of GBA(α)

For GBA32R○○○-○○○		For GBA43R○○○-○○○		For GBA43R○○○-○○○ R(Full-R)		
α (°)	Insert Grade	α (°)	Insert Grade	α (°)	Insert Grade	Full-R
10°	TN90,PV7040,PR930 PR1115,PR1215,PR905 KPD001,KPD010	0°	KBN510, KBN525	10°	TN90,PV7040,PR930 PR1115,PR1215,PR905	050R~150R
		10°	TC40N,TN90,PV7040,PR930 PR1115,PR1215,PR905 KPD001, KPD010	14°	TN90,PV7040,PR930 PR1115,PR1215,PR905	200R
20°	KW10	20°	KW10	14°	KW10	050R~200R

• α indicates the rake angle of the edge width after installing the insert

● : U.S. Stock ◕ : U.S. Stock (R-hand Only) ◔ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Recommended Cutting Conditions

GBA Type Insert (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)										① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)					Remarks
	MC ※1	Cermet			MEGA COAT	PVD Coated Carbide		Carbide	CBN	PCD						
	PV7040	TC40	TN90	PR1215	PR930	PR1115	PR905	KW10	KBN510 KBN525	KPD001 (KPD010)	GBA○○R/L 033 ~ 100 GBA○○R/L 031N ~ 041N	GBA○○R/L 125 ~ 200 GBA○○R/L 047N ~ 078N	GBA○○R/L 230 ~ 300 GBA○○R/L 094N ~ 109N	GBA○○R/L 330 ~ 400 GBA○○R/L 125N ~ 156N	GBA○○R/L 400 ~ 480 GBA○○R/L 172N ~ 188N	
Carbon Steel (SxxC, etc.)	★ 500~800	☆ 500~725	☆ 500~725	★ 250~650	☆ 250~600	☆ 250~600	-	-	-	-	① 0.0012~0.0031 ② Traversing N/A ③ Traversing N/A	① 0.0016~0.0035 ② 0.0016~0.0035 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.032	Wet
Alloy Steel (SCM, etc.)	★ 425~725	☆ 425~650	☆ 425~650	★ 250~600	☆ 250~525	☆ 250~525	-	-	-	-	① 0.0012~0.0028 ② Traversing N/A ③ Traversing N/A	① 0.0016~0.0031 ② 0.0016~0.0031 ③ MAX 0.012	① 0.0020~0.0035 ② 0.0020~0.0035 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.032	
Stainless Steel (SUS304, etc.)	-	-	☆ 225~500	☆ 200~500	☆ 200~425	★ 200~425	-	-	-	-	① 0.0012~0.0028 ② Traversing N/A ③ Traversing N/A	① 0.0016~0.0031 ② 0.0016~0.0031 ③ MAX 0.012	① 0.0020~0.0035 ② 0.0020~0.0035 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.032	
Cast Iron (FC/FCD, etc.)	-	-	-	-	-	-	★ 250~600	☆ 200~400	★ 500~1300	-	① 0.0012~0.0031 ② Traversing N/A ③ Traversing N/A	① 0.0016~0.0035 ② 0.0016~0.0035 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.032	
Aluminum	-	-	-	-	-	-	-	★ 500~1300	-	★ 500~6550	① 0.0020~0.0047 ② Traversing N/A ③ Traversing N/A	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.032	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.032	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.032	
Brass	-	-	-	-	-	-	-	★ 500~975	-	★ 650~2625	① 0.0020~0.0047 ② Traversing N/A ③ Traversing N/A	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.032	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.032	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.032	
Hard Materials	-	-	-	-	-	-	-	-	★ 250~400	-	-	① 0.0008~0.0500 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0028 ② 0.0100~0.0400 ③ MAX 0.004	-	-	

• Above cutting condition is for external grooving. Set both cutting speed and feed 10% higher for internal grooving.
※1 : MC stands for MEGACOAT Cermet

★ : 1st Recommendation ☆ : 2nd Recommendation

GBA Type Insert (GM Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)	① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)				Remarks
	MEGACOAT					
	PR1215	GBA43R/L 150~ 020GM	GBA43R/L 175-020GM~ 230-020GM	GBA43R/L 250-030GM~ 350-030GM	GBA43R/L 400-040GM	
Carbon Steel (SxxC, etc.)	250~725	① 0.0012~0.0047 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0012~0.0047 ② 0.0012~0.0035 ③ MAX 0.012	① 0.0016~0.0059 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0039 ③ MAX 0.032	Wet
Alloy Steel (SCM, etc.)	250~650	① 0.0012~0.0047 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0012~0.0047 ② 0.0012~0.0035 ③ MAX 0.012	① 0.0016~0.0059 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0039 ③ MAX 0.032	
Stainless Steel (SUS304, etc.)	200~500	① 0.0012~0.0039 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0012~0.0039 ② 0.0012~0.0035 ③ MAX 0.012	① 0.0016~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0016~0.0047 ② 0.0020~0.0039 ③ MAX 0.032	

• Above cutting condition is for external grooving. Set both cutting speed and feed 20% higher for internal grooving.

★ : 1st Recommendation ☆ : 2nd Recommendation

GBA Type Insert (MY Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)								① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)					Remarks
	Cermet		MEGA COAT	PVD Coated Carbide		Carbide	CBN	PCD						
	TN6020	TC40	PR1215	PR930	PR1115	KW10	KBN510	KPD001 (KPD010)	GBA43R/L 175MY~ 200MY GBA43R/L 078MYN~ 200MY	GBA43R/L 230MY~ 265MY GBA43R/L 094MYN	GBA43R/L 300MY	GBA43R/L 330MY~ 350MY GBA43R/L 125MYN	GBA43R/L 400MY GBA43R/L 156MYN	
Carbon Steel (SxxC, etc.)	☆ 500~725	-	★ 250~650	☆ 250~650	☆ 250~650	-	-	-	① 0.0012~0.0031 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0016~0.0035 ② 0.0016~0.0035 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.032	Wet
Alloy Steel (SCM, etc.)	☆ 425~650	-	★ 250~600	☆ 250~600	☆ 250~600	-	-	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ MAX 0.012	① 0.0016~0.0031 ② 0.0016~0.0031 ③ MAX 0.012	① 0.0020~0.0035 ② 0.0020~0.0035 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.032	
Stainless Steel (SUS304, etc.)	☆ 225~500	-	☆ 200~500	☆ 200~500	★ 200~500	-	-	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ MAX 0.012	① 0.0016~0.0031 ② 0.0016~0.0031 ③ MAX 0.012	① 0.0020~0.0035 ② 0.0020~0.0035 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.032	

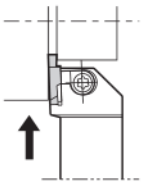
• Above cutting condition is for external grooving. Set both cutting speed and feed 10% higher for internal grooving.

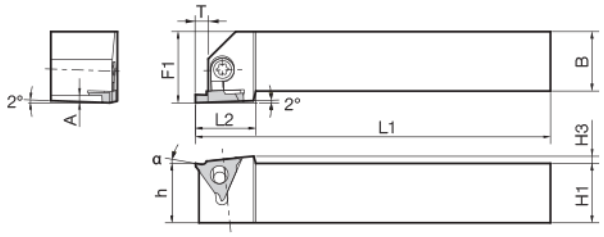
★ : 1st Recommendation ☆ : 2nd Recommendation

CBN & PCD Inserts are sold in 1 piece boxes.

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

KGBA





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

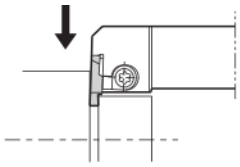
Part Number		Stock R	Stock L	Unit	Dimensions H1=h	H3	B	L1	L2	F1	A	T	Spare Parts: Clamp Set	Spare Parts: Wrench	Applicable Insert ➡ G6~ ➡ G10
KGBA□	12-3	●	●	inch	0.750	0.160	0.750	5.00	0.945	1.000	-	0.098	LGBA-16□S	FT-15	GBA32□ Type
	12-4-15	●	●		0.750	0.160	0.750	5.00	1.004	1.000	0.039	0.157	LGBA-22□S	FT-15	GBA43□ Type
	12-4-25	●	●		0.750	0.160	0.750	5.00	1.004	1.000	0.079	0.177			
	12-4-25T	●	●		0.750	0.160	0.750	5.00	1.004	1.000	0.079	0.217			
	12-4-35	●	●		0.750	0.160	0.750	5.00	1.004	1.000	0.118	0.217			
KGBA□	2020K-16	○	○	mm	20	4.0	20	125	24	25	-	2.5	LGBA-16□S	FT-15	GBA32□ Type
	2020K22-15	○	○		20	4.0	20	125	25.5	25	1.0	4.0	LGBA-22□S	FT-15	GBA43□ Type
	2020K22-25	○	○		20	4.0	20	125	25.5	25	2.0	4.5			
	2020K22-25T5	○	○		20	4.0	20	125	25.5	25	2.0	5.5			
	2020K22-35	○	○		20	4.0	20	125	25.5	25	3.0	5.5			
	2020H22-15	○			20	4.0	20	100	25.5	25	1.0	4.0			
	2020H22-25	○			20	4.0	20	100	25.5	25	2.0	4.5			
	2020H22-35	○			20	4.0	20	100	25.5	25	3.0	5.5			

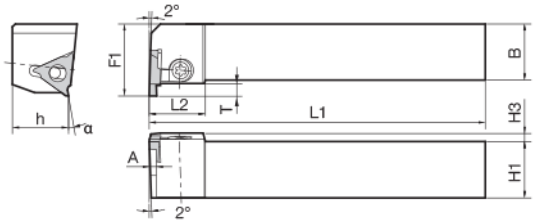
- Dimension T shows the distance from the Toolholder to the cutting edge Dimension B shows available grooving depth.
- Clamp Set : KGBA□…LGBA-○RS for Right-hand Toolholder. and LGBA-○LS for Left-hand Toolholder
- KGBAS□…LGBA-○LS for Right-hand Toolholder. and LGBA-○RS for Left-hand Toolholder

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

KGBAS





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Dimensions H1=h	H3	B	L1	L2	F1	A	T	Spare Parts: Clamp Set	Spare Parts: Wrench	Applicable Insert ➡ G6~ ➡ G10
KGBAS☐ 12-3	●		inch	0.750	0.152	0.750	5.000	0.984	0.984	-	0.098	LGBA-16LS	FT-15	GBA32L Type
12-4-15	●			0.750	0.160	0.750	5.000	0.984	1.062	0.039	0.157	LGBA-22LS	FT-15	GBA43L Type
12-4-25	●			0.750	0.160	0.750	5.000	0.984	1.062	0.079	0.177			
12-4-35	●			0.750	0.160	0.750	5.000	0.984	1.062	0.118	0.217			
KGBAS☐ 2020K-16	○	○	mm	20	4.0	20	125	25	25	-	2.5	LGBA-16☐S	FT-15	GBA32☐ Type
2020K22-15	○	○		20	4.5	20	125	25	27	1.0	4.0	LGBA-22☐S	FT-15	GBA43☐ Type
2020K22-25	○	○		20	4.5	20	125	25	27	2.0	4.5			
2020K22-25T5	○	○		20	4.5	20	125	25	27	2.0	5.5			
2020K22-35	○	○		20	4.5	20	125	25	27	3.0	5.5			

• Dimension T shows the distance from the Toolholder to the cutting edge Dimension B shows available grooving depth.

• Clamp Set : KGBA☐…LGBA-○RS for Right-hand Toolholder. and LGBA-○LS for Left-hand Toolholder
KGBAS☐…LGBA-○LS for Right-hand Toolholder. and LGBA-○RS for Left-hand Toolholder

External Grooving Toolholders KGBA Short Shank types are available
For NC lathe and HSK tooling, KGBAR2020K-○○ (Overall length 125mm) short shank type KGBAR2020H22-○○
(Overall length 100mm) is available., meaning it is no longer necessary for users to cut-down the shank.

KGD Insert Lineup

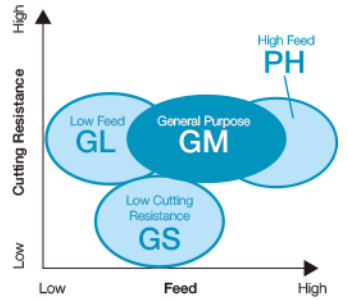
Smooth Chip Control
Introducing new chipbreakers designed to cover a variety of workpiece materials.

High Precision Edge Preparation
High precision molding technology with tolerance ±0.03mm (2, 3, 4mm types).

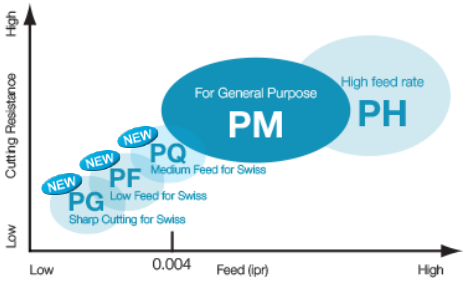
MEGACOAT Techology
Long tool life and high efficiency machining achieved by superior oxidation and wear resistance.

Application Map

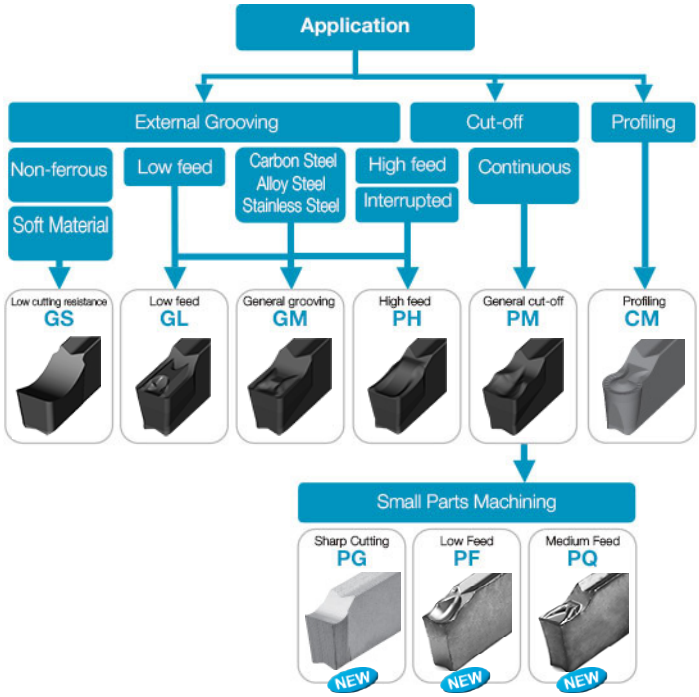
External Grooving & Traversing



Cut-off

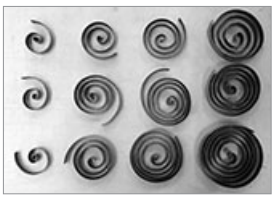


Chipbreaker Selection



PF / PQ / PG / PM / PH Cut-Off Inserts and Applicable Toolholders H12~ H13

Cutting Conditions - SCM415 Vc=500sfm, f=0.006ipr



GM Chipbreaker

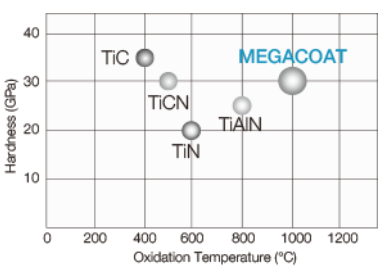
Competitor A

Competitor B

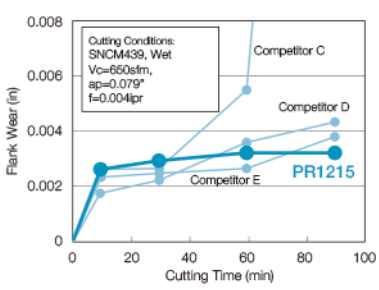
Better chip control than competitors

Reduces damage of cutting edge caused by crushing chips

MEGACOAT Features



Wear Resistance Comparison



PR1225
1st recommendation for cut-off, grooving, and traversing

PR1215
Superior wear resistance, recommended for grooving and cut-off under stable conditions.

1st recommendation for machining of cast iron

Setting the Insert

1. Completely eliminate chips from the insert mounting part. (see **Fig.1**)
2. Put the insert into the toolholder and push until it contacts the holder's surface for fixing the insert's back end. (see **Fig.2**, **Fig.3**)
3. Keeping the insert pushed against the toolholder's locating surface, tighten the insert clamp bolt at an appropriate torque.
4. Make sure there is no gap between the insert and the toolholder's locating surface and that the insert is set straight. (see **Fig.2**, **Fig.3**)

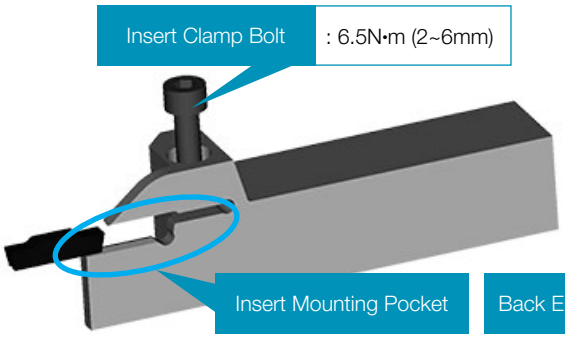


Fig.1

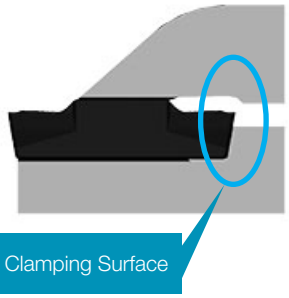


Fig.2

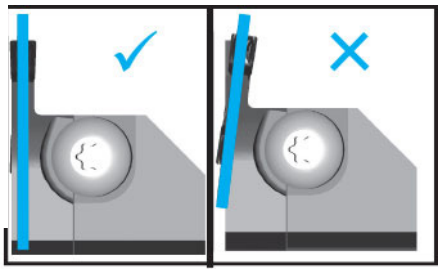


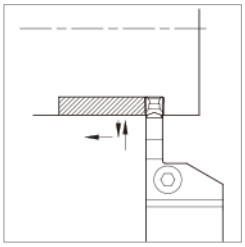
Fig.3

Guide for External Machining

Point (I)

1. Grooving Depths Over 0.5mm : At Roughing (**Fig.1**)
   Before traversing, pull the tool back about 0.1mm after grooving, instead of traversing subsequent to grooving.
   (Failure to pull the tool back before traverse cutting will result in an unbalanced load applied on only one side of the cutting edge.)

2. Grooving Depths Under 0.5mm : At Finishing (**Fig.2**)
   Traversing subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge.
   (Dwell-motion is not necessary)



Before traversing, pull the tool back about 0.1mm after grooving.
(Grooving depth over 0.5mm : At roughing)

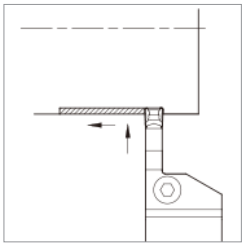
Fig.1

Point (II)

When widening the groove width, apply the "Step Turning" as shown in **Fig.3**

The widened groove and side walls should be finished last.
(For better chip control, D.O.C. over 0.5mm is recommended.)

Note: If the workpiece is not supported at the center, reduce the feed rate when grooving towards center



Traversing subsequent to grooving.
(Grooving depth under 0.5mm : At Finishing)

Fig.2

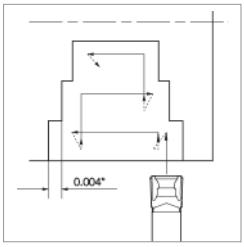


Fig.3

GDM / GDMS / GDG

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel	●		●	◔	
M	Stainless Steel			●	◔	
K	Cast Iron				●	
N	Non-ferrous Metals					●
S	Titanium Alloy					●
H	Hard materials (≤40HRC)			○		
	Hard materials (≥40HRC)					

Insert (Right-handed Insert Shown)	Part Number	Dimensions (inch) W inch	W mm	W Tolerance	rε	M	L	H	Cermet TN90	MAGA COAT NANO PR1535	MEGACOAT PR1225	MEGACOAT PR1215	Carbide GW15	Ref. Page for Toolholder
Grooving & Traversing — General Purpose 2-edge	GDM 2420N-020GM	0.094	2.4	±0.0012	0.008	0.077	0.787	0.169	○		●	●		G19 G20 G21
	3020N-020GM	0.118	3.0		0.008	0.091	0.787	0.169	○		●	●		
	3020N-040GM	0.118	3.0		0.016	0.091	0.787	0.169	○		●	●		
	4020N-020GM	0.157	4.0		0.008	0.130	0.787	0.169	○		●	●		
	4020N-040GM	0.157	4.0		0.016	0.130	0.787	0.169	○		●	●		
	4020N-080GM	0.157	4.0		0.032	0.130	0.787	0.169	○		●	●		
	5020N-040GM	0.197	5.0	±0.0016	0.016	0.165	0.787	0.169	○		●	●		
	5020N-080GM	0.197	5.0		0.032	0.165	0.787	0.169	○		●	●		
	6020N-040GM	0.236	6.0		0.016	0.205	0.787	0.169	○		●	●		
	6020N-080GM	0.236	6.0		0.032	0.205	0.787	0.169	○		●	●		
General Purpose 1-edge	GDMS 2220N-020GM	0.087	2.2	±0.0012	0.008	0.069	0.787	0.169	○		●	●		
	3020N-040GM	0.118	3.0		0.016	0.091	0.787	0.169	○		●	●		
	4020N-040GM	0.157	4.0		0.016	0.130	0.787	0.169	○		●	●		
	5020N-080GM	0.197	5.0	±0.0016	0.032	0.165	0.787	0.169	○		●	●		
	6020N-080GM	0.236	6.0		0.032	0.205	0.787	0.169	○		●	●		
Low feed 2-edge	GDM 2420N-020GL	0.094	2.4	±0.0012	0.008	0.077	0.787	0.169	○		●	●		
	3020N-020GL	0.118	3.0		0.008	0.091	0.787	0.169	○		●	●		
	3020N-040GL	0.118	3.0		0.016	0.091	0.787	0.169	○		●	●		
	4020N-020GL	0.157	4.0		0.008	0.130	0.787	0.169	○		●	●		
	4020N-040GL	0.157	4.0		0.016	0.130	0.787	0.169	○		●	●		
	5020N-040GL	0.197	5.0	±0.0016	0.016	0.165	0.787	0.169	○		●	●		
	6020N-040GL	0.236	6.0		0.016	0.205	0.787	0.169	○		●	●		

PH Chipbreaker inserts and applicable toolholders for cut-off ➡ **H13**

Recommended Cutting Conditions ➡ **G22**

Insert Identification System

① Series	② Tolerance	③ No. of Corners	④ Edge Width	⑤ Insert Length	⑥ Hand of Tool	⑦ Corner-R (rε)	⑧ Chipbreaker	⑨ Lead Angle
G D	M : M-Class G : G-Class	No Indication : 2-edge S : 3-edge	20 : 2mm 30 : 3mm 40 : 4mm	20 : 20mm	R : Right-hand L : Left-hand N : Neutral	020 : 0.2mm 040 : 0.4mm 150R : 1.5mm (Full-R)	GM: Grooving & Traversing GL: Low Feed CM: Copying PH : High Feed PM : Cut-Off NB : Without Chipbreaker	No Idication : 0° 6D : 6°
G D	M	S	30	20	N	020	GM	6D

Inserts are sold in 10 piece boxes.

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(Technical Support) 800.823.7284 - Option 2
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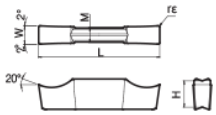
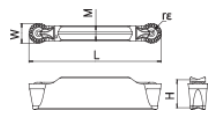
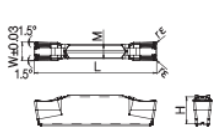
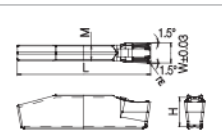
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

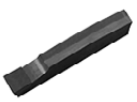
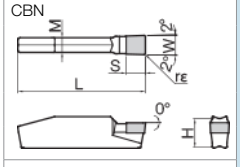
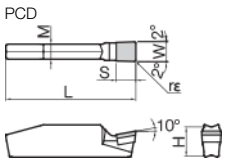
NEW ITEMS!

GDM / GDMS / GDG

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		Cermet	MAGA COAT NANO	MEGACOAT		Carbide
		TN90	PR1535	PR1225	PR1215	GW15
P	Carbon Steel / Alloy Steel	●		◔	◔	
M	Stainless Steel			◔	◔	
K	Cast Iron				◔	
N	Non-ferrous Metals					◔
S	Titanium Alloy					◔
H	Hard materials (≤40HRC)			○		
	Hard materials (≥40HRC)					

Insert (Right-handed Insert Shown)			Part Number	W inch	W mm	W Tolerance	rε	M	L	H	Ref. Page for Toolholder
Grooving	 Low cutting force 2-edge		GDG 2520N-020GS	0.098	2.5	±0.0008	0.008	0.079	0.787	0.169	G19 G20 G21
			3020N-020GS	0.118	3.0		0.008	0.091	0.787	0.169	
			3520N-020GS	0.138	3.5		0.008	0.110	0.787	0.169	
			4020N-040GS	0.157	4.0		0.016	0.130	0.787	0.169	
			5020N-040GS	0.197	5.0		0.016	0.165	0.787	0.169	
			6020N-040GS	0.236	6.0		0.016	0.205	0.787	0.169	
Full-R / Copying	 2-edge		GDM 3020N-150R-CM	0.118	3.0	±0.0012	0.059	0.091	0.787	0.169	
			4020N-200R-CM	0.157	4.0		0.079	0.130	0.787	0.169	
			5020N-250R-CM	0.197	5.0	±0.0016	0.098	0.165	0.787	0.169	
			6020N-300R-CM	0.236	6.0		0.120	0.205	0.787	0.169	
Grooving & Traversing	 High feed 2-edge		GDM 2020N-020PH	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	
			3020N-030PH	0.118	3.0		0.012	0.091	0.787	0.169	
			4020N-030PH	0.157	4.0		0.012	0.130	0.787	0.169	
	 High feed 1-edge		GDMS 2020N-020PH	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	
			3020N-030PH	0.118	3.0		0.012	0.091	0.787	0.169	
			4020N-030PH	0.157	4.0		0.012	0.130	0.787	0.169	

Insert (Right-handed Insert Shown)			Part Number	W inch	W mm	W Tolerance	rε	M	L	H	S	Angle θ	MEGA CBN KBN05M	CBN KBN570	PCD KPD001	Ref. Page for Toolholder
Grooving	NEW  1-Edge	CBN  PCD 	GDGS 2020N-020NB	0.079	2.0	±0.02	0.2	1.8	20	4.3	2.9	-		○	○	G19 G20 G21
			3020N-020NB	0.118	3.0		0.2	2.3	20	4.3	2.9	-		○		
			3020N-040NB	0.118	3.0		0.4	2.3	20	4.3	2.9	-	●		○	
			4020N-020NB	0.158	4.0		0.2	3.3	20	4.3	2.9	-			○	
			4020N-040NB	0.158	4.0		0.4	3.3	20	4.3	2.9	-	○	○		
			5020N-020NB	0.197	5.0		0.2	4.2	20	4.3	2.9	-			○	
			5020N-040NB	0.197	5.0		0.4	4.2	20	4.3	2.9	-	○	○		
			6020N-020NB	0.236	6.0		0.2	5.2	20	4.3	2.9	-			○	
			6020N-040NB	0.236	6.0		0.4	5.2	20	4.3	2.9	-	○	○		

GDGS (CBN • PCD) NEW

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		MEGA CBN	CBN	PCD
		KBN05M	KBN570	KPD001
K	Cast Iron			
N	Non-ferrous Metals			●
S	Titanium Alloy			●
H	Hard materials (≤40HRC)			
	Hard materials (≥40HRC)	●		
	Powdered Steel		●	

PH Chipbreaker inserts and applicable toolholders for cut-off ➔ H13

Recommended Cutting Conditions ➔ G22

Recommended Cutting Conditions ➔ G22

Inserts are sold in 10 piece boxes.

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

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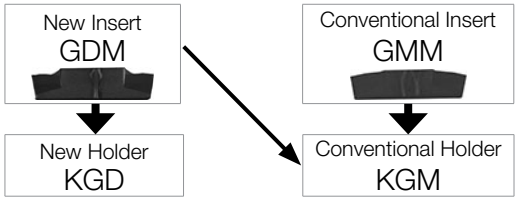
KGD • KGM Combinations

● **Insert Setting Angle of KGD / KGM Toolholders**

KGD...0°	Conventional Tools KGM...5°
	



Installing conventional inserts into the new toolholder is not recommended.

Features of KGD Series for Small Diameter

1 New Slit Design

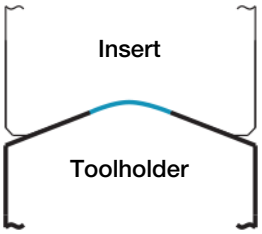
Front Side (insert side)

Back Side

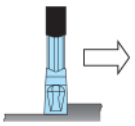
Toolholder clamps insert equally and firmly

The insert clamping force is improved by firmly fastening the front side (insert side) of the toolholder.

2 Radial-Shaped Surface on Toolholder



The insert clamping force and installation are improved by increasing the contact area between the insert and toolholder.



[Cutting Conditions]
n=2,550min^{-1}, f=0.008~0.012ipr, D.O.C.=0.039"~0.118"
Workpiece: W1-9 (Ø10mm) WET (Oil base)

KGD
Excellent Clamping Force

● **Clamping Test** (Traversing)

D.O.C.	0.039"		0.059"		0.079"		0.098"		0.118"	
Feed Rate	0.010ipr	0.012ipr	0.010ipr	0.012ipr	0.010ipr	0.012ipr	0.010ipr	0.012ipr	0.010ipr	0.012ipr
KGD Series for Swiss Tools										
Conventional										
Competitor 1										
Competitor 2										

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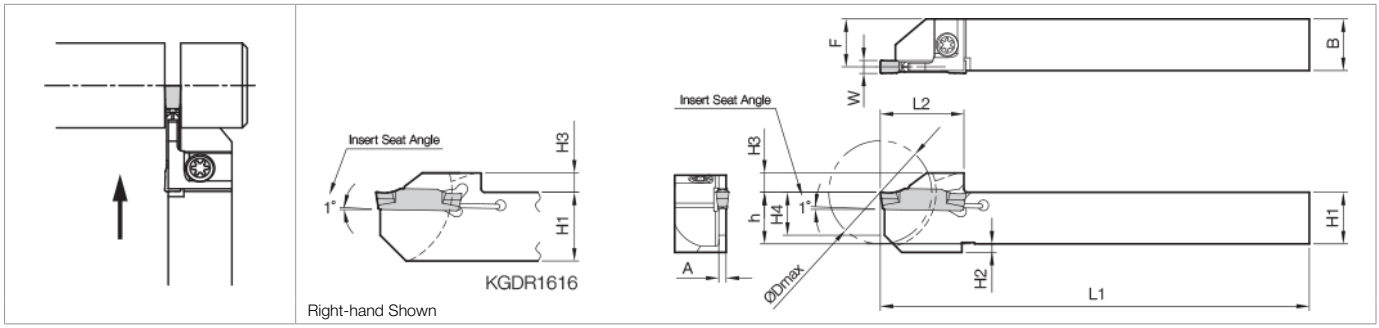
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

KGD (Swiss)



Toolholder Dimensions (Inch Size)

Part Number		Stock		Cut-Off Dia.	Dimensions (inch)									Insert Width W (mm)		Spare Parts	
																Clamp Screw	Wrench
		R	L	ØDmax	H1=h	H2	H3	H4	B	L1	L2	F	A	MIN	MAX		
KGD℀	6-1.5JX	●	●	0.787	0.375	0.098	0.177	0.315	0.375	4.75	0.709	0.351	0.047	-	0.059	SB-40120TR	LTW-15S
	8-1.5JX	●	●	0.944	0.500	0.051	0.177	0.394	0.500	4.75	0.768	0.476	0.047	-	0.059		
KGD℀	6-2JX	●	●	0.787	0.375	0.098	0.177	0.315	0.375	4.75	0.709	0.342	0.067	0.078	0.118	SB-40120TR	LTW-15S
	8-2JX	●	●	0.944	0.500	0.051	0.177	0.394	0.500	4.75	0.768	0.467	0.067	0.078	0.118		
	10-2JX	●	●	1.259	0.625	-	0.177	0.394	0.625	4.75	0.965	0.592	0.067	0.078	0.118		
KGD℀	6-2.4JX	●	●	0.787	0.375	0.098	0.177	0.315	0.375	4.75	0.709	0.336	0.079	0.094	0.118	SB-40120TR	LTW-15S
	8-2.4JX	●	●	0.944	0.500	0.051	0.177	0.394	0.500	4.75	0.768	0.461	0.079	0.094	0.118		
	10-2.4JX	●	●	1.259	0.625	-	0.177	0.394	0.625	4.75	0.965	0.586	0.079	0.094	0.118		
KGD℀	8-3JX	●	●	0.944	0.500	0.051	0.177	0.394	0.500	4.75	0.768	0.453	0.094	0.118	0.118	SB-40120TR	LTW-15S
	10-3JX	●	●	1.259	0.625	-	0.177	0.394	0.625	4.75	0.965	0.578	0.094	0.118	0.157		
KGD℀	10-3D38JX	●	●	1.496	0.625	-	0.236	0.394	0.625	4.75	1.142	0.578	0.094	0.118	0.157	SE-50125TR	LTW-20
	12-3D42JX	●	●	1.653	0.750	-	0.236	0.551	0.750	4.75	1.220	0.703	0.094	0.118	0.157		
	43-3D42JX	●	●	1.653	0.750	-	0.236	0.551	0.500	4.75	1.220	0.453	0.094	0.118	0.157		

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➔ **G16~** ➔ **G17**

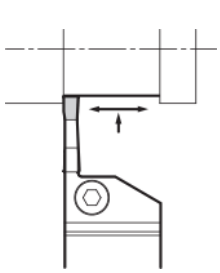
Toolholder Dimensions (Metric Size)

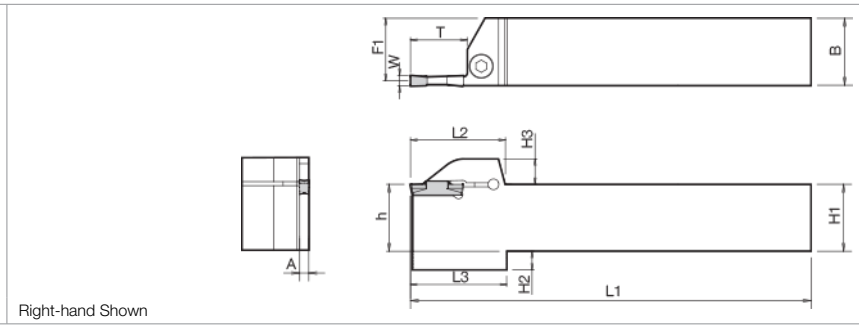
Part Number		Stock		Cut-Off Dia.	Dimensions (mm)									Insert Width W (mm)		Spare Parts	
																Clamp Screw	Wrench
		R	L	ØDmax	H1=h	H2	H3	H4	B	L1	L2	F	A	MIN	MAX		
KGD℀	1010JX-1.3	○	○	20	10	2	4.5	8	10	120	18.0	9.50	1.0	1.3	1.5	SB-40120TR	LTW-15S
	1212JX-1.3	○	○	24	12	2	4.5	10	12	120	19.5	11.50	1.0	1.3	1.5		
KGD℀	1010JX-1.5	○	○	20	10	2	4.5	8	10	120	18.0	9.40	1.2	-	1.5	SB-40120TR	LTW-15S
	1212JX-1.5	○	○	24	12	2	4.5	10	12	120	19.5	11.40	1.2	-	1.5		
KGD℀	1010JX-2	○	○	20	10	2	4.5	8	10	120	18.0	9.15	1.7	2.0	3.0	SB-40120TR	LTW-15S
	1212JX-2	○	○	24	12	2	4.5	10	12	120	19.5	11.15	1.7	2.0	3.0		
	1616JX-2	○	●	32	16	-	4.5	10	16	120	24.5	15.15	1.7	2.0	3.0		
KGD℀	1010JX-2.4	○	○	20	10	2	4.5	8	10	120	18.0	9.00	2.0	2.4	3.0	SB-40120TR	LTW-15S
	1212JX-2.4	○	○	24	12	2	4.5	10	12	120	19.5	11.00	2.0	2.4	3.0		
	1616JX-2.4	○	○	32	16	-	4.5	10	16	120	24.5	15.00	2.0	2.4	3.0		
KGD℀	1212JX-3	○	○	24	12	2	4.5	10	12	120	19.5	10.80	2.4	3.0	3.0	SB-40120TR	LTW-15S
	1616JX-3	○	○	32	16	-	4.5	10	16	120	24.5	14.80	2.4	3.0	4.0		
KGD℀	1616JX-3D38	○	○	38	16	-	6.0	10	16	120	29.0	14.80	2.4	3.0	4.0	SE-50125TR	LTW-20
	2020JX-3D42	○	○	42	20	-	6.0	14	20	120	31.0	18.80	2.4	3.0	4.0		
	2012JX-3D42	○	○	42	20	-	6.0	14	12	120	31.0	10.80	2.4	3.0	4.0		
KGD℀	1212F-1.3	○	○	24	12	2	4.5	10	12	85	19.5	11.50	1.0	1.3	1.5	SB-40120TR	LTW-15S
	1212F-1.5	○	○	24	12	2	4.5	10	12	85	19.5	11.40	1.2	-	1.5	SB-40120TR	LTW-15S
	1212F-2	○	○	24	12	2	4.5	10	12	85	19.5	11.15	1.7	2.0	3.0	SB-40120TR	LTW-15S
	1212F-2.4	○	○	24	12	2	4.5	10	12	85	19.5	11.00	2.0	2.4	3.0	SB-40120TR	LTW-15S

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➔ **G16~** ➔ **G17**

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

KGD (Integral-Style)





Right-hand Shown

Toolholder Dimensions (Inch Size)

Width (mm)	Max. Grooving Depth (mm)	Part Number	Stock R	Stock L	H1=h	H2	H3	B	L1	L2	L3	F1	A	T*	Insert Width W (mm) MIN	Insert Width W (mm) MAX	Spare Parts: Clamp Bolt	Spare Parts: Wrench
2	0.669 (17mm)	KGDR/L 12-2T17	●	●	0.75	-	0.374	0.75	4.92	1.28	-	0.71	0.067	0.669 (17mm)	2.0	3.0	HH5X16	LW-4
		16-2T17	●	●	1.00	-	0.374	1.00	5.90	1.28	-	0.96	0.067		2.0	3.0	HH5X25	
3	0.393 (10mm)	KGDR/L 12-3T10	●	●	0.75	-	0.374	0.75	4.92	1.20	-	0.70	0.094	0.393 (10mm)	3.0	4.0	HH5X16	
		16-3T10	●	●	1.00	-	0.374	1.00	5.90	1.20	-	0.95	0.094		3.0	4.0	HH5X25	
	0.787 (20mm)	KGDR/L 12-3T20	●	●	0.75	-	0.374	0.75	4.92	1.35	-	0.70	0.094	0.787 (20mm)	3.0	4.0	HH5X16	
		16-3T20	●	●	1.00	-	0.374	1.00	5.90	1.39	-	0.95	0.094		3.0	4.0	HH5X25	
4	0.393 (10mm)	KGDR/L 12-4T10	●	●	0.75	-	0.374	0.75	4.92	1.20	-	0.68	0.133	0.393 (10mm)	4.0	5.0	HH5X16	
		16-4T10	●	●	1.00	-	0.374	1.00	5.90	1.20	-	0.93	0.133		4.0	5.0	HH5X25	
	0.787 (20mm)	KGDR/L 12-4T20	●	●	0.75	-	0.374	0.75	4.92	1.35	-	0.68	0.133	0.787 (20mm)	4.0	5.0	HH5X16	
		16-4T20	●	●	1.00	-	0.374	1.00	5.90	1.39	-	0.93	0.133		4.0	5.0	HH5X25	
5	0.393 (10mm	KGDR/L 12-5T10	●	●	0.75	-	0.374	0.75	4.92	1.20	-	0.66	0.173	0.393 (10mm)	5.0	6.0	HH5X16	
		16-5T10	●	●	1.00	-	0.374	1.00	5.90	1.20	-	0.91	0.173		5.0	6.0	HH5X25	
	0.669 (17mm)	KGDR/L 12-5T17	●	●	0.75	-	0.374	0.75	4.92	1.47	-	0.66	0.173	0.669 (17mm)	5.0	6.0	HH5X16	
		16-5T17	●	●	1.00	-	0.374	1.00	5.90	1.47	-	0.91	0.173		5.0	6.0	HH5X25	

* T dimension shows the distance from the toolholder to the cutting edge.
(When using 2-edge insert, the maximum grooving depth is 18mm.)

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above.
Insert table ➡ **G16~** ➡ **G17**

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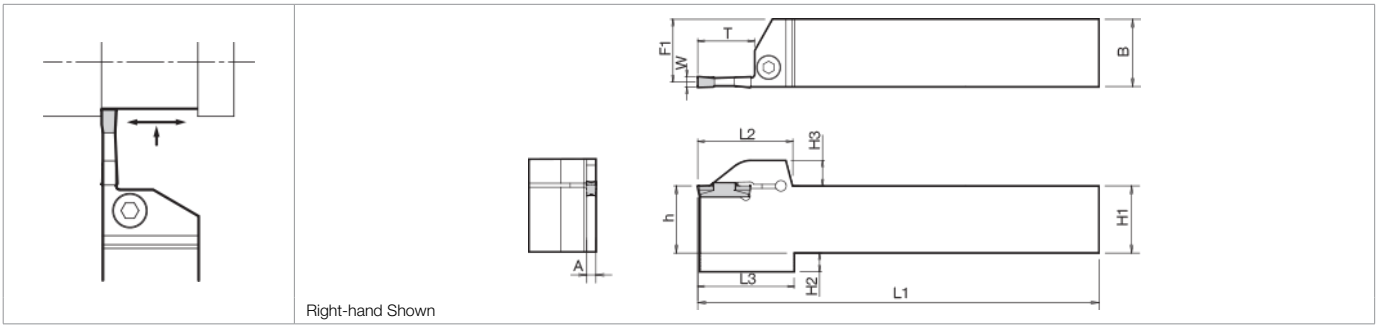
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

KGD (Integral-Style)



Right-hand Shown

Toolholder Dimensions (Metric Size)

Width (mm)	Max. Grooving Depth (mm)	Part Number	Stock R	Stock L	H1=h	H2	H3	B	L1	L2	L3	F1	A	T*	Insert Width W (mm) MIN	Insert Width W (mm) MAX	Spare Parts: Clamp Bolt	Spare Parts: Wrench
2.0	6	KGD 1616H-2T06	○	○	16	4.0	9.5	16	100	27.7	28.0	15.2	1.7	6	2.0	3.0	HH5X16	LW-4
		2020K-2T06	○	○	20	-	9.5	20	125	28.0	-	19.2	1.7	6	2.0	3.0		
	10	KGD 1616H-2T10	○	○	16	4.0	9.5	16	100	30.2	30.5	15.2	1.7	10	2.0	3.0		
		2020K-2T10	○	○	20	-	9.5	20	125	30.5	-	19.2	1.7	10	2.0	3.0		
	17	KGD 1616H-2T17	○	●	16	4.0	9.5	16	100	31.2	31.5	15.2	1.7	17	2.0	3.0		
		2012K-2T17	○	○	20	-	9.5	12	125	32.5	-	11.2	1.7	17	2.0	3.0		
		2020K-2T17	○	○	20	-	9.5	20	125	32.5	-	19.2	1.7	17	2.0	3.0		
NEW 2.4	17	KGD 2012K-2.4T17	○	○	20	-	9.5	12	125	32.5	-	11.0	2.0	17	2.4	3.0	HH5X16	LW-4
		2020K-2.4T17	○	○	20	-	9.5	20	125	32.5	-	19.0	2.0	17	2.4	3.0		
3.0	6	KGD 1616H-3T06	○	○	16	4.0	9.5	16	100	27.7	28.0	14.8	2.4	6	3.0	4.0	HH5X16	LW-4
		2020K-3T06	○	○	20	-	9.5	20	125	28.0	-	18.8	2.4	6	3.0	4.0		
	10	KGD 1616H-3T10	○	○	16	4.0	9.5	16	100	30.2	30.5	14.8	2.4	10	3.0	4.0		
		2020K-3T10	○	○	20	-	9.5	20	125	30.5	-	18.8	2.4	10	3.0	4.0		
	20	KGD 1616H-3T20	○	○	16	4.0	9.5	16	100	34.2	34.5	14.8	2.4	20	3.0	4.0		
		2012K-3T20	○	○	20	-	9.5	12	125	34.5	-	10.8	2.4	20	3.0	4.0		
		2020K-3T20	○	○	20	-	9.5	20	125	34.5	-	18.8	2.4	20	3.0	4.0		
4.0	10	KGD 2020K-4T10	○	○	20	-	9.5	20	125	30.5	-	18.3	3.4	10	4.0	5.0	HH5X16	LW-4
	20	KGD 2020K-4T20	○	○	20	-	9.5	20	125	34.5	-	18.3	3.4	20	4.0	5.0		
5.0	10	KGD 2020K-5T10	○	○	20	-	9.5	20	125	30.5	-	17.8	4.4	10	5.0	6.0	HH5X16	LW-4
	17	KGD 2020K-5T17	○	○	20	-	9.5	20	125	37.5	-	17.8	4.4	17	5.0	6.0	HH5X25	

* T dimension shows the distance from the toolholder to the cutting edge.
(When using 2-edge insert, the maximum grooving depth is 18mm.)

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above.
Insert table ➡ **G16~** ➡ **G17**

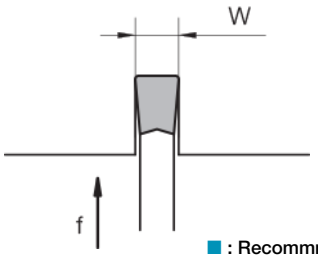
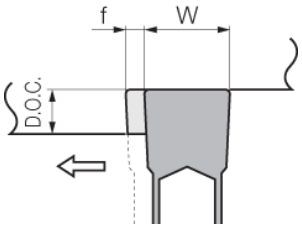
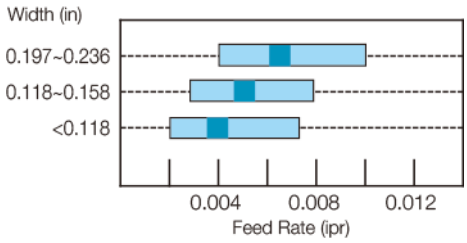
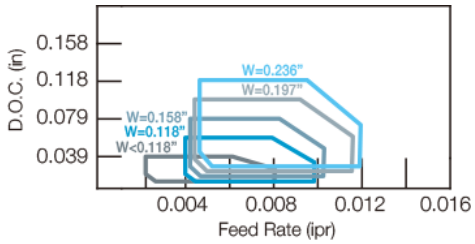
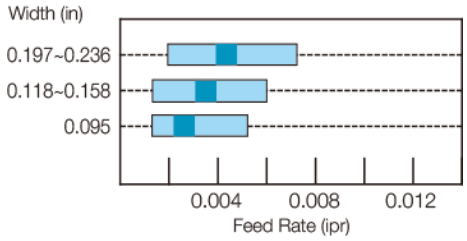
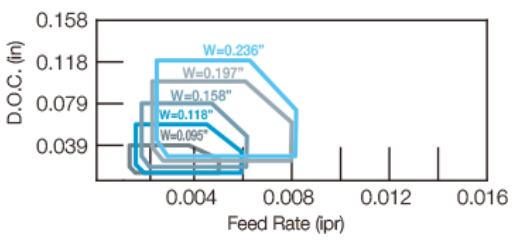
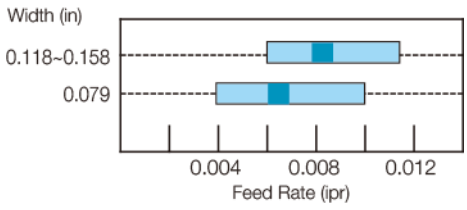
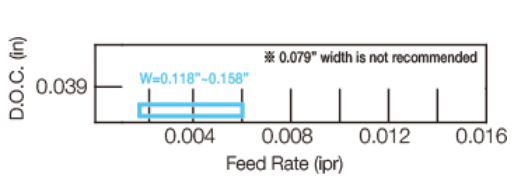
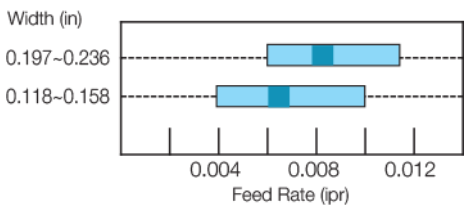
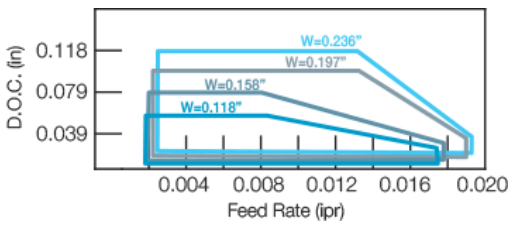
Recommended Cutting Conditions (Vc)

Workpiece Material	Chipbreaker	Recommended Insert Grade (Vc : sfm)							Remarks
		Cermet	MEGACOAT		Carbide	MEGACOAT CBN	CBN	PCD	
		TN90	PR1225	PR1215	GW15	KBN05M	KBN570	KPD001	
Carbon Steel	GM GL CM PH GS PM	☆ 325~725	★ 250~650	☆ 325~650	-	-	-	-	Wet
Alloy Steel		☆ 250~650	★ 225~600	☆ 250~600	-	-	-	-	
Stainless Steel		☆ 225~600	★ 200~500	☆ 200~500	-	-	-	-	
Cast Iron		-	-	★ 325~650	-	-	-	-	
Aluminum	GS NB	-	-	-	☆ 650~1650	-	-	★ 500~6550	
Brass		-	-	-	☆ 325~650	-	-	★ 650~2625	
Hardened Material	NB	-	-	-	-	★ 250~500	-	-	
Powdered Steel		-	-	-	-	-	★ 325~825	-	

★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (Feed Rate • D.O.C.)

(Workpiece Material : 1049)

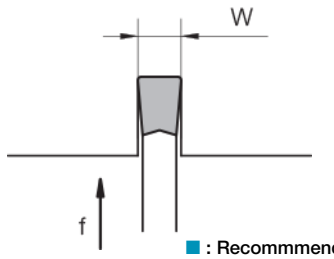
Chipbreaker	Grooving	Traversing
	 ■ : Recommmended feed value	
GM (General Purpose)		
GL (Low Feed)		
PH (High Feed Rate)		
CM (Copying)		

1) The above values reflect a T dimension that is 0.669" (17mm) or less.
2) If the toolholder is not for the 8mm width insert and its T dimension is over 0.669" (17mm), set the values for longitudinal turning to less than 90% of those above.

Recommended Cutting Conditions (Feed Rate • D.O.C.)

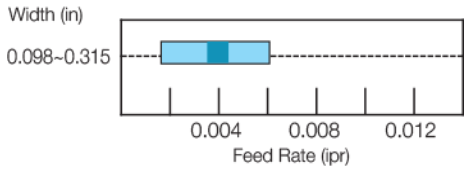
(Workpiece Material : 1049)

Chipbreaker — Grooving



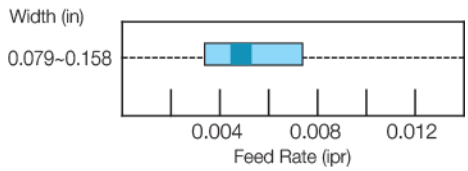
■ : Recommmended feed value

GS (Low Cutting Force)



※ When traversing, keep D.O.C. less than the Corner-R(rε)

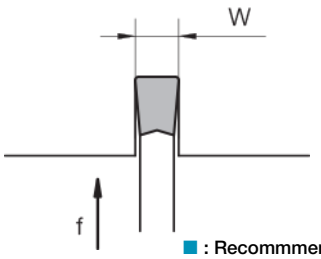
PM (Cut-Off)



1) The above values reflect a T dimension that is 0.669" (17mm) or less.

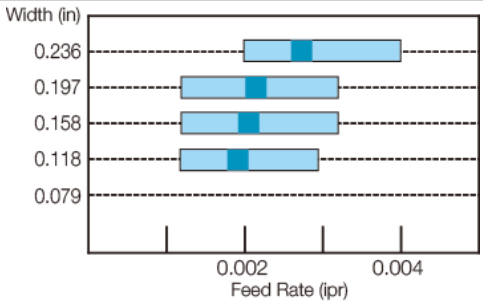
Recommended Cutting Conditions (Feed Rate)

Workpiece Material / Grade — Grooving

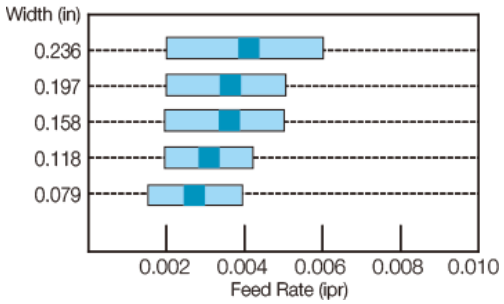


■ : Recommmended feed value

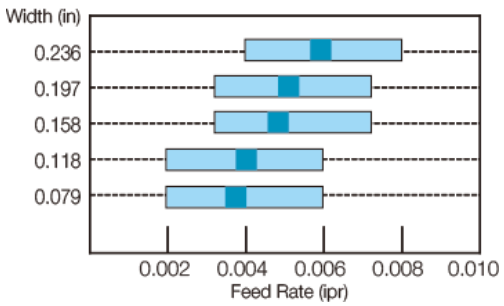
Hard Material — KBN05M



Powdered Steel — KBN570



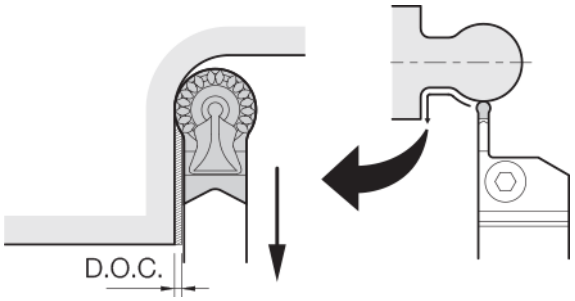
Aluminum / Brass — KPD001



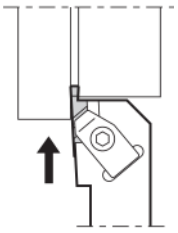
CM Chipbreakers (Back Turning)

● Estimated maximum cutting amount (D.O.C.) for back copying

Part Number		Max. D.O.C. (in) Toolholder Part No.				
		KGD...2T...	KGD...3T...	KGD...4T...	KGD...5T...	KGD...6T...
GDM	3020N-150R-CM	0.009	0.008			
	4020N-200R-CM		0.009	0.008		
	5020N-250R-CM			0.012	0.008	
	6020N-300R-CM				0.012	0.010



KKC



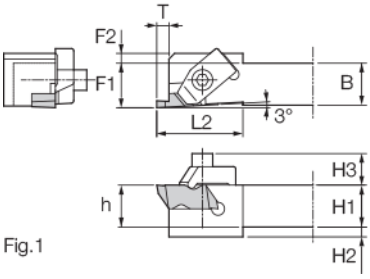


Fig.1

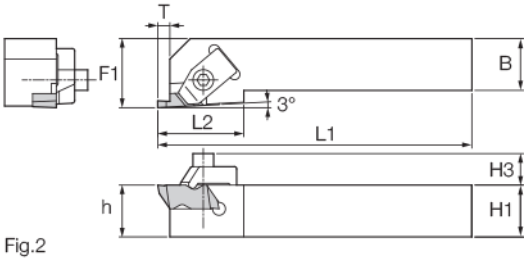


Fig.2

Toolholder Dimensions (Inch Size)

Part Number	Stock		Unit	Dimensions									Fig	Spare Parts		
														Clamp	Clamp Bolt	Wrench
	R	L		H1=h	H2	H3	B	L1	L2	F1	F2	T*				
KKC 1212M-2-150F	●		mm	12	-	9.2	12	150	19.05	12.25	-	3.5	1	CKC-2	SKC-2	(7/64 hex)
KKC 6-2X	●	●	inch	0.375	-	0.362	0.375	2.500	0.750	0.562	-	0.138	2	CKC-2	SKC-2	(7/64 hex)
6-2CF	●	●		0.375	0.125	0.362	0.375	5.000	0.750	0.385	0.125	0.138	1			
8-2X	●	●		0.500	-	0.362	0.500	3.500	0.750	0.750	-	0.138	2			
8-2DF	●	●		0.500	-	0.362	0.500	6.000	0.750	0.510	-	0.138	1			
10-2DF	●	●		0.625	-	0.362	0.625	6.000	0.750	0.635	-	0.138	1			

* T dimension shows the distance from the toolholder to the cutting edge.

- Note: Right hand bars require right hand inserts and clamps
- Left hand bars require left hand inserts and clamps

Applicable Inserts ➔ G25

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
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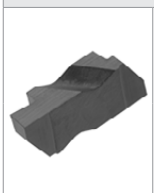
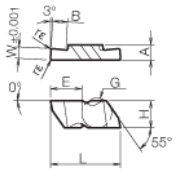
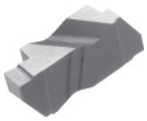
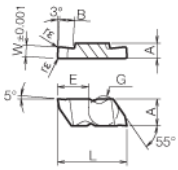
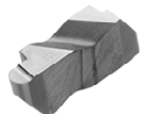
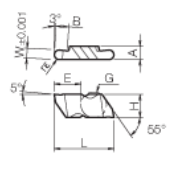
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

KCG / KCGP / KCRP

Insert		Part Number		Dimensions (in)							Cermet		MEGA COAT CVD	Carbide			Ceramic
				W±0.001"	B	R	A	L	H	E	TC40	TC60	PR1215	PR660	PR930	KW10	A65
		KCG	2062ℝ	0.062	0.110	0.008	0.150	0.350	0.219	0.270							●
			2125ℝ	0.125	0.110	0.008	0.150	0.350	0.219	0.270							Ⓛ
		KCGP	2031ℝ	0.031	0.050	0.003	0.150	0.350	0.219	0.270	●	●	●	●	●	●	
			2041ℝ	0.041	0.050	0.003	0.150	0.350	0.219	0.270	●	●	●		●		
			2047ℝ	0.047	0.050	0.003	0.150	0.350	0.219	0.270	●	●	●	●	●	●	
		KCGP	2058ℝ	0.058	0.110	0.008	0.150	0.350	0.219	0.270	●		●		●		
			2062ℝ	0.062	0.110	0.008	0.150	0.350	0.219	0.270	●	●	●	●	●	●	
		KCGP	2094ℝ	0.094	0.110	0.008	0.150	0.350	0.219	0.270	●		●	●	●	●	
			2125ℝ	0.125	0.110	0.008	0.150	0.350	0.219	0.270	●		●	Ⓡ	●	Ⓡ	
		KCRP	2031ℝ	0.062	0.094	0.031	0.150	0.350	0.219	0.270		Ⓡ	●	Ⓡ	Ⓡ		
			2039ℝ	0.078	0.110	0.039	0.150	0.350	0.219	0.270					●		
			2047ℝ	0.094	0.150	0.047	0.150	0.350	0.219	0.270			●				
			2062ℝ	0.125	0.150	0.062	0.150	0.350	0.219	0.270		Ⓡ	●				

Applicable Toolholders ➔ G24

Recommended Cutting Conditions Cera-Notch

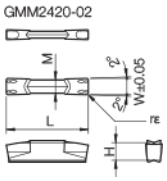
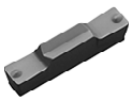
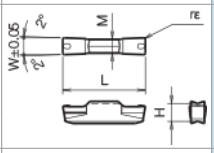
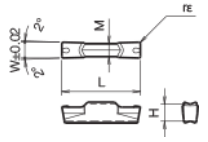
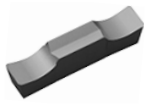
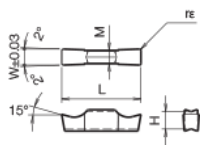
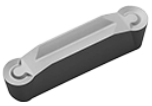
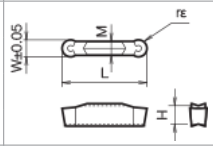
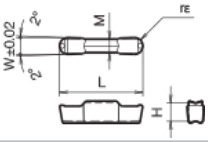
Workpiece Material	Cermet Feeds (ipr)	Carbide Feeds (ipr)	Recommended Insert Grade (Vc : sfm)						
			Cermet		MEGACOAT	Carbide			Ceramic
			TC40	TC60	PR1215	PR660	PR930	KW10	A65
Carbon Steel	0.002~0.005	0.002~0.010	300~900	250~900	300~800	200~550	250~650	-	-
Alloy Steel	0.002~0.005	0.002~0.010	250~800	250~800	300~750	100~500	150~550	-	-
Stainless Steel	0.002~0.005	0.002~0.010	-	200~600	300~600	100~550	100~550	-	-
Tool Steel	0.002~0.005	0.002~0.010	200~650	200~650	300~600	-	100~550	-	-
Hardened Steel (>45Rc)	-	-	-	-	-	-	-	-	250~500*
Gray Cast Iron	0.003~0.006	0.002~0.012	200~700	-	300~700	-	-	-	500~1000
Ductile Iron	0.003~0.006	0.002~0.012	-	150~600	300~600	-	-	-	500~1000
Aluminum	0.002~0.008	0.002~0.012	150~1600	-	-	-	-	500~1600	-

Speeds & Feeds listed are for external grooving. Reduce parameters by 10% for internal grooving.
*Feeds = 0.003~0.008ipr

GMM / GMG

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel			◔	●		
M	Stainless Steel			●	◔		
K	Cast Iron					●	◔
N	Non-ferrous Metals						●
S	Titanium Alloy						●
H	Hard materials (≤40HRC)			○	●		
	Hard materials (≥40HRC)						

Insert (Right-handed Insert Shown)		Part Number	Previous Part Number	Dimmensions (mm) W inch	W mm	rε	M	L	H	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PR930	PR905	Carbide KW10	Ref. Page for Toolholder
 Chip Control Oriented M-Class		GMM 2420-020MW	GMM 2420-02	0.095	2.4	0.2	1.9	20	4.3	●	●	○	○	○	●	
		3020-020MW	3020-02	0.118	3.0	0.2	2.3	20	4.3	○	○	○	○	○	○	
		3020-040MW	3020-04	0.118	3.0	0.4	2.3	20	4.3	●		○	●	○	●	
		4020-020MW	4020-02	0.158	4.0	0.2	3.3	20	4.3	○	○	○	○	○	○	
		4020-040MW	4020-04	0.158	4.0	0.4	3.3	20	4.3	●	●	●	●	○	●	
		4020-080MW	4020-08	0.158	4.0	0.8	3.3	20	4.3	○	○	○	○	○	○	
		5020-040MW	5020-04	0.197	5.0	0.4	4.2	20	4.3	○	○	●	○	○	○	
		5020-080MW	5020-08	0.197	5.0	0.8	4.2	20	4.3	○	●	○	●	○	●	
		6020-040MW	6020-04	0.236	6.0	0.4	5.2	20	4.3		○	●	○	○	○	
		6020-080MW	6020-08	0.236	6.0	0.8	5.2	20	4.3	●	○	○	●	○	○	
 Sharp Cutting Oriented M-Class		GMM 3020-020MS	GMM 3020-02MS	0.118	3.0	0.2	2.3	20	4.3	○	○	○	○		○	
		3020-040MS	3020-04MS	0.118	3.0	0.4	2.3	20	4.3	○	○	○	○		○	
		4020-040MS	4020-04MS	0.158	4.0	0.4	3.3	20	4.3	○	○	○	●		○	
		5020-040MS	5020-04MS	0.197	5.0	0.4	4.2	20	4.3	○		●	○		○	
		6020-040MS	6020-04MS	0.236	6.0	0.4	5.2	20	4.3		○		●		○	
 Sharp Cutting Oriented Precision Class		GMG 3020-000MS	GMG 3020-00	0.118	3.0	0.0	2.3	20	4.3	○	●	○	○		●	
		3020-020MS	3020-02	0.118	3.0	0.2	2.3	20	4.3	○	●	○	○		●	
		3020-040MS	3020-04	0.118	3.0	0.4	2.3	20	4.3	○	●	○	○		●	
		4020-020MS	4020-02	0.158	4.0	0.2	3.3	20	4.3	○	○		○		○	
		4020-040MS	4020-04	0.158	4.0	0.4	3.3	20	4.3	○	●	○	●		○	
		4020-080MS	4020-08	0.158	4.0	0.8	3.3	20	4.3	○	●	○	○		○	➔ G31
		5020-040MS	5020-04	0.197	5.0	0.4	4.2	20	4.3	○	●	○	○		●	
		5020-080MS	5020-08	0.197	5.0	0.8	4.2	20	4.3	○	○	○	○		○	
		6020-040MS	6020-04	0.236	6.0	0.4	5.2	20	4.3	○	●		○		○	
		6020-080MS	6020-08	0.236	6.0	0.8	5.2	20	4.3	○	○		○		●	
 Sharp Cutting Oriented Ground Chipbreaker		GMG 2520-030MG	GMG 2520-03MG	0.098	2.5	0.3	2.0	20	4.3	○		○	○	○	○	
		3020-030MG	3020-03MG	0.118	3.0	0.3	2.3	20	4.3	○	○	○	○	○	○	
		3520-030MG	3520-03MG	0.138	3.5	0.3	2.8	20	4.3	○	○	○	○	○	○	
		4020-040MG	4020-04MG	0.158	4.0	0.4	3.3	20	4.3	○	○	○	○	○	○	
		5020-040MG	5020-04MG	0.197	5.0	0.4	4.2	20	4.3	○	○	○	○	○	○	
		6020-040MG	6020-04MG	0.236	6.0	0.4	5.2	20	4.3	○	○		○	○	○	
 Chip Control Oriented M-Class		GMM 3020-150R	GMM 3020-15R	0.118	3.0	1.5	2.3	20	4.3	●	●	○	○	○	○	
		4020-200R	4020-20R	0.158	4.0	2.0	3.3	20	4.3	○	●	○	○	○	○	
		5020-250R	5020-25R	0.197	5.0	2.5	4.2	20	4.3	○	●	○	○	○	○	
		6020-300R	6020-30R	0.236	6.0	3.0	5.2	20	4.3	●	○	○	○	○	○	
 Sharp Cutting Oriented Full-R / Copying		GMG 3020-150R	GMG 3020-15R	0.118	3.0	1.5	2.3	20	4.3	○	●		○		○	
		4020-200R	4020-20R	0.158	4.0	2.0	3.3	20	4.3	○	●		○		○	
		5020-250R	5020-25R	0.197	5.0	2.5	4.2	20	4.3	○	●		○		●	
		6020-300R	6020-30R	0.236	6.0	3.0	5.2	20	4.3	○	●		○		○	

Recommended Cutting Conditions ➔ G29

Inserts are sold in 10 piece boxes.

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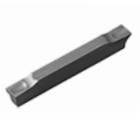
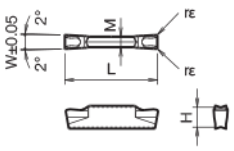
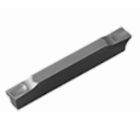
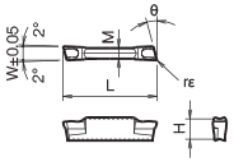
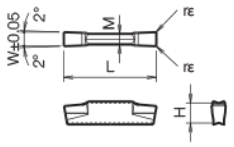
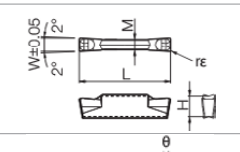
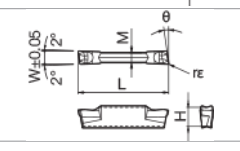
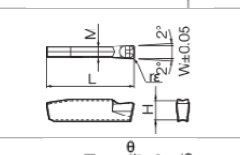
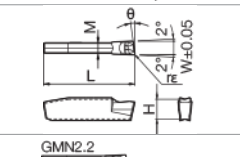
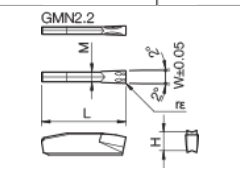
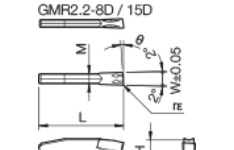
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

GMM / GMN / GMR/L

Classification of Usage
- ● : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel			◔	●	
M	Stainless Steel			●	◔	
K	Cast Iron					●
N	Non-ferrous Metals					●
S	Titanium Alloy					●
H	Hard materials (≤40HRC)			○	●	
	Hard materials (≥40HRC)					

Insert (Right-handed Insert Shown)		Part Number	W inch	W mm	rε	M	L	H	Angle (°) θ	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PVD Coated Carbide PR930	Carbide KW10	Ref. Page for Toolholder
 Deep Grooving / Cut-Off Sharp Cutting Oriented		GMM 1520-MT	0.059	1.5	0.00	1.2	20	4.3	-				●	●	
			0.059	1.5	0.05	1.2	20	4.3	-			●			
		2020-MT	0.079	2.0	0.00	1.5	20	4.3	-				●	○	
			0.079	2.0	0.05	1.5	20	4.3	-			●			
		2520-MT	0.098	2.5	0.00	1.9	20	4.3	-				●	○	
			0.098	2.5	0.05	1.9	20	4.3	-		○	○			
		3020-MT	0.118	3.0	0.00	2.3	20	4.3	-				●	○	
			0.118	3.0	0.05	2.3	20	4.3	-		○	●			
 Cut-Off Sharp Cutting Oriented with Lead Angle		GMR 1520-MT-15D	0.059	1.5	0.00	1.2	20	4.3	15°				●	Ⓡ	
			0.059	1.5	0.05	1.2	20	4.3	15°			Ⓡ			
		2020R/L-MT-15D	0.079	2.0	0.00	1.5	20	4.3	15°				●	○	
			0.079	2.0	0.05	1.5	20	4.3	15°		○	Ⓡ			
		2520R/L-MT-15D	0.098	2.5	0.00	1.9	20	4.3	15°				●	○	
			0.098	2.5	0.05	1.9	20	4.3	15°		○	Ⓡ			
		3020R/L-MT-15D	0.118	3.0	0.00	2.3	20	4.3	15°				●	Ⓛ	
			0.118	3.0	0.05	2.3	20	4.3	15°		●	Ⓡ			
 Deep Grooving / Cut-Off Sharp Cutting Oriented Without Chipbreaker		GMM 1520-NB	0.059	1.5	0.00	1.2	20	4.3	-				○	○	
			0.059	1.5	0.05	1.2	20	4.3	-						
		2020-NB	0.079	2.0	0.00	1.5	20	4.3	-				○	○	
			0.079	2.0	0.05	1.5	20	4.3	-		○				
		2520-NB	0.098	2.5	0.00	1.9	20	4.3	-				○	○	
			0.098	2.5	0.05	1.9	20	4.3	-		○				
		3020-NB	0.118	3.0	0.00	2.3	20	4.3	-				○	○	
			0.118	3.0	0.05	2.3	20	4.3	-		○				
 Deep Grooving / Cut-Off Stability Oriented		GMM 2020-TK	0.079	2.0	0.20	1.5	20	4.3	-			○	●	○	
		2520-TK	0.098	2.5	0.20	1.9	20	4.3	-		○	○	○	○	
		3020-TK	0.118	3.0	0.25	2.3	20	4.3	-		○	●	●	○	
 Cut-Off Stability Oriented With Lead Angle		GMM 2020R/L-TK-8D	0.079	2.0	0.20	1.5	20	4.3	8°			Ⓡ	Ⓡ	Ⓡ	G31
		2520R/L-TK-8D	0.098	2.5	0.20	1.9	20	4.3	8°		Ⓡ	Ⓡ	Ⓡ	Ⓡ	
		3020R/L-TK-8D	0.118	3.0	0.25	2.3	20	4.3	8°		Ⓡ	Ⓡ	Ⓡ	Ⓡ	
 Cut-Off Stability Oriented 1-Edge		GMN 2-TK	0.079	2.0	0.20	1.5	20	4.3	-			○	○	○	
		3-TK	0.118	3.0	0.25	2.3	20	4.3	-		○	○	○	○	
		4-TK	0.158	4.0	0.30	3.3	20	4.3	-		○	○	○	○	
 Cut-Off Stability Oriented 1-Edge with Lead Angle		GMR 2-TK-8D	0.079	2.0	0.20	1.5	20	4.3	8°			Ⓡ	Ⓡ	Ⓡ	
		3-TK-8D	0.118	3.0	0.25	2.3	20	4.3	8°		Ⓡ	Ⓡ	Ⓡ	Ⓡ	
		4-TK-8D	0.158	4.0	0.30	3.3	20	4.3	8°		Ⓡ	Ⓡ	Ⓡ	Ⓡ	
 Deep Grooving / Cut-Off 1-Edge		GMN 2.2	0.087	2.2	0.17	1.8	20	4.3	-	○	●		○	●	
		3	0.118	3.0	0.20	2.3	20	4.3	-	○	●		●	●	
		4	0.158	4.0	0.25	3.3	20	4.3	-	○			●	●	
		5	0.197	5.0	0.80	4.2	20	4.3	-	○	○		○	○	
		6	0.236	6.0	0.80	5.2	20	4.3	-	○	○		○	○	
 Cut-Off Sharp Cutting Oriented 1-Edge with Lead Angle		GMR 2.2-8D	0.087	2.2	0.17	1.8	20	4.3	8°	Ⓡ	Ⓡ		Ⓡ	●	
		2.2-15D	0.087	2.2	0.00	1.8	20	4.3	15°	Ⓡ	○		○	○	
		3-4D	0.118	3.0	0.20	2.3	20	4.3	4°	Ⓡ	●		○	Ⓡ	
		4-4D	0.158	4.0	0.25	3.3	20	4.3	4°		○		Ⓡ		

Recommended Cutting Conditions ➔ G29

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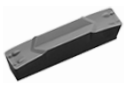
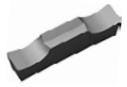
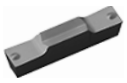
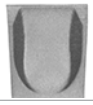
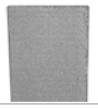
Multi-Function CERACUT
Plunge & Turn Chipbreakers

Name	Shape	Advantages
GMM...MW		Excellent chip evacuation during grooving, traversing, and cut-off
GMG...MG		Low cutting forces with ground chipbreaker
GMG...MS GMM...MS		Grooving, traversing and cut-off operations are minimum cutting forces with positive edge
GMM...MT		Small corner-R(rε) minimizes the core which remains in the center of the face
GMM...TK		Large corner-R(rε) with stable performance during cut-off
GMM...NB		Flat rake face without chipbreaker. Good performance for brass.

Edge Preparation

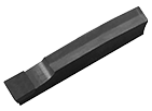
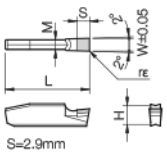
Edge Preparation	Chamfered + Honed Cutting Edge Corner-R(rε) 0.05	Chamfered + Honed Cutting Edge Sharp Edge
		
Chipbreaker	**CR9025 / PR915**	**PR930 / KW10**
Edge Preparation	Chamfered + Honed Cutting Edge Corner-R(rε) 0.20~0.30	Sharp Edge Corner-R(rε) 0.20~0.30
		
Chipbreaker	**CR9025 / PR915**	**PR930 / KW10**
Edge Preparation	Honed Cutting Edge Corner-R(rε)	Sharp Edge Sharp Corner
		
Without Chipbreaker	**CR9025**	**PR930 / KW10**

• Sharp edge spec. can reduce cutting resistance 40% less than that of chamfer edge

GMM / GMG

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel				
M	Stainless Steel				
K	Cast Iron				
N	Non-ferrous Metals			●	
S	Titanium Alloy			●	
H	Hard materials (≤40HRC)				
	Hard materials (≥40HRC)	○	●		

Insert	Part Number	Dimensions (mm) W inch	W mm	rε	M	L	H	S	Angle (°)	CBN KBN510	CBN KBN525	PCD KPD001	PCD KPD010	Ref. Page for Toolholder
 Deep Grooving 1-Edge	GMN 2	0.079	2.0	0.2	1.8	20	4.3	2.9				○	○	
 S=2.9mm		0.079	2.0	0.4	1.8	20	4.3	2.9		○	○			
	3	0.118	3.0	0.2	2.3	20	4.3	2.9				○	○	
		0.118	3.0	0.4	2.3	20	4.3	2.9		○	○			
	4	0.158	4.0	0.2	3.3	20	4.3	2.9				○	○	
		0.158	4.0	0.4	3.3	20	4.3	2.9		○	○			
	5	0.197	5.0	0.2	4.2	20	4.3	2.9				○	○	
		0.197	5.0	0.4	4.2	20	4.3	2.9		○	○			
	6	0.236	6.0	0.2	5.2	20	4.3	2.9					○	
		0.236	6.0	0.4	5.2	20	4.3	2.9		○	○			

G31

GMN Cutting Conditions (CBN / PCD)

Workpiece Material	Recommended Insert Grade (Vc sfm) PCD KBN510 KBN525	PCD KPD001 (KPD010)	① f (feed) during Grooving (ipr) ② f (feed) during Turning (ipr) ③ D.O.C. during Turning (in) GMN2	GMN3	GMN4 GMN5	GMN6	Remarks
Aluminum	-	★ 500~6550	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0197	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0315	① 0.0031~0.0071 ② 0.0031~0.0071 ③ Max. 0.0315	① 0.0039~0.0079 ② 0.0039~0.0079 ③ Max. 0.0315	Wet
Brass	-	★ 650~2625	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0197	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0315	① 0.0031~0.0071 ② 0.0031~0.0071 ③ Max. 0.0315	① 0.0039~0.0079 ② 0.0039~0.0079 ③ Max. 0.0315	
Cast Iron	★ 500~1300	-	① 0.0016~0.0035 ② 0.0016~0.0035 ③ Max. 0.0118	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0047 ③ Max. 0.0197	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0315	
Hard Materials	★ 250~400	-	① 0.0008~0.0020 ② 0.0004~0.0012 ③ Max. 0.0039	① 0.0012~0.0028 ② 0.0004~0.0020 ③ Max. 0.0079	① 0.0012~0.0031 ② 0.0012~0.0031 ③ Max. 0.0118	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0157	

★ : 1st Recommendation ☆ : 2nd Recommendation

Inserts are sold in 1 piece boxes.

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World Express (Shipping: 7-10 Business Days) : ○

CERACUT Plunge & Turn Recommended Cutting Conditions

GMG / GMM / GMN Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)						Grooving				Turning				Remarks
	Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide	Width				Width				
	TN90	CR9025	PR915	PR930	PR905	KW10	0.079"~0.118" (2.0mm~3.0mm)	0.158" (4.0mm)	0.197" (5.0mm)	0.236" (6.0mm)	0.079"~0.118" (2.0mm~3.0mm)	0.158" (4.0mm)	0.197" (5.0mm)	0.236" (6.0mm)	
							Feed Rate (ipr)				Feed Rate (ipr)				
Carbon Steel	☆ 325~725	☆ 250~650	☆ 250~650	★ 250~650	-	-	0.002~0.006	0.004~0.010	0.006~0.014	0.008~0.014	0.004~0.008	0.006~0.012	0.008~0.016	0.010~0.016	Wet
Alloy Steel	☆ 250~650	☆ 225~600	☆ 225~600	★ 225~600	-	-	0.002~0.006	0.004~0.010	0.006~0.014	0.008~0.014	0.004~0.008	0.006~0.012	0.008~0.016	0.010~0.016	
Stainless Steel	☆ 225~525	☆ 200~500	★ 200~500	☆ 200~500	-	-	0.002~0.006	0.004~0.008	0.006~0.014	0.008~0.014	0.004~0.008	0.006~0.010	0.008~0.016	0.010~0.016	
Cast Iron	-	-	-	-	★ 325~650	☆ 225~500	0.002~0.008	0.004~0.012	0.006~0.016	0.008~0.016	0.004~0.010	0.006~0.014	0.008~0.018	0.010~0.018	
Aluminum	-	-	-	-	-	★ 650~1650	0.002~0.008	0.003~0.010	0.004~0.010	0.005~0.012	0.004~0.008	0.004~0.010	0.004~0.010	0.006~0.012	
Brass	-	-	-	-	-	★ 325~650	0.002~0.006	0.003~0.008	0.004~0.010	0.005~0.012	0.004~0.008	0.004~0.010	0.004~0.010	0.006~0.012	

★ : 1st Recommendation ☆ : 2nd Recommendation

Turning Conditions

① **KGM Toolholder**

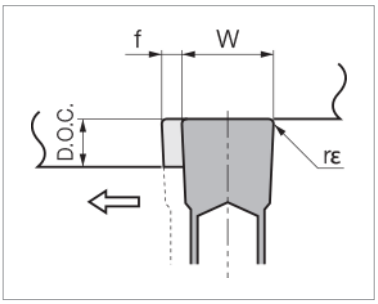
	Recommended Cutting Conditions	
D.O.C.(MAX) (in)	Under 80% of Edge Width	D.O.C.≤0.0315w
f(MAX) (ipr)	Under 10% of Edge Width	f≤0.0039w

• (D.O.C.) x (f) should not exceed 1/2 of D.O.C.(MAX) x f(MAX)

Load (in^2) \ Edge Width (in)	0.079"~0.098" (2.0~2.5mm)	0.118" (3.0mm)	0.158" (4.0mm)	0.197" (5.0mm)	0.236" (6.0mm)
D.O.C. x Feed Rate (f)	Under 0.008"	Under 0.014"	Under 0.025"	Under 0.039"	Under 0.057"

• D.O.C. x f ≤ ½ x 0.0315w x 0.0039w = $0.0016w^2$

② **KGM-T Toolholder** (Deep Grooving)
Use KGM-T toolholder under 90% lower cutting conditions than the KGM Toolholder

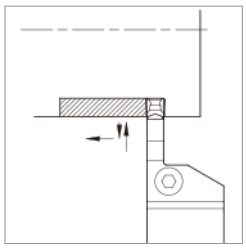


Guide for External Machining

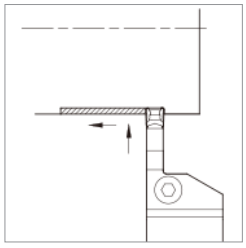
Point (I) (Turning After Grooving)

1. Grooving Depths Over 0.020" : At Roughing (**Fig.1**)
   Before traversing, pull the tool back about 0.004" after grooving, instead of traversing subsequent to grooving.
   (Failure to pull the tool back before traverse cutting will result in an unbalanced load applied on only one side of the cutting edge.)

2. Grooving Depths Under 0.020" : At Finishing (**Fig.2**)
   Traversing subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge.
   (Dwell-motion is not necessary)



Before traversing, pull the tool back about 0.004" after grooving.
(Grooving depth over 0.020" : At roughing)
Fig.1



Traversing subsequent to grooving.
(Grooving depth under 0.020" : At Finishing)
Fig.2

Point (II)

When widening the groove width, apply the "Step Turning" as shown in **Fig.3**

The widened groove and side walls should be finished last.
(For better chip control, D.O.C. over 0.020" is recommended.)

Note: If the workpiece is not supported at the center, reduce the feed rate when grooving towards center

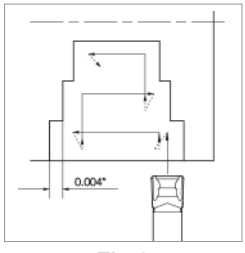
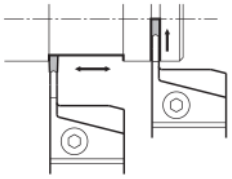
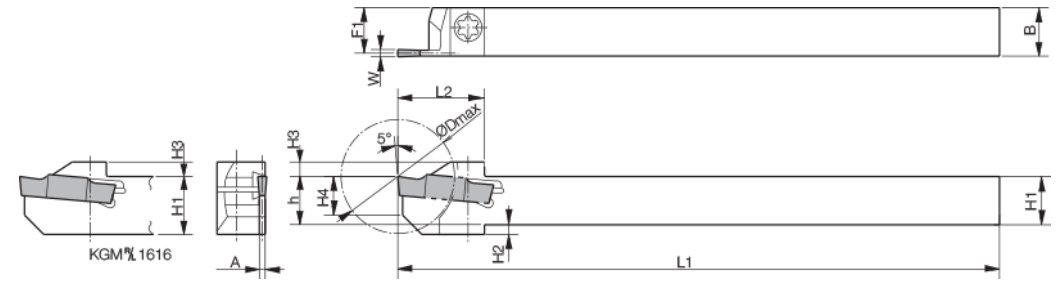


Fig.3

KGM (Swiss)

Width : 1.5mm ~ 4.0mm





Right-hand Shown

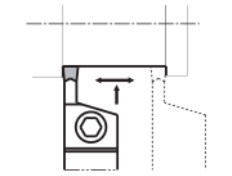
Toolholder Dimensions

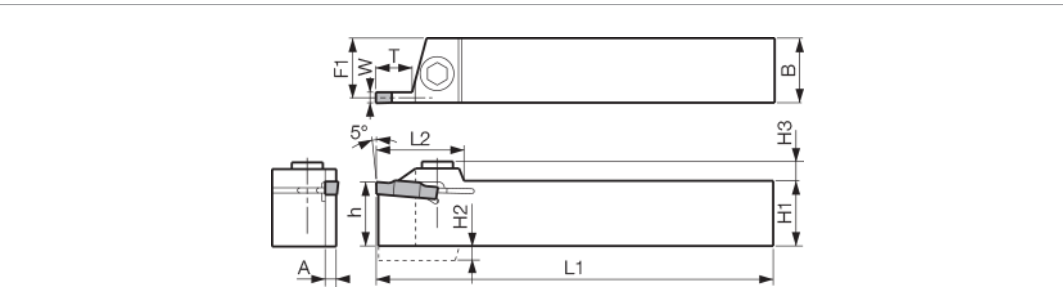
Part Number	Stock		Cutting Dia.	Dimensions (mm)									Insert Width W (mm)		Spare Parts	
															Clamp Bolt	Wrench
	R	L	ØDmax	H1=h	H2	H3	H4	B	L1	L2	F1	A	MIN	MAX		
KGM 1010JX-1.5	○	○	20	10	2	3	8	10	120	18.0	9.40	1.2	1.5	2.0	SE-40120TR	LTW-15S
1212JX-1.5	○	○	25	12	2	4	10	12	120	19.0	11.40	1.2	1.5	2.0		
KGM 1010JX-2	○	○	20	10	2	3	8	10	120	18.0	9.15	1.7	2.0	3.0	SE-40120TR	LTW-15S
1212JX-2	○	○	25	12	2	4	10	12	120	19.0	11.15	1.7	2.0	3.0		
1616JX-2	●	●	32	16	-	4	9	16	120	24.5	15.15	1.7	2.0	3.0	SE-50125TR	LTW-20
KGM 1010JX-2.5	○	○	20	10	2	3	8	10	120	18.0	9.00	2.0	2.4	3.0	SE-40120TR	LTW-15S
1212JX-2.5	○	○	25	12	2	4	10	12	120	19.0	11.00	2.0	2.4	3.0		
1616JX-2.5		●	32	16	-	4	9	16	120	24.5	15.00	2.0	2.4	3.0	SE-50125TR	LTW-20
KGM 1616JX-3	○	○	32	16	-	4	9	16	120	24.5	14.80	2.4	3.0	4.0	SE-50125TR	LTW-20
KGM 1212F-1.5-85	○		25	12	2	4	10	12	85	19.0	11.40	1.2	1.5	2.0	SE-40120TR	LTW-15S
KGM 1212F-2-85	○		25	12	2	4	10	12	85	19.0	11.15	1.7	2.0	3.0	SE-40120TR	LTW-15S
KGM 1212F-2.5-85	○		25	12	2	4	10	12	85	19.0	11.00	2.0	2.4	3.0	SE-40120TR	LTW-15S

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➡ **G26~** ➡ **G28**

KGM

Width : 3.0mm ~ 6.0mm





Right-hand Shown

Toolholder Dimensions

Part Number	Stock		Unit	Dimensions									Insert Width W (mm)		Spare Parts			
															Screw		Wrench	
	R	L		H1=h	H2	H3	B	L1	L2	F1	A	T	MIN	MAX				
KGM 12-3	●		inch	0.75	-	0.217	0.75	5.0	1.07	0.702	0.094	0.354	3.0	4.0	-	HH5X16	-	LW-4
16-3	●			1.00	-	0.217	1.00	6.0	1.07	0.953	0.094	0.354	3.0	4.0	-	HH5X25	-	LW-4
KGM 1212H-3	○	○	mm	12	4	6	12	100	27	10.8	2.4	9	3.0	3.0	SB-5TR	-	LTW-20	-
1616H-3	●	○		16	4	7	16	100	27	14.8	2.4	9	3.0	4.0	-	HH5X16	-	LW-4
2020K-3	○	○		20	-	7	20	125	27	18.8	2.4	9	3.0	4.0				
KGM 2020K-4	○	○		20	-	7	20	125	27	18.3	3.4	10	4.0	5.0	-	HH5X16	-	LW-4
KGM 2020K-5	○	○		20	-	7	20	125	27	17.8	4.4	10	5.0	6.0	-	HH5X16	-	LW-4

- Dimension T shows available grooving depth
- 4.0mm width insert can be installed in KGM 1212H-3, but is not recommended due to the toolholder's rigidity

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above.
Insert table ➡ **G26~** ➡ **G28**

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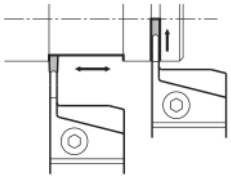
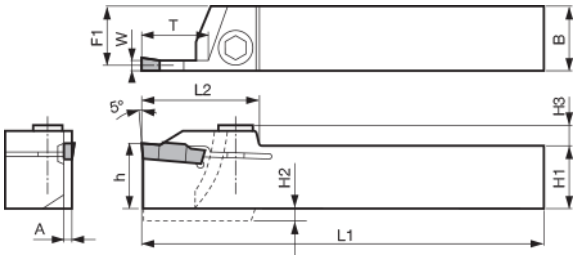
KGM-T (Deep Grooving)

Width : 2.0mm ~ 5.0mm





Right-hand Shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Dimensions H1=h	H2	H3	B	L1	L2	F1	A	T	Insert Width W (mm) MIN	MAX	Spare Parts Screw		Wrench	
KGMR/L 12-2T	●	●	inch	0.75	-	0.24	0.75	5.0	1.30	0.717	0.067	0.669	2.0	3.0	-	HH5X16	-	LW-4
16-2T	●			1.00	-	0.24	1.00	6.0	1.30	0.967	0.067	0.669	2.0	3.0	-	HH5X25	-	LW-4
12-3T	●	●		0.75	-	0.24	0.75	5.0	1.42	0.702	0.094	0.790	3.0	4.0	-	HH5X16	-	LW-4
16-3T		●		1.00	-	0.24	1.00	6.0	1.42	0.953	0.094	0.790	3.0	4.0	-	HH5X25	-	LW-4
12-4T	●	●		0.75	-	0.24	0.75	5.0	1.42	0.683	0.134	0.790	4.0	5.0	-	HH5X16	-	LW-4
16-4T	●			1.00	-	0.24	1.00	6.0	1.22	0.933	0.134	0.990	4.0	5.0	-	HH5X25	-	LW-4
16-5T	●	●		1.00	-	0.24	1.00	6.0	1.22	0.913	0.173	0.990	5.0	6.0	-	HH5X25	-	LW-4
KGMR/L 2012K-2T17	○	○	mm	20	-	7.0	12	125	33	11.15	1.7	17	2.0	3.0	SB-5TR	-	LTW-20	-
2020K-2T17	○	○		20	-	7.0	20	125	33	19.15	1.7	17	2.0	3.0	-	HH5X16	-	LW-4
KGMR/L 1616H-3T20	●	●		16	4	7.0	16	100	36	14.80	2.4	20	3.0	4.0	-	HH5X16	-	LW-4
2012K-3T20	○	○		20	-	7.0	12	125	36	10.80	2.4	20	3.0	4.0	SB-5TR	-	LTW-20	-
2020K-3T20	○	○		20	-	7.0	20	125	36	18.80	2.4	20	3.0	4.0	-	HH5X16	-	LW-4
KGMR/L 2020K-4T20	○	○		20	-	7.5	20	125	36	18.30	3.4	20	4.0	5.0	-	HH5X16	-	LW-4

- Dimension T shows the distance from the toolholder to the cutting edge.Refer to table on ➡ **G32** for relationship between available grooving depth and cutting diameter
- When using GMG / GMM type 2-edge insert, set groove depth under 15mm

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➡ **G26~** ➡ **G28**

Applicable Inserts

Application	Grooving / Traversing	Grooving / Traversing	Grooving	Full-R / Copying	Deep Grooving / Cut-Off	Deep Grooving / Cut-Off	Deep Grooving / Cut-Off	Deep Grooving / Cut-Off	Deep Grooving / Cut-Off	Deep Grooving
Ref. Page	➡ G26	➡ G26	➡ G26	➡ G26	➡ G27	➡ G27	➡ G27	➡ G27	➡ G27	➡ G28
Shape / Toolholder	MW	MS	MG		MT	NB	TK	TK		CBN • PCD
KGMR/L...1.5	-	-	-	-	GMM1520...MT GMM2020...MT GMM1520R/L...MT GMM2020R/L...MT	GMM1520...NB GMM2020...NB	GMM2020...TK GMM2020R/L...TK	GMN2...TK GMR/L2...TK	-	-
KGMR/L...2(T)	GMM2420...MW GMM3020...MW	GMG3020...MS GMM3020...MS	GMG2520...MG GMG3020...MG	GMG3020...R GMM3020...R	GMM2020...MT GMM2520...MT GMM3020...MT GMM2020R/L...MT GMM2520R/L...MT GMM3020R/L...MT	GMM2020...NB GMM2520...NB GMM3020...NB	GMM2020...TK GMM2520...TK GMM3020...TK GMM2020R/L...TK GMM2520R/L...TK GMM3020R/L...TK	GMN2...TK GMN3...TK GMR/L2...TK GMR/L3...TK	GMN2 GMN2.2 GMN3 GMR/L2.2 GMR/L3	GMN2 GMN3
KGMR/L...2.5	GMM2420...MW GMM3020...MW	GMG3020...MS GMM3020...MS	GMG2520...MG GMG3020...MG	GMG3020...R GMM3020...R	GMM2520...MT GMM3020...MT GMM2520R/L...MT GMM3020R/L...MT	GMM2520...NB GMM3020...NB	GMM2520...TK GMM3020...TK GMM2520R/L...TK GMM3020R/L...TK	GMN3...TK GMR/L3...TK	GMN3 GMR/L3	GMN3
KGMR/L...3(T)	GMM3020...MW GMM4020...MW	GMG3020...MS GMM3020...MS GMG4020...MS GMM4020...MS	GMG3020...MG GMG3520...MG GMG4020...MG	GMG3020...R GMM3020...R GMG4020...R GMM4020...R	GMM3020...MT GMM3020R/L...MT	GMM3020...NB	GMM3020...TK GMM3020R/L...TK	GMN3...TK GMN4...TK GMR/L3...TK GMR/L4...TK	GMN3 GMN4 GMR/L3 GMR/L4	GMN3 GMN4
KGMR/L...4	GMM4020...MW GMM5020...MW	GMG4020...MS GMM4020...MS GMG5020...MS GMM5020...MS	GMG4020...MG GMG5020...MG	GMG4020...R GMM4020...R GMG5020...R GMM5020...R	-	-	-	GMN4...TK GMR/L4...TK	GMN4 GMN5 GMR/L4	GMN4 GMN5
KGMR/L...5	GMM5020...MW GMM6020...MW	GMG5020...MS GMM5020...MS GMG6020...MS GMM6020...MS	GMG5020...MG GMG6020...MG	GMG5020...R GMM5020...R GMG6020...R GMM6020...R	-	-	-	-	GMN5 GMN6	GMN5 GMN6

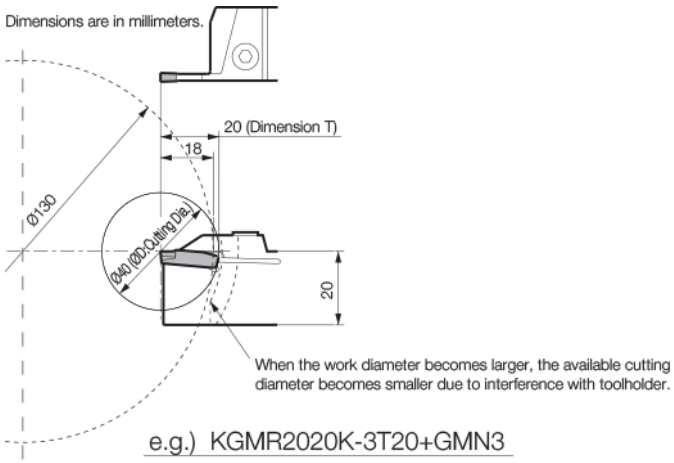
- If using a full-R insert, you need to modify the corner of insert adapter part (dimension A) of toolholder

Recommended Cutting Condtions ➡ **G29**
Recommended Cutting Condtions (CBN / PCD) ➡ **G28**

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

KGM • KGM-T Available Cutting Diameter

There is a limit to available grooving depth depending on the workpiece diameter



KGM Available Cutting Diameter Table

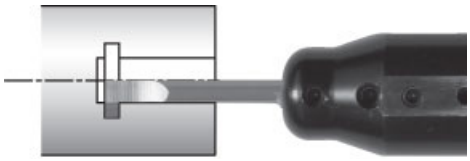
Toolholders		ØD (Cutting Diameter)																
KGM℠	0810K-1.5-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32	∞
	1010○-1.5…	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞	
	1212○-1.5…	-	-	-	-	25	26	28	32	36	40	60	100					
	0810K-2-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32	
	1010○-2…	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞	
	1212○-2…	-	-	-	-	25	26	28	50	∞	∞	∞	∞					
	1616○-2…	32	40	50	60	80	100	∞	∞									
	1010○-2.5…	-	-	-	-	-	-	-	20	25	32	40	60					
	1212○-2.5…	-	-	-	-	25	26	28	32	36	40	60	100					
	1616○-2.5…	32	40	50	60	80	100	∞	∞	∞	∞	∞	∞					
	1616○-3…	32	40	50	60	80	100											
Available Grooving Depth T (mm)		16	15	14	13	12.5	12	11	10	9	8	7	6	5	4	3	2	1

KGM-T Available Cutting Diameter Table (GMN, GM℠ When Using 1-edge Insert)

Toolholders		ØD (Cutting Diameter)												
KGM℠	2012K-2T17	-	-	-	-	-	-	-	-	66	80	130	260	∞
	2020K-2T17													
	1616H-3T20	-	-	-	-	-	40	54	70	100	180	∞	∞	
	2012K-3T20	-	-	-	-	-	40	90	130	240	∞			
	2020K-3T20													
	2020K-4T20													
Available Grooving Depth T (mm)		30	27	25	23	22	20	19	18	17	16	15	14	13

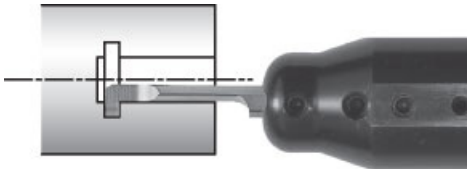
Small Diameter Internal Grooving (G34~ G37)

EZ Bar / Double-Sided Micro Bar / Swiss IQ Bar



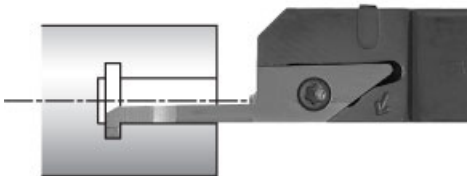
Type	EZG
Min. Bore Dia.	0.197"~0.315" (5.0mm~8.0mm)
Width (mm)	0.039"~0.079" (1.0mm ~ 2.0mm)
Grooving Depth (mm)	0.059"~0.079" (1.5mm ~ 2.0mm)
Ref. Page	G34

EZ Bars



Type	HPG
Min. Bore Dia.	0.158"~0.276" (4.0mm~7.0mm)
Width (mm)	0.039"~0.079" (1.0mm ~ 2.0mm)
Grooving Depth (mm)	0.039"~0.079" (1.0mm ~ 2.0mm)
Ref. Page	G36

Double-Sided Micro Bars

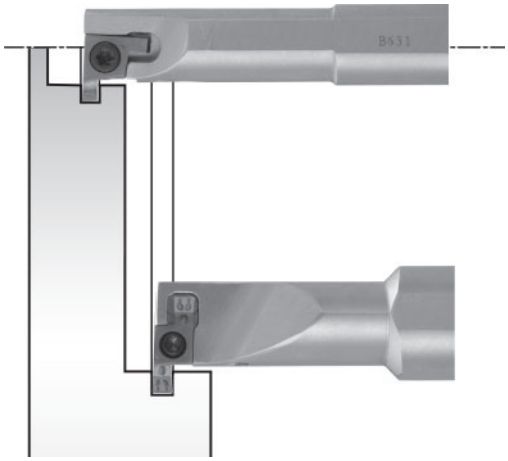


Type	VNG
Min. Bore Dia.	0.158"~0.276" (4.0mm~7.0mm)
Width (mm)	0.039"~0.079" (1.0mm ~ 2.0mm)
Grooving Depth (mm)	0.032"~0.079" (0.8mm ~ 2.0mm)
Ref. Page	G37

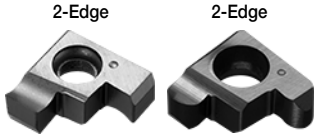
Swiss IQ Bars

Internal Grooving (G38~ G43)

Shallow Grooving



Type	SIGE
Min. Bore Dia.	0.315"~0.472" (8.0mm~12.0mm)
Width	0.039"~0.118" (1.0mm ~ 3.0mm)
Grooving Depth	0.059"~0.087" (1.5mm ~ 2.2mm)
Ref. Page	G40



2-Edge Ground Chipbreaker

2-Edge Ground Chipbreaker Full-R

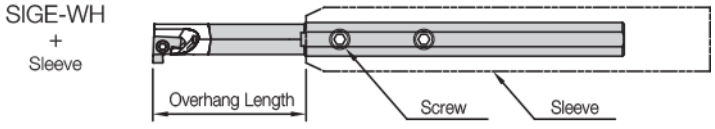
Type	SIGE
Min. Bore Dia.	0.551"~0.630" (14.0mm~16.0mm)
Width	0.039"~0.138" (1.0mm~3.5mm)
Grooving Depth	0.098" (2.5mm)
Ref. Page	G41

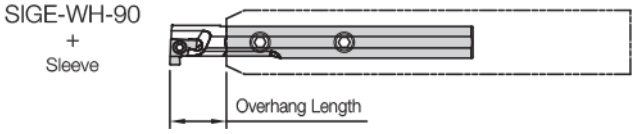
2-Edge Molded Chipbreaker

2-Edge Ground Chipbreaker

2-Edge Ground Chipbreaker Full-R

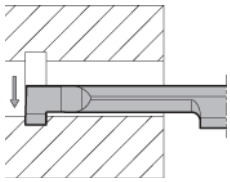
How to Select SIGE-WH and SIGE-WH-90 G41~ G42

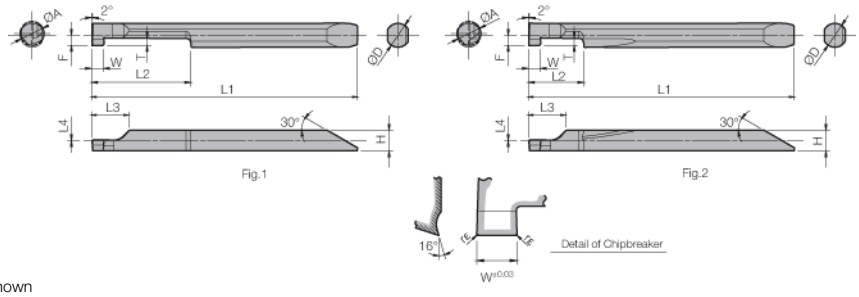




The SIGE-WH-90 type is recommended for automatic lathe cutting, because the overhang length can be shorter.

EZG (Internal Grooving) NEW





Right-hand Shown

Micro Bar Dimensions

Part Number	Min. Bore Dia.	Dimensions (mm)										Drawing	MEGACOAT	Applicable Sleeves
	ØA	W±0.03*	rε	ØD	H	L1	L2	L3	L4	F	T		PR1225	
EZGR 040040-050	4	0.5	±0.013 0.05	4	3.45	44.7	12	6.2	0	1.70	1.0	Fig.2	●	EZH040.. PSH04..
040040-100	4	1.0		4	3.45	44.7	12	6.2	0	1.70	1.0	Fig.2	●	
040040-150	4	1.5		4	3.45	44.7	12	6.2	0	1.70	1.0	Fig.2	●	
040040-200	4	2.0		4	3.45	44.7	12	6.2	0	1.70	1.0	Fig.2	●	
050050-100	5	1.0		5	4.30	52.8	20	6.7	0	2.15	1.5	Fig.1	●	EZH050.. PSH05..
050050-150	5	1.5		5	4.30	52.8	20	6.7	0	2.15	1.5	Fig.1	●	
050050-200	5	2.0		5	4.30	52.8	20	6.7	0	2.15	1.5	Fig.1	●	
060060-100	6	1.0		6	5.15	60.7	20	7.6	0	2.65	2.0	Fig.2	●	EZH060.. PSH06..
060060-150	6	1.5		6	5.15	60.7	20	7.6	0	2.65	2.0	Fig.2	●	
060060-200	6	2.0		6	5.15	60.7	20	7.6	0	2.65	2.0	Fig.2	●	
070070-100	7	1.0		7	6.20	63.7	25	7.6	0	3.05	2.0	Fig.2	●	EZH070.. PSH07..
070070-150	7	1.5		7	6.20	63.7	25	7.6	0	3.05	2.0	Fig.2	●	
070070-200	7	2.0		7	6.20	63.7	25	7.6	0	3.05	2.0	Fig.2	●	
080070-100	8	1.0		7	6.20	63.7	25	7.6	0	3.45	2.0	Fig.2	●	
080070-150	8	1.5		7	6.20	63.7	25	7.6	0	3.45	2.0	Fig.2	●	
080070-200	8	2.0		7	6.20	63.7	25	7.6	0	3.45	2.0	Fig.2	●	
EZGR 030030-050S	3	0.5	±0.013 0.05	3	2.50	38.7	5	4.8	0	1.25	0.8	Fig.2	●	EZH030.. PSH03..
030030-100S	3	1.0		3	2.50	38.7	5	4.8	0	1.25	0.8	Fig.2	●	
040040-050S	4	0.5		4	3.45	44.7	8	6.2	0	1.70	1.0	Fig.2	●	EZH040.. PSH04..
040040-100S	4	1.0		4	3.45	44.7	8	6.2	0	1.70	1.0	Fig.2	●	
040040-150S	4	1.5		4	3.45	44.7	8	6.2	0	1.70	1.0	Fig.2	●	
040040-200S	4	2.0		4	3.45	44.7	8	6.2	0	1.70	1.0	Fig.2	●	
050050-100S	5	1.0		5	4.30	52.8	10	6.7	0	2.15	1.5	Fig.2	●	EZH050.. PSH05..
050050-150S	5	1.5		5	4.30	52.8	10	6.7	0	2.15	1.5	Fig.2	●	
050050-200S	5	2.0		5	4.30	52.8	10	6.7	0	2.15	1.5	Fig.2	●	
060060-100S	6	1.0		6	5.15	60.7	10	7.6	0	2.65	2.0	Fig.2	●	EZH060.. PSH06..
060060-150S	6	1.5		6	5.15	60.7	10	7.6	0	2.65	2.0	Fig.2	●	
060060-200S	6	2.0		6	5.15	60.7	10	7.6	0	2.65	2.0	Fig.2	●	
070070-100S	7	1.0		7	6.20	63.7	10	7.6	0	3.05	2.0	Fig.2	●	EZH070.. PSH07..
070070-150S	7	1.5		7	6.20	63.7	10	7.6	0	3.05	2.0	Fig.2	●	
070070-200S	7	2.0		7	6.20	63.7	10	7.6	0	3.05	2.0	Fig.2	●	
080070-100S	8	1.0		7	6.20	63.7	10	7.6	0	3.45	2.0	Fig.2	●	
080070-150S	8	1.5		7	6.20	63.7	10	7.6	0	3.45	2.0	Fig.2	●	
080070-200S	8	2.0		7	6.20	63.7	10	7.6	0	3.45	2.0	Fig.2	●	

Dimension T: Available grooving depth
"S" in description denotes stub length

Applicable Sleeves ➔ G35

EZ Bar Identification System

EZ G R 030 030 – 050 S

EZ Symbol of Bar	Application	Hand	Min. Bore Dia.	Shank Dia.	Groove Width	Type
EZ	G: Internal Grooving	R: Right-hand	030 : 3mm	030 : 3mm	050 : 0.5mm	S: Short Type (L2 dimension)
	FG: Face Grooving		...	...	100 : 1.0mm	
	T: Threading				150 : 1.5mm	
					200 : 2.0mm	

EZ Bars are sold in 1 piece boxes.

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

Applicable Sleeves

Sleeve Part Number				EZ Bar Part Number			Applicable Machine Manufacturer
EZH-CT (Adjustable with Coolant Hole) ➡ F21	EZH-HP (Adjustable) ➡ F22~ ➡ F23	EZH-ST ➡ F24~ ➡ F25	Sleeve Shank Dia. ØD1 (mm)	EZG	HPG	Shank Dia ØD (mm)	
-	-	EZH 03012ST-80	12.00	EZGR ...030-...	-	3	General Machines
		04012ST-80		...040-...	HPG型 0404-...	4	
		05012ST-80		...050-...	0505-...	5	
		06012ST-80		...060-...	0606-...	6	
		07012ST-80		...070-...	0707-...	7	
-	EZH 03016HP-100	EZH 03016ST-100	16.00	EZGR ...030-...	-	3	General Machines
	04016HP-100	04016ST-100		...040-...	HPG型 0404-...	4	
	05016HP-100	05016ST-100		...050-...	0505-...	5	
	06016HP-100	06016ST-100		...060-...	0606-...	6	
	07016HP-100	07016ST-100		...070-...	0707-...	7	
EZH 03019CT-120	EZH 03019HP-120	EZH 03019ST-120	19.05	EZGR ...030-...	-	3	CITIZEN MACHINERY MIYANO CO., LTD.
04019CT-120	04019HP-120	04019ST-120		...040-...	HPG型 0404-...	4	
05019CT-120	05019HP-120	05019ST-120		...050-...	0505-...	5	
06019CT-120	06019HP-120	06019ST-120		...060-...	0606-...	6	
07019CT-120	07019HP-120	07019ST-120		...070-...	0707-...	7	
EZH 03020CT-120	EZH 03020HP-120	EZH 03020ST-120	20.00	EZGR ...030-...	-	3	AMADA MACHINE TOOLS CO.,LTD. EGURO.LTD TSUGAMI CORPORATION CITIZEN MACHINERY MIYANO CO., LTD. General Machines
04020CT-120	04020HP-120	04020ST-120		...040-...	HPG型 0404-...	4	
05020CT-120	05020HP-120	05020ST-120		...050-...	0505-...	5	
06020CT-120	06020HP-120	06020ST-120		...060-...	0606-...	6	
07020CT-120	07020HP-120	07020ST-120		...070-...	0707-...	7	
EZH 03022CT-135	EZH 03022HP-135	EZH 03022ST-135	22.00	EZGR ...030-...	-	3	STAR MICRONICS CO., LTD. Nomura VTC Automatic Lathe Co., Ltd.
04022CT-135	04022HP-135	04022ST-135		...040-...	HPG型 0404-...	4	
05022CT-135	05022HP-135	05022ST-135		...050-...	0505-...	5	
06022CT-135	06022HP-135	06022ST-135		...060-...	0606-...	6	
07022CT-135	07022HP-135	07022ST-135		...070-...	0707-...	7	
EZH 03025.0CT-135	EZH 03025.0HP-135	EZH 03025.0ST-135	25.00	EZGR ...030-...	-	3	AMADA MACHINE TOOLS CO.,LTD. EGURO.LTD TSUGAMI CORPORATION CITIZEN MACHINERY MIYANO CO., LTD. General Machines
04025.0CT-135	04025.0HP-135	04025.0ST-135		...040-...	HPG型 0404-...	4	
05025.0CT-135	05025.0HP-135	05025.0ST-135		...050-...	0505-...	5	
06025.0CT-135	06025.0HP-135	06025.0ST-135		...060-...	0606-...	6	
07025.0CT-135	07025.0HP-135	07025.0ST-135		...070-...	0707-...	7	
EZH 03025.4CT-120	EZH 03025.4HP-120	EZH 03025.4ST-120	25.40	EZGR ...030-...	-	3	CITIZEN MACHINERY MIYANO CO., LTD.
04025.4CT-120	04025.4HP-120	04025.4ST-120		...040-...	HPG型 0404-...	4	
05025.4CT-120	05025.4HP-120	05025.4ST-120		...050-...	0505-...	5	
06025.4CT-120	06025.4HP-120	06025.4ST-120		...060-...	0606-...	6	
07025.4CT-120	07025.4HP-120	07025.4ST-120		...070-...	0707-...	7	

- Choose sleeves (Ød1) to meet with ØD dimension of EZG bars.
- Adjustment pin cannot be installed in EZH-ST sleeves. To adjust overhang of EZB insert, please use EZH-HP sleeves.
- Machine manufacturers in random order.

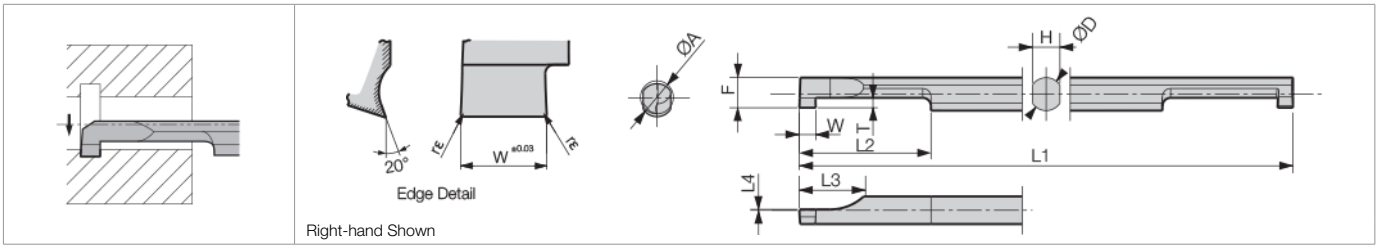
Applicable EZBars ➡ G34

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)	EZGR030030-S	EZGR040040 EZGR050050 EZGR040040-S EZGR050050-S	EZGR060060 EZGR070070 EZGR080070 EZGR060060-S EZGR070070-S EZGR080070-S	Remarks
	MEGACOAT				
	PR1225	Feed Rate (ipr)			
Carbon Steel / Alloy Steel	★ 100~330	~0.0008	~0.0012	~0.0020	Wet
Stainless Steel	★ 100~260	~0.0004	~0.0008	~0.0012	

★ : 1st Recommendation ☆ : 2nd Recommendation

HPG (Small Diameter Internal Grooving)



Micro Bar Dimensions

Part Number	Min. Bore Dia.	Dimensions (mm)											PVD Coated Carbide	Carbide
	ØA	W±0.0012" inch	W±0.03mm mm	rε	ØD	H	L1	L2	L3	L4	F	T	PR930	KW10
HPG℀ 0404-10	4	0.039	1	+0 -0.02 0.05	4	3.35	60	15	8	0	3.65	1.0	○	Ⓡ
0404-20	4	0.079	2		4	3.35	60	15	8	0	3.65	1.0	○	Ⓡ
0505-10	5	0.039	1		5	4.30	70	20	8	0	4.55	1.5	○	Ⓡ
0505-20	5	0.079	2		5	4.30	70	20	8	0	4.55	1.5	○	Ⓡ
0606-10	6	0.039	1		6	5.20	70	20	10	0	5.50	2.0	○	Ⓡ
0606-20	6	0.079	2		6	5.20	70	20	10	0	5.50	2.0	○	Ⓡ
0707-10	7	0.039	1		7	6.20	80	25	10	0	6.45	2.0	○	Ⓡ
0707-20	7	0.079	2		7	6.20	80	25	10	0	6.45	2.0	○	Ⓡ

Dimension T: Available grooving depth

Description of Micro Bar and Applicable Sleeve

Micro Bar Part Number	Applicable Sleeves	
HPG℀ 0404-...	EZH	04..-..
0505-...		05..-..
0606-...		06..-..
0707-...		07..-..

Recommended Cutting Conditions

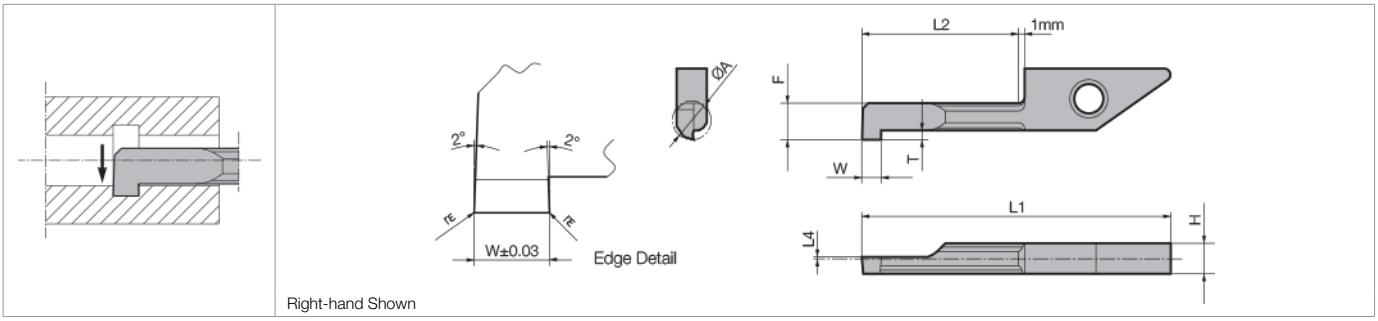
Workpiece Material	Recommended Insert Grade (Vc sfm)		HPG℀04 HPG℀05	HPG℀06 HPG℀07	Remarks
	PVD Coated Carbide	Carbide			
	PR1225	PR1225	Feed Rate (ipr)		
Carbon Steel / Alloy Steel	★ 100~325	-	~0.0012	~0.0020	Wet
Stainless Steel	★ 100~250	-	~0.0008	~0.0012	
Non-ferrous Metals	-	★ ~975	~0.0020	~0.0031	

★ : 1st Recommendation ☆ : 2nd Recommendation

Micro Bars are sold in 1 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

VNG



Right-hand Shown

Insert Dimensions

Part Number		Min. Bore Dia.	Dimensions (mm)											Cermet	PVD Coated Carbide	Carbide	Ref. Page for Toolholder
		ØA	W		rε	ØD	H	L1	L2	L3	L4	F	T	TC60	PR930	KW10	
			inch	mm													
VNGR	0410-11	4	0.039	1.0	0.05	-	3.9	30.8	11	-	0.1	3.5	0.8		●	●	
	0420-11	4	0.079	2.0	0.10	-	3.9	30.8	11	-	0.1	3.5	0.8		●	●	
	0510-11	5	0.039	1.0	0.05	-	3.9	30.8	11	-	0.1	4.4	1.0	○	●	●	
	0520-11	5	0.079	2.0	0.10	-	3.9	30.8	11	-	0.1	4.4	1.0	○	●	●	
	0610-20	6	0.039	1.0	0.05	-	3.9	39.8	20	-	0.3	5.2	1.8	○	●	●	
	0620-20	6	0.079	2.0	0.10	-	3.9	39.8	20	-	0.3	5.2	1.8	○	●	●	
	0710-20	7	0.039	1.0	0.05	-	3.9	39.8	20	-	0.3	6.2	2.0	●	●	●	
	0720-20	7	0.079	2.0	0.10	-	3.9	39.8	20	-	0.3	6.2	2.0	○	●	●	

F32
F33

Dimension T : Available grooving depth

• Dimension L4 indicates the cutting edge is above the tool's center position

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)				VNG04 VNG05	VNG06 VNG07	Remarks
	Cermet	MEGACOAT	PVD	Carbide			
	TC60	PR1225	PR930	KW10	Feed Rate (ipr)		
Carbon Steel / Alloy Steel	☆ 200~400	★ 100~325	☆ 100~100	-	~0.0012	~0.0020	Wet
Stainless Steel	☆ 150~325	★ 100~250	☆ 100~250	-	~0.0008	~0.0012	
Non-ferrous Metals	-	-	-	★ ~975	~0.0020	~0.0031	

★ : 1st Recommendation ☆ : 2nd Recommendation

Swiss IQ Bars are sold in 5 piece boxes. *CBN & PCD Inserts are sold in 1 piece boxes.*

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
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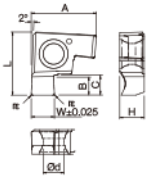
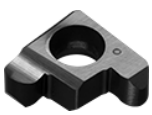
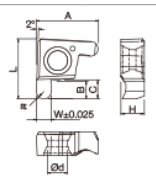
Applicable Inserts

(mm)

Part Number	A	L	H	Ød
GE□...-A	6.69	6.5	2.58	2.5
GER...-AR				
GE□...-B	8.46	8.2	3.18	2.7
GER...-BR				

P	Carbon Steel / Alloy Steel		●	◔		
M	Stainless Steel		●	◔		
K	Cast Iron					◔
N	Non-ferrous Metals					●
S	Titanium Alloy					●
H	Hard materials (≤40HRC)		●	○		
	Hard materials (≥40HRC)					

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)		Part Number		Unit	Dimmensions W inch	W mm	B	C	rε	Cermet TN6020	MEGACOAT PR1225	PVD Coated Carbide PR1025	Carbide GW15	Carbide KW10	Applicable Toolholders	Ref. Page for Toolholder
 2-Edge		GE□	031-002A	inch	0.031	-	0.037	0.071	0.002			●			SIGE□...A-EH SIGE□...A-WH	G40 G41
			041-002A		0.041	-	0.059	0.071	0.002			●				
			047-002A		0.047	-	0.059	0.071	0.002			●				
			058-002A		0.058	-	0.059	0.071	0.002			●				
			062-004A		0.062	-	0.059	0.071	0.004			●				
			072-004A		0.072	-	0.059	0.071	0.004			●				
			078-004A		0.078	-	0.059	0.071	0.004			Ⓡ				
		GE□	100-005A	mm	0.039	1.00	1.5	1.8	0.05	●	○	Ⓡ		○	SIGE□...A-EH SIGE□...A-WH	G40 G41
			120-005A		0.047	1.20	1.5	1.8	0.05	●	○	Ⓛ		○		
			125-005A		0.049	1.25	1.5	1.8	0.05	Ⓛ	○			○		
			150-010A		0.059	1.50	1.5	1.8	0.10	●	○	Ⓡ		○		
			200-010A		0.079	2.00	1.5	1.8	0.10	Ⓛ	○	Ⓡ		○		
		GE□	031-002B	inch	0.031	-	0.044	0.102	0.002			●			SIGE□...B-EH SIGE□...B-WH SIGER...B-WH-90	G40 G41 G42
			041-002B		0.041	-	0.087	0.102	0.002			●				
			047-002B		0.047	-	0.087	0.102	0.002			●				
			058-002B		0.058	-	0.087	0.102	0.002			●				
			062-004B		0.062	-	0.087	0.102	0.004			●				
			072-004B		0.072	-	0.087	0.102	0.004			●				
			078-004B		0.078	-	0.087	0.102	0.004			●				
			088-004B		0.088	-	0.087	0.102	0.004			●				
			094-004B		0.094	-	0.087	0.102	0.004			●				
			097-004B		0.097	-	0.087	0.102	0.004			●				
			105-008B		0.105	-	0.087	0.102	0.008			●				
			110-008B		0.110	-	0.087	0.102	0.008			●				
			122-008B		0.122	-	0.087	0.102	0.008			●				
		GE□	100-005B	mm	0.039	1.00	2.2	2.6	0.05	Ⓛ	○			○	SIGE□...B-EH SIGE□...B-WH SIGER...B-WH-90	G40 G41 G42
			120-005B		0.047	1.20	2.2	2.6	0.05	Ⓛ	○	Ⓛ		○		
			125-005B		0.049	1.25	2.2	2.6	0.05	●	○	●		○		
			145-010B		0.057	1.45	2.2	2.6	0.10	Ⓛ	○	●		○		
			150-010B		0.059	1.50	2.2	2.6	0.10	Ⓡ	○	●		○		
			200-010B		0.079	2.00	2.2	2.6	0.10	●	○	Ⓡ		○		
			250-020B		0.098	2.50	2.2	2.6	0.20	●	○	Ⓡ		○		
			300-020B		0.118	3.00	2.2	2.6	0.20	●	○	●		○		
 Full-R		GER	100-050AR	mm	0.039	1.00	1.5	1.8	0.50		○	○		○	SIGER...A-EH SIGER...A-WH	G40 G41
			200-100AR		0.079	2.00	1.5	1.8	1.00		○	○		○		
		GER	100-050BR		0.039	1.00	2.2	2.6	0.50		○	○		○	SIGER...B-EH SIGER...B-WH SIGER...B-WH-90	G40 G41 G42
			200-100BR		0.079	2.00	2.2	2.6	1.00		○	○		○		

Dimension B : Available grooving depth

Recommended Cutting Conditions ➔ G43

Inserts are sold in 10 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

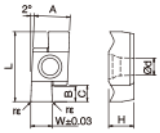
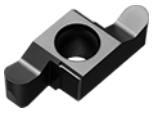
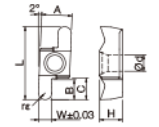
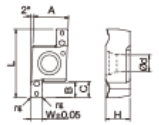
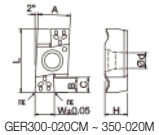
Applicable Inserts

(mm)

Part Number	A	L	H	Ød
GE□...-A	6.69	6.5	2.58	2.5
GER...-AR				
GE□...-B	8.46	8.2	3.18	2.7
GER...-BR				

P	Carbon Steel / Alloy Steel		●	◔		
M	Stainless Steel		●	◔		
K	Cast Iron					◔
N	Non-ferrous Metals					●
S	Titanium Alloy					●
H	Hard materials (≤40HRC)		●	○		
	Hard materials (≥40HRC)					

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)		Part Number		Unit	Dimmensions W inch	W mm	B	C	rε	Cermet TN6020	MEGACOAT PR1225	PVD Coated Carbide PR1025	Carbide GW15	Carbide KW10	Applicable Toolholders	Ref. Page for Toolholder
 2-Edge		GE□	100-005C	mm	0.039	1.00	2.5	2.7	0.05	○	○	Ⓡ	○		SIGE□...C-EH SIGE□...C-WH SIGER...C-WH-90	G40 G41 G42
			120-005C		0.047	1.20	2.5	2.7	0.05	Ⓡ	○	○	Ⓡ			
			125-005C		0.049	1.25	2.5	2.7	0.05	○	Ⓡ	○	○			
			140-005C		0.055	1.40	2.5	2.7	0.05	Ⓡ	Ⓡ	○	Ⓡ			
			145-010C		0.057	1.45	2.5	2.7	0.10	○	Ⓡ	○	○			
			150-010C		0.059	1.50	2.5	2.7	0.10	○	○	○	○			
			170-010C		0.067	1.70	2.5	2.7	0.10	Ⓡ	Ⓡ	○	Ⓡ			
			185-010C		0.073	1.85	2.5	2.7	0.10	Ⓡ	Ⓡ	○	Ⓡ			
			195-010C		0.077	1.95	2.5	2.7	0.10	Ⓡ	Ⓡ	○	Ⓡ			
			200-010C		0.079	2.00	2.5	2.7	0.10	○	○	○	○			
			250-020C		0.098	2.50	2.5	2.7	0.20	○	○	○	○			
			300-020C		0.118	3.00	2.5	2.7	0.20	○	○	○	○			
			350-020C		0.138	3.50	2.5	2.7	0.20	○	Ⓡ	○	○			
 Full-R		GER	200-100CR		0.079	2.00	2.5	2.7	1.00		○	○	○		SIGER...C-EH SIGER...C-WH SIGER...C-WH-90	G40 G41 G42
			250-125CR		0.098	2.50	2.5	2.7	1.25		○	○	○			
			300-150CR		0.118	3.00	2.5	2.7	1.50		○	○	○			
 2-Edge Molded Chipbreaker	 GER100-010CM ~ 250-020M  GER300-020CM ~ 350-020M	GER	150-010CM		0.059	1.50	2.5	2.7	0.10		○	●			SIGER...C-EH SIGER...C-WH SIGER...C-WH-90	G40 G41 G42
			200-010CM		0.079	2.00	2.5	2.7	0.10		○	●				
			250-020CM		0.098	2.50	2.5	2.7	0.20		○	●				
			300-020CM		0.118	3.00	2.5	2.7	0.20		○	●				
			350-020CM		0.138	3.50	2.5	2.7	0.20		○	●				

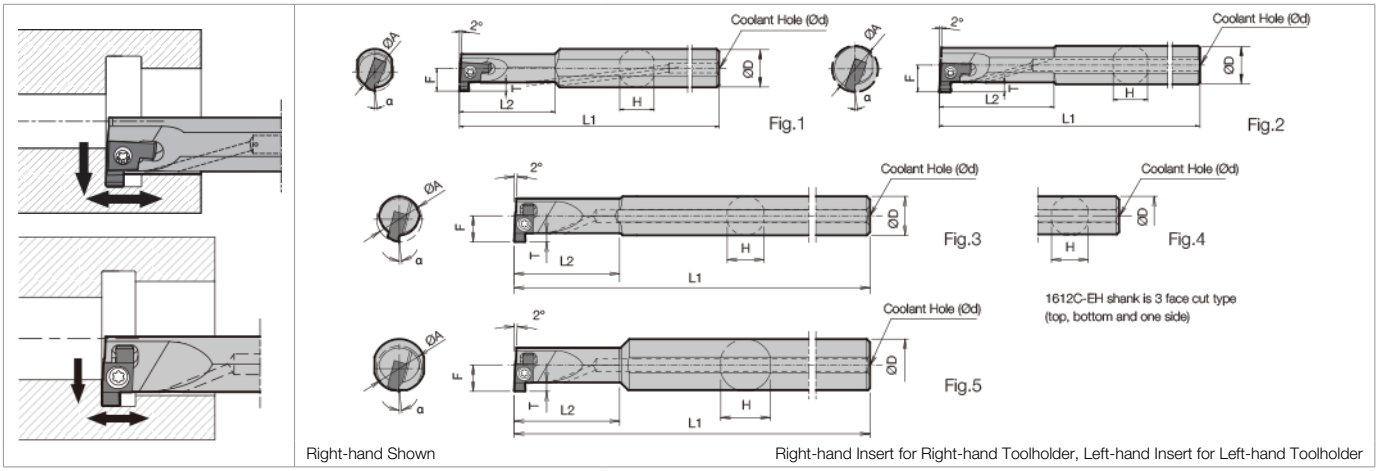
Dimension B : Available grooving depth

Recommended Cutting Conditions G43

Inserts are sold in 10 piece boxes.

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

SIGE-EH Excellent Bar (With Coolant Hole)



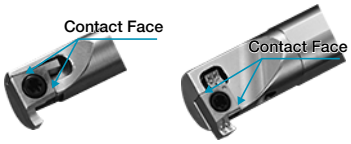
Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Min. Bore Dia. ØA	Dimensions ØD	H	L1	L2	F	T	Ød	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench		Applicable Inserts ➡ G38~ ➡ G39
SIGE®	05EH	●	●	inch	0.313	0.315	0.283	3.940	0.787	0.177	0.059	0.158	Fig.1	SB-2045TRN	FT-6	-	GE®100-005A~GE®200-010A GER100-050AR~GER200-100AR
	06EH	●	●		0.375	0.394	0.354	4.920	0.984	0.232	0.087	0.158	Fig.1	SB-2255TR	-	DT-7	GE®100-005B~GE®300-020B GER100-050BR~GER200-100BR
	0809C-EH	●	●		0.551	0.500	0.460	5.900	1.300	0.315	0.098	0.158	Fig.2	SB-2570TR	FT-8	-	GE®100-005C~GE®350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR
	0810C-EH	●	●		0.630	0.500	0.460	5.900	0.788	0.335	0.098	0.158	Fig.3				
SIGE®	0808A-EH	○	○	mm	8	8	7.2	100	20	4.8	1.5	3	Fig.1	SB-2045TRN	FT-6	-	GE®100-005A~GE®200-010A GER100-050AR~GER200-100AR
	1010B-EH	○	○		10	10	9.0	125	25	6.2	2.2	3	Fig.1	SB-2255TR	-	DT-7	GE®100-005B~GE®300-020B GER100-050BR~GER200-100BR
	1210B-EH	○	○		12	10	9.0	125	30	7.0	2.2	3	Fig.2				
	1412C-EH	○	○		14	12	11.4	150	33	8.0	2.5	4	Fig.3	SB-2570TR	FT-8	-	GE®100-005C~GE®350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR
	1612C-EH	○	○		16	12	11.4	150	20	8.5	2.5	4	Fig.4				
	1616C-EH	○	○		16	16	15.0	160	36	9.0	2.5	5	Fig.5				

Dimension T: Available grooving depth

- **Traditional top clamp has been replaced with a screw clamp only. This design creates a large chip pocket that provides excellent chip evacuation**

- **Cutting Edge is Protected in the Pocket**



- **8mm Minimum Cutting Diameter with 2-Edge Design**

- **Cost effective chip control from a 3-D molded chipbreaker (GER...M)**

Chip Evacuation Comparison (Molded Chipbreaker)

Shape / Toolholder	SCM415 (Min. Bore Dia.) 0.002"	0.003"	0.004"	Evaluation
SIGER1612C-EH GER300-020CM (PR1025)				Good Chip Control
Competitor A (Width 0.118")			Insert Cracks	Unstable Chip Control and Biting
Competitor B (Width 0.118")				Unstable Chip Control and Biting

(Vc=325sfm, D.O.C.=0.079", Wet) (Internal Evaluation)

Chip Evacuation Comparison (Min. Cutting Dia. Ø0.315")

Shape / Toolholder	SCM415 0.0008	Evaluation
SIGER0808A-EH GER200-010A (PR1025)		Good Chip Control
Competitor C (Width 0.079")		Unstable Chip Control and Biting

(Vc=175sfm, D.O.C.=0.049", Wet) (Internal Evaluation)

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(Technical Support) 800.823.7284 - Option 2
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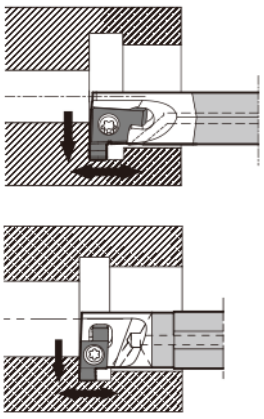
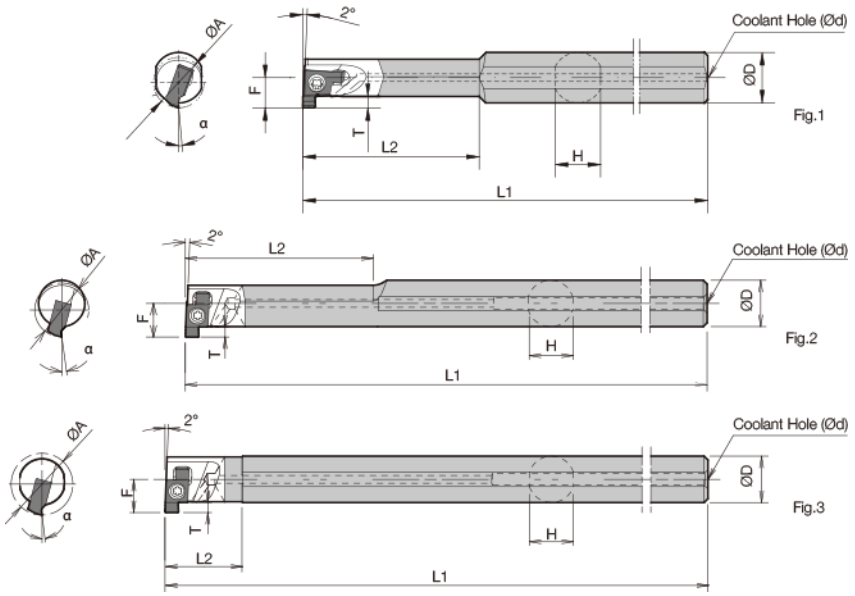
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

SIGE-WH Carbide Anti-Vibration Bar (With Coolant Hole)





Right-hand Shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock R	Stock L	Min. Bore Dia. ØA	Dimensions (mm) ØD	H	L1	L2	F	T	Ød	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench		Applicable Inserts ➡ G38~ ➡ G39
SIGE® 0808A-WH	○	○	8	8	7.2	125	28	4.8	1.5	3	Fig.1	SB-2045TRN	FT-6	-	GE®100-005A~GE®200-010A GER100-050AR~GER200-100AR
1010B-WH	●	○	10	10	9.0	125	35	6.2	2.2	3	Fig.1	SB-2255TR	-	DT-7	GE®100-005B~GE®300-020B GER100-050BR~GER200-100BR
1210B-WH	○	○	12	10	9.0	140	45	7.0	2.2	3	Fig.1				
1412C-WH	○	○	14	12	11.4	150	50	8.7	2.5	4	Fig.2	SB-2570TR	FT-8	-	GE®100-005C~GE®350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR
1612C-WH	○	○	16	12	11.4	180	20	8.5	2.5	4	Fig.3				

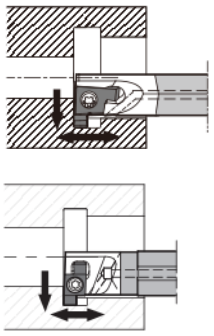
Dimension T: Available grooving depth

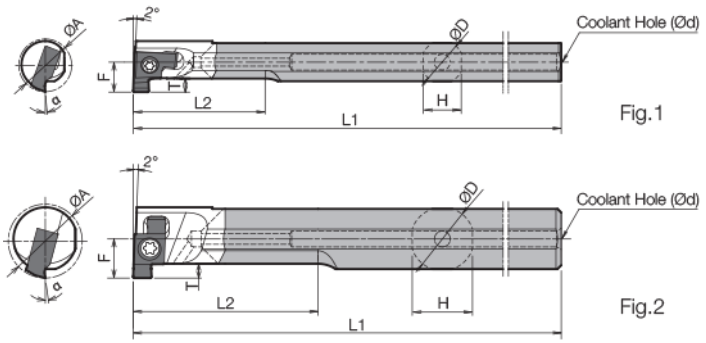
Applicable Inserts and Rake Angle (α) After Installment of Insert

Toolholder	Ground Chipbreaker	α (°)	Molded Chipbreaker	α (°)
SIGE® 0808A-EH	GE®100-005A~GE®200-010A GER100-050AR~GER200-100AR	5°	-	-
1010B-EH	GE®100-005A~GE®300-020B GER100-050BR~GER200-100BR	5°	-	-
1210B-EH				
1412C-EH	GE®100-005C~GE®350-020C GER200-100CR~GER300-150CR	8°	GER150-010CM~GER350-020CM	10°
1612C-EH				
1616C-EH				
SIGE® 0808A-WH	GE®100-005A~GE®200-010A GER100-050AR~GER200-100AR	5°	-	-
1010B-WH	GE®100-005A~GE®300-020B GER100-050BR~GER200-100BR	5°	-	-
1210B-WH				
1008B-WH-90				
1210B-WH-90				
1412C-WH	GE®100-005C~GE®350-020C GER200-100CR~GER300-150CR	8°	GER150-010CM~GER350-020CM	10°
1612C-WH				
1412C-WH-90				

• α indicates the rake angle at the center of the edge width, after installing insert

SIGE-WH Carbide Anti-Vibration Bar (With Coolant Hole)





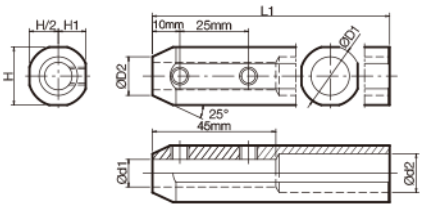
Right-hand Shown

Right-hand Insert for Right-hand Toolholder

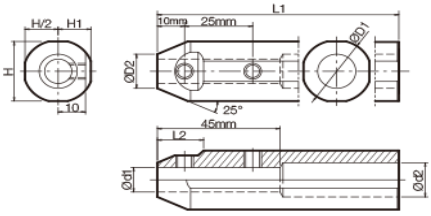
Toolholder Dimensions

Part Number		Stock	Min. Bore Dia.	Dimensions (mm)							Shape	Spare Parts		Applicable Inserts ➔ G38~ ➔ G39
			ØA	ØD	H	L1	L2	F	T	Ød		Clamp Screw	Wrench	
SIGER	1008B-WH-90	○	10	8	7.2	90	25	5.6	2.2	3	Fig.1	SB-2255TR	FT-7	GER100-005B~GER300-020B GER100-050BR~GER200-100BR
	1210B-WH-90	○	12	10	9.4	90	30	6.6	2.2	3	Fig.1			
	1412C-WH-90	○	14	12	11.4	90	35	7.4	2.5	3	Fig.2	SB-2570TR	FT-8	GER100-005C~GER350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR

Applicable Sleeves



Holder Installation Side Fig.1



Holder Installation Side Fig.2

Part Number		Stock	Dimensions								Shape	Spare Parts		Applicable Machine Manufacturer
			Ød1	ØD1	ØD2	Ød2	H	H1	L1	L2		Screw	Wrench	
SHA	0820-120	○	8	20.00	14	12	19.0	9.25	120	-	Fig.1	HS6x4P	LW-3	AMADA MACHINE TOOLS CO.,LTD. EGURO.LTD CITIZEN MACHINERY MIYANO CO., LTD. TSUGAMI CORPORATION
	1020-120	○	10	20.00	14	12	19.0	9.25	120	-	Fig.1			
SHA	0825.0-135	○	8	25.00	14	14	24.0	11.5	135	17	Fig.2			
	1025.0-135	○	10	25.00	14	14	24.0	11.5	135	17	Fig.2			
	1225.0-135	○	12	25.00	16	14	24.0	11.5	135	17	Fig.2			
SHA	0819-120	○	8	19.05	14	12	18.0	8.75	120	-	Fig.1	HS6x4P	LW-3	CITIZEN MACHINERY MIYANO CO., LTD.
	1019-120	○	10	19.05	14	12	18.0	8.75	120	-	Fig.1			
SHA	0820-120	○	8	20.00	14	12	19.0	9.25	120	-	Fig.1			
	1020-120	○	10	20.00	14	12	19.0	9.25	120	-	Fig.1			
SHA	0825.4-120	○	8	25.40	14	14	24.4	12.00	120	17	Fig.2			
	1025.4-120	○	10	25.40	14	14	24.4	12.00	120	17	Fig.2			
	1225.4-120	○	12	25.40	16	14	24.4	12.00	120	17	Fig.2			
SHA	0822-125	○	8	22.00	14	14	21.0	10.00	125	-	Fig.1	HS6x4P	LW-3	STAR MICRONICS CO., LTD. Nomura VTC Automatic Lathe Co., Ltd.
	1022-125	○	10	22.00	14	14	21.0	10.00	125	-	Fig.1			
	1222-125	○	12	22.00	16	14	21.0	10.00	125	-	Fig.1			
SHA	0823-120	○	8	23.00	14	14	22.0	10.50	120	16	Fig.2	HS6x4P	LW-3	Nomura VTC Automatic Lathe Co., Ltd.
	1023-120	○	10	23.00	14	14	22.0	10.50	120	16	Fig.2			
	1223-120	○	12	23.00	16	14	22.0	10.50	120	16	Fig.2			

※ : Length of Ød1…45mm (All types)

- Choose sleeves (Ød1) to meet with ØD dimension of Double-Sided Micro-Bar.
- Machine manufacturers are in random order.

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Recommended Cutting Conditions (Ground Chipbreaker : GE...A(R), GE...B(R))

Workpiece Material	Recommended Insert Grade (Vc sfm)				① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)			Remarks
	Cermet	MEGACOAT	PVD Coated Carbide	Carbide				
	TN6020	**PR1225**	**PR1025**	**KW10**	GE... 100~200-010A 100~200-100AR	GE... 100~200-010B 100~200-100BR	GE... 250~300-020B	
Carbon Steel	☆ 175~250	★ 175~250	☆ 175~250	-	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	Wet
Alloy Steel	☆ 175~250	★ 175~250	☆ 175~250	-	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	
Stainless Steel	-	★ 175~250	☆ 175~250	-	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0039	
Cast Iron	-	-	-	★ 175~250	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	
Aluminum	-	-	-	★ 175~325	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0039	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0079	
Brass	-	-	-	★ 175~325	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0039	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0079	

• Use PVD coated grade or uncoated carbide for traversing with edge width 1mm. (GE...100-005A/100-005B) ★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (Ground Chipbreaker : GE...C(R))

Workpiece Material	Recommended Insert Grade (Vc sfm)				① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)		Remarks
	Cermet	MEGACOAT	PVD Coated Carbide	Carbide			
	TN6020	**PR1225**	**PR1025**	**GW15**	GE... 100~200-010C 200-100CR	GE... 250~350-020C 250~300-150CR	
Carbon Steel	☆ 400~600	★ 200~425	☆ 200~425	-	① 0.03~0.08 ② 0.03~0.08 ③ Max. 0.30	① 0.03~0.08 ② 0.03~0.08 ③ Max. 0.30	Wet
Alloy Steel	☆ 325~525	★ 200~400	☆ 200~400	-	① 0.03~0.07 ② 0.03~0.10 ③ Max. 0.30	① 0.03~0.07 ② 0.03~0.10 ③ Max. 0.30	
Stainless Steel	☆ 225~425	★ 200~350	☆ 200~350	-	① 0.03~0.07 ② 0.03~0.10 ③ Max. 0.30	① 0.03~0.07 ② 0.03~0.10 ③ Max. 0.30	
Cast Iron	-	-	-	★ 200~350	① 0.03~0.08 ② 0.03~0.08 ③ Max. 0.30	① 0.03~0.08 ② 0.03~0.08 ③ Max. 0.30	
Aluminum	-	-	-	★ 500~975	① 0.05~0.12 ② 0.05~0.12 ③ Max. 0.50	① 0.05~0.12 ② 0.05~0.12 ③ Max. 0.50	
Brass	-	-	-	★ 325~825	① 0.05~0.12 ② 0.05~0.12 ③ Max. 0.50	① 0.05~0.12 ② 0.05~0.12 ③ Max. 0.50	

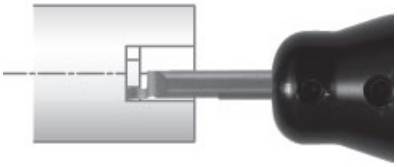
• Use PVD coated grade or uncoated carbide for traversing with edge width 1mm. (GE...100-010C) ★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (Molded Chipbreaker : GER...CM)

Workpiece Material	Recommended Insert Grade (Vc sfm)				① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)		Remarks
	Cermet	MEGACOAT	PVD Coated Carbide	Carbide			
	TN6020	**PR1225**	**PR1025**	**GW15**	GE... 100~200-010C 200-100CR	GE... 250~350-020C 250~300-150CR	
Carbon Steel	-	★ 200~525	☆ 200~525	-	① 0.0012~0.0031 ② 0.0012~0.0031 ③ Max. 0.0118	① 0.0012~0.0031 ② 0.0012~0.0031 ③ Max. 0.0118	Wet
Alloy Steel	-	★ 200~450	☆ 200~450	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ Max. 0.0118	① 0.0012~0.0028 ② 0.0012~0.0039 ③ Max. 0.0118	
Stainless Steel	-	★ 200~350	☆ 200~350	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ Max. 0.0118	① 0.0012~0.0028 ② 0.0012~0.0039 ③ Max. 0.0118	

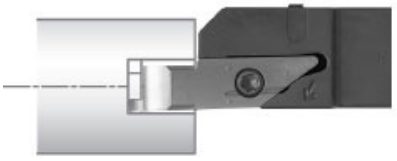
★ : 1st Recommendation ☆ : 2nd Recommendation

Small Diameter Face Grooving



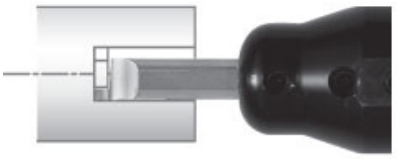
Type	EZFG
Min. Face Groove Dia.	0.197", 0.236", 0.315" (5mm, 6mm, 8mm)
Width	0.039"~0.118" (1.0mm ~ 3.0mm)
Grooving Depth	0.079"~0.118" (2.0mm ~ 3.0mm)
Ref. Page	G45

EZ-Bar



Type	VNFG
Min. Face Groove Dia.	0.315" (8mm)
Width	0.039"~0.118" (1.0mm ~ 3.0mm)
Grooving Depth	0.079"~0.118" (2.0mm ~ 3.0mm)
Ref. Page	G47

Swiss IQ Bar

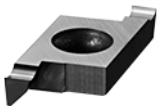


Type	HPFG
Min. Face Groove Dia.	0.315" (8mm)
Width	0.039"~0.118" (1.0mm ~ 3.0mm)
Grooving Depth	0.079"~0.118" (2.0mm ~ 3.0mm)
Ref. Page	G47

Double-Sided Micro Bar

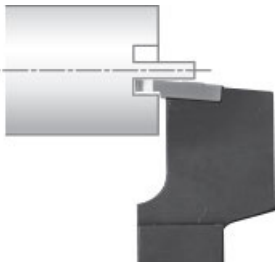
Minimum Face Groove Diameter Ø6~

Type	STW
Min. Face Groove Dia.	0.236" (6mm)
Width	0.020"~0.079" (0.5mm ~ 2.0mm)
Grooving Depth	0.039"~0.118" (1.0mm ~ 3.0mm)
Ref. Page	G48

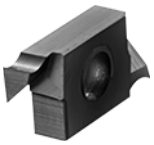


Twin Bar Horizontal Type

Type	S...-STW
Min. Face Groove Dia.	0.236" (6mm)
Width	0.020"~0.079" (0.5mm ~ 2.0mm)
Grooving Depth	0.039"~0.118" (1.0mm ~ 3.0mm)
Ref. Page	G48

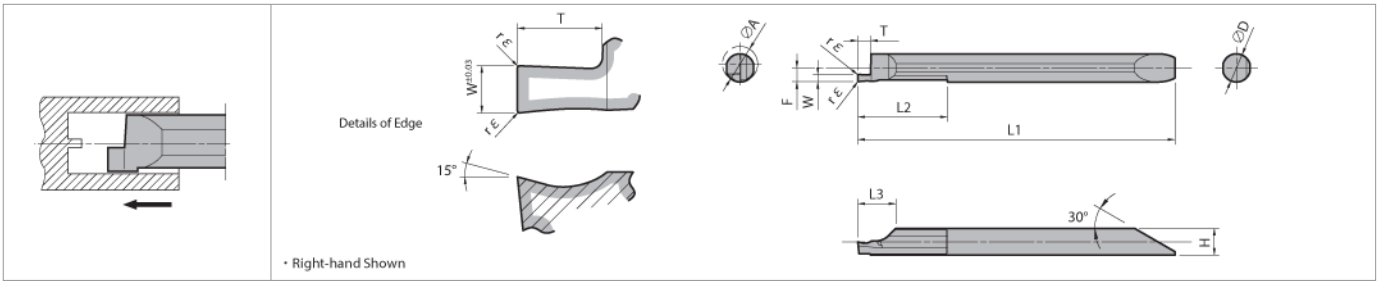


Type	STWS
Min. Face Groove Dia.	0.236" (6mm)
Width	0.020"~0.079" (0.5mm ~ 2.0mm)
Grooving Depth	0.039"~0.118" (1.0mm ~ 3.0mm)
Ref. Page	G49



Twin Bar Vertical Type

EZFG (Face Grooving)



Part Number	Min. Bore Dia.										MEGACOAT	Applicable Sleeve
	ØA	$W^{\pm 0.03}$	rε	ØD	H	L1	L2	L3	F	T	PR1225	G46
EZFGR 050040-100	5	1.0	±0.013 0.05	4	3.8	45.0	12	5.4	1.9	1.5	○	EZH040..
050040-150	5	1.5		4	3.8	45.0	12	5.4	1.9	2.0	○	
EZFGR 060050-100	6	1.0	±0.013 0.05	5	4.8	53.2	25	6.9	2.4	1.5	○	EZH050..
060050-150	6	1.5		5	4.8	53.2	25	6.9	2.4	2.5	○	
060050-200	6	2.0		5	4.8	53.2	25	6.9	2.4	3.0	○	
EZFGR 080070-100	8	1.0	±0.013 0.05	7	6.8	64.2	25	7.9	3.4	2.0	○	EZH070..
080070-150	8	1.5		7	6.8	64.2	25	7.9	3.4	2.5	○	
080070-200	8	2.0		7	6.8	64.2	25	7.9	3.4	3.0	○	
080070-300	8	3.0		7	6.8	64.2	25	7.9	3.4	3.0	○	

Dimension T : Available grooving depth

Recommended Cutting Conditions

Workpiece Material	Insert Grade (Vc:sfm)	EZFG050040-100 EZFG060050-100 EZFG080070-100	EZFG050040-150 EZFG060050-150 EZFG080070-150	EZFG060050-200 EZFG080070-200	EZFG080070-300	Notes
	MEGACOAT					
	PR1225	Feed Rate (ipr)				
Carbon Steel / Alloy Steel	★ 100~325	~0.0008	~0.0012	~0.0016	~0.0020	Wet
Stainless Steel	★ 100~250	~0.0004	~0.0008	~0.0008	~0.0012	

★ : First Recommendation

EZ-Bar Sleeve Identification System (Face Grooving)

EZ FG R 050 040 – 100

EZ Symbol of Bar	Application	Hand	Min. Bore Dia.	Shank Dia.	Groove Width
	FG: Face grooving	R: Right-hand	030:3mm …	030:3mm …	050:0.5mm
					100:1.0mm
					150:1.5mm
					200:2.0mm

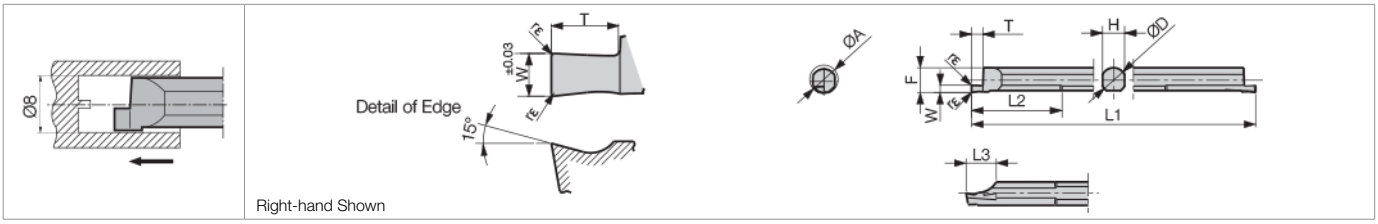
Micro Bars are sold in 1 piece boxes.

Applicable Sleeves

Sleeve Part Number				EZ Bar Part Number			Applicable Machine Manufacturer
EZH-CT (Adjustable with Coolant Hole) ➡ F21	EZH-HP (Adjustable) ➡ F23	EZH-ST ➡ F24~ ➡ F25	Sleeve Shank Dia. ØD1 (mm)	EZFG	HPFG	Shank Dia ØD (mm)	
-	-	EZH 04012ST-80	12.00	EZFGR ...040-...	-	4	General Machines
		05012ST-80		...050-...	-	5	
		07012ST-80		...070-...	HPFGR/L 0807-...	7	
-	EZH 04016HP-100	EZH 04016ST-100	16.00	EZFGR ...040-...	-	4	General Machines
	05016HP-100	05016ST-100		...050-...	-	5	
	07016HP-100	07016ST-100		...070-...	HPFGR/L 0807-...	7	
EZH 04019CT-120	EZH 04019HP-120	EZH 04019ST-120	19.05	EZFGR ...040-...	-	4	CITIZEN MACHINERY MIYANO CO., LTD.
05019CT-120	05019HP-120	05019ST-120		...050-...	-	5	
07019CT-120	07019HP-120	07019ST-120		...070-...	HPFGR/L 0807-...	7	
EZH 04020CT-120	EZH 04020HP-120	EZH 04020ST-120	20.00	EZFGR ...040-...	-	4	AMADA MACHINE TOOLS CO.,LTD. EGURO.LTD TSUGAMI CORPORATION CITIZEN MACHINERY MIYANO CO., LTD. General Machines
05020CT-120	05020HP-120	05020ST-120		...050-...	-	5	
07020CT-120	07020HP-120	07020ST-120		...070-...	HPFGR/L 0807-...	7	
EZH 04022CT-135	EZH 04022HP-135	EZH 04022ST-135	22.00	EZFGR ...040-...	-	4	STAR MICRONICS CO., LTD. Nomura VTC Automatic Lathe Co., Ltd.
05022CT-135	05022HP-135	05022ST-135		...050-...	-	5	
07022CT-135	07022HP-135	07022ST-135		...070-...	HPFGR/L 0807-...	7	
EZH 04025.0CT-135	EZH 04025.0HP-135	EZH 04025.0ST-135	25.00	EZFGR ...040-...	-	4	AMADA MACHINE TOOLS CO.,LTD. EGURO.LTD TSUGAMI CORPORATION CITIZEN MACHINERY MIYANO CO., LTD. General Machines
05025.0CT-135	05025.0HP-135	05025.0ST-135		...050-...	-	5	
07025.0CT-135	07025.0HP-135	07025.0ST-135		...070-...	HPFGR/L 0807-...	7	
EZH 04025.4CT-120	EZH 04025.4HP-120	EZH 04025.4ST-120	25.40	EZFGR ...040-...	-	4	CITIZEN MACHINERY MIYANO CO., LTD.
05025.4CT-120	05025.4HP-120	05025.4ST-120		...050-...	-	5	
07025.4CT-120	07025.4HP-120	07025.4ST-120		...070-...	HPFGR/L 0807-...	7	

- Adjustment pin cannot be installed in EZH-ST sleeves. To adjust overhang of EZB insert, please use EZH-HP sleeves.
- Machine manufacturers in random order.

HPFG (Face Grooving (Small Dia.))



Right-hand Shown

Part Number	Face Grooving Dia. ØA		Dimensions (mm)										Insert Grade			
													PVD Coated Carbide		Carbide	
	MIN	MAX	$W^{\pm 0.001}$	$W^{\pm 0.03}$	rε	ØD	H	L1	L2	L3	F	T	PR930		KW10	
			inch	mm									R	L	R	L
HPFG R/L 0807-10	8 (0)	∞ (∞)	0.039	1	+0 -0.02 0.05	7	6.2	80	25	8.5	6.9	2	○	○	○	
0807-20			0.079	2		7	6.2	80	25	8.5	6.9	3	○	○	○	
0807-30			0.118	3		7	6.2	80	25	8.5	6.9	3	○	○	○	

Dimension T : Available grooving depth

• Face grooving diameter ØD MIN (0) means that you can make the initial groove within MIN - MAX and then widen it to the center.

Applicable Sleeves G46

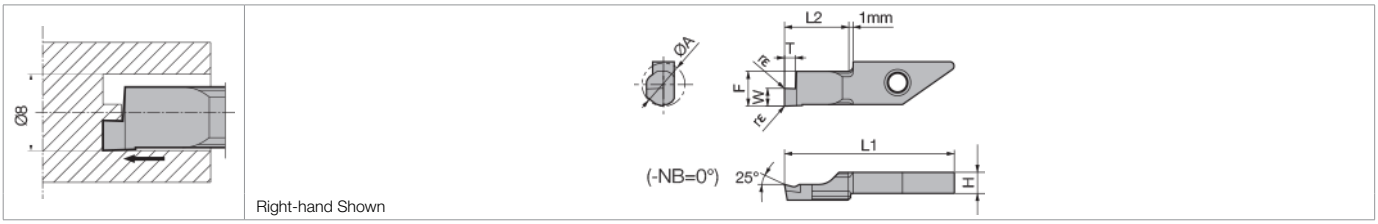
Micro Bars are sold in 10 piece boxes.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)		HPFG R/L 0807-10	HPFG R/L 0807-20	HPFG R/L 0807-30	Remarks
	PVD Coated Carbide	Carbide				
	PR930	KW10	Feed Rate (ipr)			
Carbon Steel	★ 100~325	-	~0.0008	~0.0016	~0.0020	Wet
Alloy Steel	★ 100~250	-	~0.0004	~0.0008	~0.0012	
Non-ferrous Metals (Aluminum / Brass)	-	★ ~975	~0.0016	~0.0024	~0.0031	

★ : 1st Recommendation ☆ : 2nd Recommendation

VNFG (Swiss IQ Bar)



Right-hand Shown

Part Number	Face Grooving Dia. ØA		Dimensions (mm)								Cermet	MEGACOAT	PVD Coated Carbide	Carbide	PCD		Ref. Page for Toolholder
	MIN	MAX	$W^{\pm 0.001}$	$W^{\pm 0.03}$	rε	H	L1	L2	F	T	TC60	PR1225	PR930	KW10	KPD001	KPD010	
			inch	mm													
VNFGR 0810-10	8 (0)	∞ (∞)	0.039	1	0.05	3.9	29.6	10	7.3	2.0	○		○	○			F32
0820-10			0.079	2	0.05	3.9	29.6	10	7.3	2.0			○	○			F33
0830-10			0.118	3	0.05	3.9	29.6	10	7.3	3.0			○	○			

Dimension T : Available grooving depth

• Face grooving diameter ØD MIN (0) means that you can make the initial groove within MIN - MAX and then widen it to the center.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)				VNFG0810	VNFG0820	VNFG0830	Remarks
	Cermet	MEGACOAT	PVD Coated Carbide	Carbide				
	TC60	PR1225	PR930	KW10	Feed Rate (ipr)			
Carbon Steel	☆ 200~400	★ 100~325	☆ 100~325	-	~0.0008	~0.00016	~0.0020	Wet
Alloy Steel	☆ 175~325	★ 100~250	☆ 100~250	-	~0.0004	~0.0008	~0.0012	
Non-ferrous Metals (Aluminum / Brass)	-	-	-	★ ~975	~0.0016	~0.0024	~0.0031	

★ : 1st Recommendation ☆ : 2nd Recommendation

Swiss IQ Bars are sold in 5 piece boxes. *CBN & PCD Inserts are sold in 1 piece boxes.*

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

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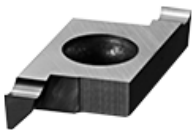
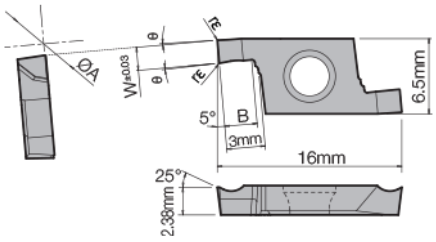
TWFG (Horizontal Type : Insert Specification)





Left-hand Shown

Part Number	Face Grooving Dia. ØA MIN	Face Grooving Dia. ØA MAX	Dimensions (mm) W inch	Dimensions (mm) W mm	rε	B	Angle (°) θ	Insert Grade PVD Coated Carbide PR1025	Insert Grade Carbide KW10
TWFGL 050	6 (0)	∞ (∞)	0.020	0.50	0.05	1.0	1.5°	○	○
080			0.031	0.80	0.05	1.5	1.5°	○	○
100			0.039	1.00	0.05	2.2	2.0°	○	○
125			0.049	1.25	0.05	2.2	2.0°	○	○
150			0.059	1.50	0.05	2.2	2.0°	○	○
180			0.071	1.80	0.05	3.0	2.0°	○	○
200			0.079	2.00	0.05	3.0	2.0°	○	○

Dimension T : Available grooving depth

• Face grooving diameter ØD MIN (0) means that you can make the initial groove within MIN - MAX and then widen it to the center.

STW (Square Shank for Horizontal Type)

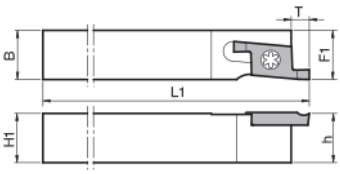


Fig.1

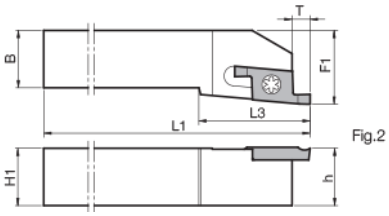


Fig.2

Left-hand Shown

Toolholder Dimensions

Part Number		Stock	Dimensions (mm) H1=h	B	L1	L2	L3	F1	F2	T	F3	Shape	Spare Parts Clamp Screw	Spare Parts Wrench	Applicable Inserts Above
STWL	1010F-15	○	10	10	85	-	-	10	-	3	-	Fig.1	SB-3080TR	LTW-10S	TWFGL ○○○
	1212F-15	○	12	12	85	-	-	12	-	3	-	Fig.1			
	1212K-15	○	12	12	125	-	-	12	-	3	-	Fig.1			
	1616K-15	○	16	16	125	-	-	16	-	3	-	Fig.1			
	2020K-15	○	20	20	125	-	25	25	-	3	-	Fig.2			
	2525M-15	○	25	25	150	-	25	32	-	3	-	Fig.2			

Dimension T shows the distance from the toolholder to the cutting edge. Available groove depth : "B" Dimension of insert

S...-STW (Round Shank for Horizontal Type)

Right-hand toolholder for boring, see Page F36

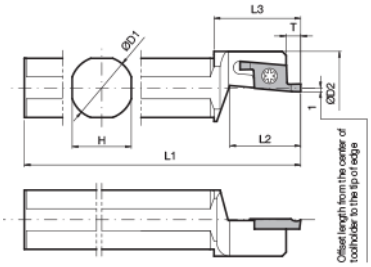


Fig.1

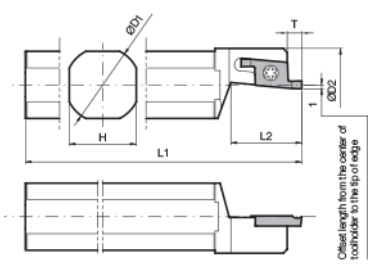


Fig.2

Left-hand Shown

Toolholder Dimensions

Part Number		Stock	Dimensions (mm) ØD1	ØD2	H	L1	L2	L3	T	Shape	Spare Parts Clamp Screw	Spare Parts Wrench	Applicable Inserts Above
S12F-	STWL15	○	12.000	20.0	11	80	18	22	3	Fig.1	SB-3080TR	LTW-10S	TWFGL ○○○
S14H-	STWL15	○	14.000	20.0	13	100	18	22	3	Fig.1			
S15F-	STWL15	○	15.875	20.0	15	85	18	22	3	Fig.1			
S16F-	STWL15	○	16.000	20.0	15	85	18	22	3	Fig.1			
S19G-	STWL15	○	19.050	18.5	17	90	18	-	3	Fig.2			
S19K-	STWL15	○	19.050	18.5	17	120	18	-	3	Fig.2			
S20G-	STWL15	○	20.000	19.5	18	90	18	-	3	Fig.2			
S20K-	STWL15	○	20.000	19.5	18	120	18	-	3	Fig.2			
S22K-	STWL15	○	22.000	21.5	20	125	22	-	3	Fig.2			
S25.0J-	STWL15	○	25.000	24.5	23	110	22	-	3	Fig.2			
S25K-	STWL15	○	25.400	25.0	23	120	22	-	3	Fig.2			

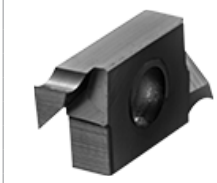
Dimension T shows the distance from the toolholder to the cutting edge. Available groove depth : "B" Dimension of insert

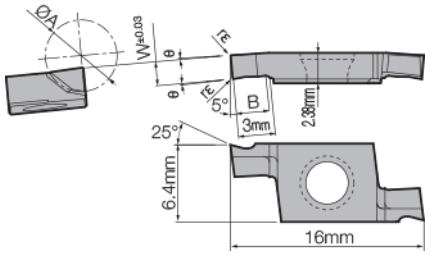
Micro Bars are sold in 5 piece boxes

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

TWFGT (Vertical Type : Insert Specification)





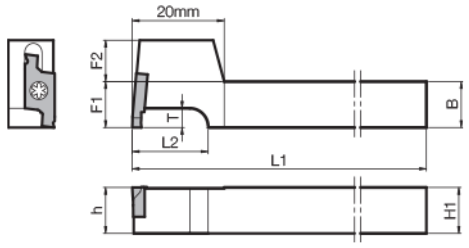
Right-hand Shown

Part Number		Face Grooving Dia. ØA		Dimensions (mm)				Angle (°)	Insert Grade	
				W					PVD Coated Carbide	Carbide
		MIN	MAX	inch	mm	rε	B	θ	PR1025	KW10
TWFGTR	050	6 (0)	∞ (∞)	0.020	0.50	0.05	1.0	1.5°	○	○
	080			0.031	0.80	0.05	1.5	1.5°	○	○
	100			0.039	1.00	0.05	2.2	2.0°	○	○
	125			0.049	1.25	0.05	2.2	2.0°	○	○
	150			0.059	1.50	0.05	2.2	2.0°	○	○
	180			0.071	1.80	0.05	3.0	2.0°	○	○
	200			0.079	2.00	0.05	3.0	2.0°	○	○

Dimension T : Available grooving depth

• Face grooving diameter ØD MIN (0) means that you can make the initial groove within MIN - MAX and then widen it to the center.

STWS (Square Shank for Vertical Type : L-Shape)



Right-hand Shown

Toolholder Dimensions

Part Number		Stock	Dimensions (mm)									Shape	Spare Parts		Applicable Inserts Above
			H1=h	B	L1	L2	L3	F1	F2	T	F3		Clamp Screw	Wrench	
STWSR	1010JX-15T	○	10	10	120	16	-	10	9	3	-	-	SB-3080TR	LTW-10S	TWFGTR ○○○
	1212JX-15T	○	12	12	120	16	-	12	7	3	-	-			
	1616JX-15T	○	16	16	120	20	-	16	3	3	-	-			
STWSR	1010F-15T	○	10	10	85	16	-	10	9	3	-	-			
	1212F-15T	○	12	12	85	16	-	12	7	3	-	-			

Dimension T shows the distance from the toolholder to the cutting edge. Available groove depth : "B" Dimension of insert

Recommended Cutting Conditions (TWFG / TWFGT)

Workpiece Material	Recommended Insert Grade (Vc sfm)		TWFGL050 TWFGL080 TWFGL100 TWFGTR050 TWFGTR080 TWFGTR100	TWFGL125 TWFGL150 TWFGTR125 TWFGTR150	TWFGL180 TWFGL200 TWFGTR180 TWFGTR200	Remarks
	PVD Coated Carbide	Carbide				
	PR1025	KW10	Feed Rate (ipr)			
Carbon Steel	★ 100~325	-	~0.0008	~0.0012	~0.0016	Wet
Alloy Steel	★ 100~250	-	~0.0004	~0.0008	~0.0008	
Non-ferrous Metals (Aluminum / Brass)	-	★ ~975	~0.0012	~0.0016	~0.0024	

★ : 1st Recommendation ☆ : 2nd Recommendation

Twin Bars are sold in 5 piece boxes

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

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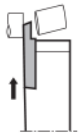
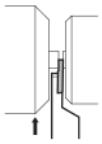
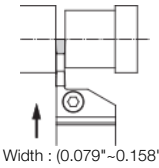
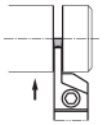
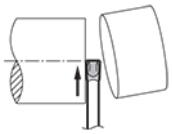
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

CUT-OFF

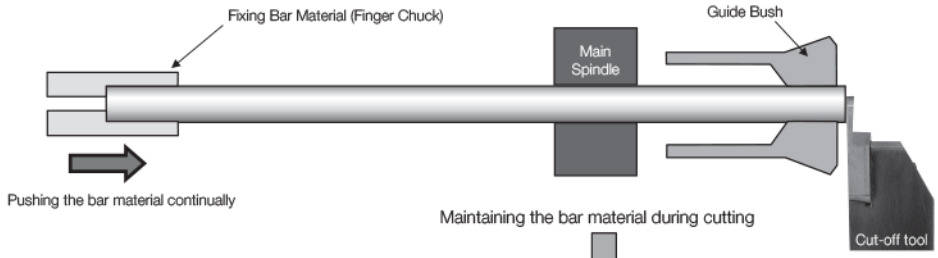
H1 - H26

Product Lineup

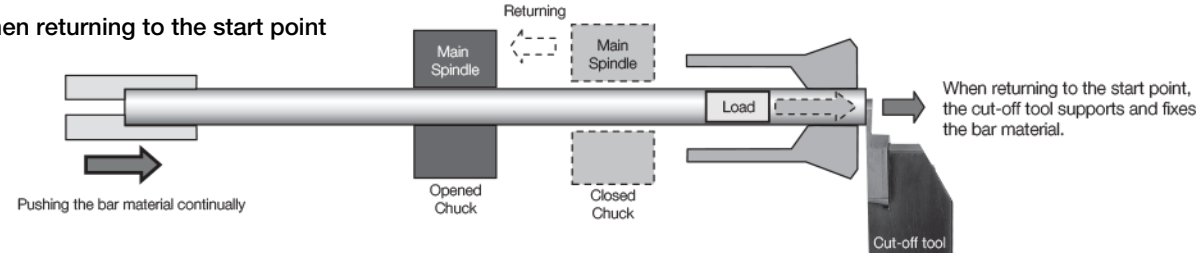
				Advantages
Small Diameter Cut-Off	**Toolholders** (Long Shank for Automatic Lathe) *Cut-Off Diameter* Ø0.197"~Ø0.472" ~Ø0.630" (Ø5mm~Ø12mm) (~Ø16mm)	**KTKF** (H8)  Width : (0.020"~0.079") Width : (0.5mm~2.0mm)		① Insert clamp is side screw type from lateral side ② 2-Edge Insert ③ Max. Cutting Dia. : Ø0.630" (Ø16mm)
	Automatic Lathe For Sub Spindle Tooling *Cut-Off Diameter* Ø0.236"~Ø0.472" Ø0.551"~Ø0.630" (Ø6mm~Ø12mm) (Ø14mm ~Ø16mm)	**KTKFS** (H10)  Width : (0.039"~0.079") Width : (1.0mm~2.0mm)		① Recommended for very small diameter workpieces, or when clearance between main and sub-spindle is very small ② 1-Edge and 2-Edge Inserts Available ③ Max. Cutting Dia. : Ø0.630" (Ø16mm)
KGD	**Bolt Clamp** Cut-Off Diameter Ø0.472"~Ø1.575" (Ø12mm~Ø40mm)	**KGD** (H16)  Width : (0.079"~0.158") Width : (2.0mm~4.0mm)		① Insert is clamped from top side ② 1-Edge and 2-Edge Inserts Available ③ Max. Cutting Dia. : Ø1.575" (Ø40mm)
CERACUT Plunge & Turn (2-edge Insert)	**Bolt Clamp** *Cut-Off Diameter* Ø0.709"~Ø1.575" (Ø18mm~Ø40mm)	**KGM** (H20) **KGM-T** (H21)  Width : 0.059"~0.158",0.118"~0.236" Width : 0.079"~0.197" Width : (1.5mm~4mm, 3mm~6mm) Width : (2mm~5mm)		① Insert is clamped from top side ② 1-Edge and 2-Edge inserts available ③ Max. Cutting Dia. : Ø1.575" (Ø40mm)
CERACUT Cut-Off (1-edge Insert)	**Toolholders** *Cut-Off Diameter* Ø1.181"~Ø2.441" (Ø30mm~Ø62mm)	**KTKH-S** (H24)  Width : (0.020"~0.079") Width : (0.5mm~2.0mm)		① Self-Clamping System Tap the insert lightly with a plastic hammer to set it in the pocket. ② 1-Edge Insert ③ Max. Cutting Dia. : Ø2.441" (Ø62mm)

Cut-Off in Automatic Lathe

1) When a cutting process has just finished



2) When returning to the start point

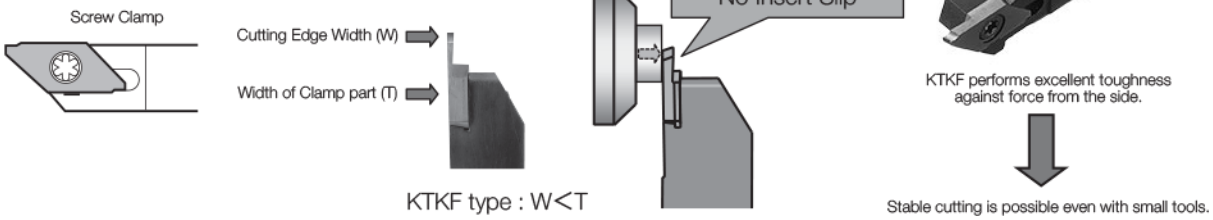


For high precision cutting, choose Screw Clamp toolholder.

1) Improved accuracy of cutting edge position in insert installation ➔ Higher precision even after repeated insert replacements

2) Improved rigidity of insert clamp ➔ Improved accuracy of insert and workpiece position

(KTKF Type)



How to Select Cut-Off Inserts

1) Use a neutral angle insert, when remaining boss is negligible. (See **Fig.1**)

2) Use an angled insert to reduce the remaining boss. (See **Fig.2**)

3) Use a sharp-edged insert with lead angle to minimize the remaining boss when cutting small parts and thin parts. (See **Fig.3**)

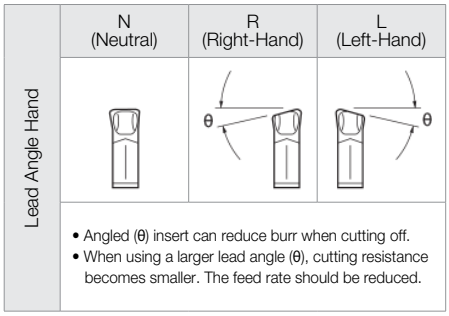


Fig.1

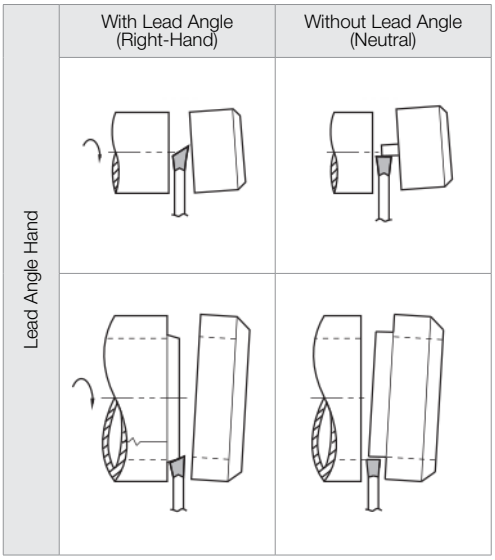


Fig.2

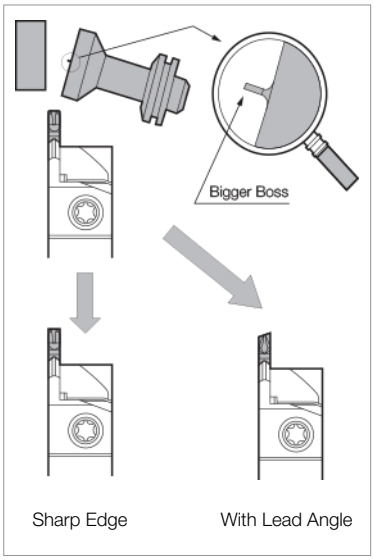


Fig.3

Caution

1) Set the cutting edge height 0.1-0.2mm above the center height
2) Always apply sufficient coolant to the cutting edge
3) Constant spindle revolution is recommended to obtain stable tool life
4) Cut-off as close to the chuck as possible
5) Decrease the feed rate from 1/2 to 1/3 at the near center to prevent chipping
• Overuse of insert and toolholder (blade) may cause insert breakage and toolholder (blade) damage. • Do not rework the insert and toolholder (blade) to prevent damge • Clean the insert pocket well with compressed air when replacing insert

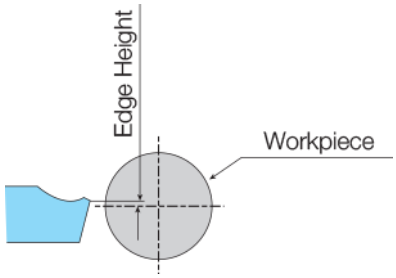
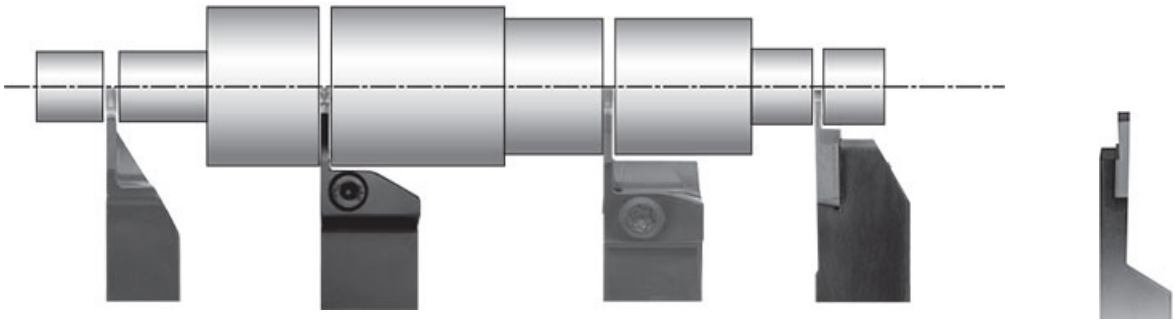


Fig.4

Small Diameter Cut-Off ~Ø1.77" (45mm)

Small Shank



KTKH-S	KGD	KGM	KTKF	KTKFS
Cut-Off Dia: ~Ø1.30" / 45mm	Cut-Off Dia: ~Ø1.653" / 42mm	Cut-Off Dia: ~Ø0.984" / 32mm	Cut-Off Dia: ~Ø0.625" / 16mm	Cut-Off Dia: ~Ø0.630" / 16mm
Shank Size: 0.375"~0.500" / 10mm~20mm	Shank Size: 0.375"~0.750" / 10mm~20mm	Shank Size: 0.375"~0.500" / 10mm~16mm	Shank Size: 0.375"~0.625" / 10mm~16mm	Shank Size: 0.375"~0.500" / 10mm~12mm
Edge Width: 0.063"~0.094" / 2.2mm~4.1mm	Edge Width: 0.059"~0.157" / 1.3mm~4.0mm	Edge Width: 0.079"~0.118" / 1.5mm~4.0mm	Edge Width: 0.020"~0.079" / 0.5mm~2.0mm	Edge Width: 0.059"~0.098" / 1.0mm~2.0mm
Self Clamp	Top Clamp	Top Clamp	Lateral Side Clamp	Lateral Side Clamp
H24	H16	H20	H8	H10

KGD H16

2-Edge
Medium Feed Rate for Swiss
NEW

PQ

2-Edg
Low Fe
for Swis
NEW

PF

2-Edge
Sharp Cutting for Swiss
NEW

PG

KGM H20

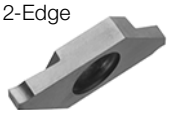
2-Edge
Chipbreaker for Sharp Cutting


2-Edge
Chipbreaker for Stability

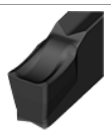

1-Edge
Chipbreaker for Stability


2-Edge
Chipbreaker for High Feed

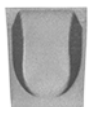

KTKF KTKFS H8 H10

2-Edge

Low Resistance Cut-Off Chipbreaker

GDM Inserts for KGD H12~ H13

Chipbreaker Shape	General Purpose (PM Chipbreaker)	High Feed (PH Chipbreaker)	Medium Feed (PQ Chipbreaker)	Low Feed (PF Chipbreaker)	Sharp Cutting (PG Chipbreaker)
	Chamfered + Honed	Chamfered + Honed	Honed	Honed	Sharp Edge
	Corner-R 0.008"~0.012" 0.20mm~0.30mm	Corner-R 0.008"~0.012" 0.20mm~0.30mm	Corner-R 0.004" 0.10mm	Corner-R 0.0012"~0.0059" 0.03mm~0.15mm	Corner-R 0.002" 0.05mm
			 NEW	 NEW	 NEW

CERACUT Plunge & Turn Inserts H18

Chipbreaker Shape	Sharp Cutting (MT Chipbreaker)		Stable Cutting (TK Chipbreaker)		High Feed (TMR Chipbreaker)
	Chamfered + Honed	Chamfered + Honed	Chamfered + Honed	Sharp Edge	Chamfered + Honed
	Corner-R 0.002" 0.05mm	Sharp Edge	Corner-R 0.008"~0.012" 0.20mm~0.30mm	Corner-R 0.008"~0.012" 0.20mm~0.30mm	Corner-R 0.008" 0.20mm
					

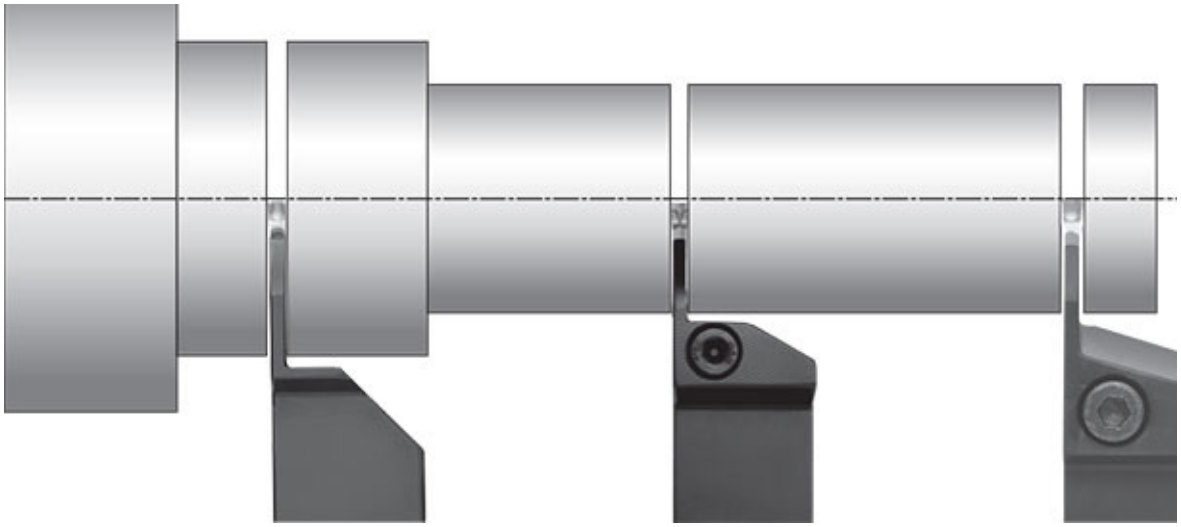

KTKH-S (CERACUT Cut-Off) H24
(Set Clamp)


KGD H16
(Top Clamp)


KGM (CERACUT Plunge & Turn) H20
(Top Clamp)


KTKF (Small Dia. Cut-Off) H8
(Lateral Side Clamp)

General Cut-Off ~Ø2.44" (62mm)

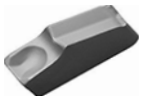


Integral Type

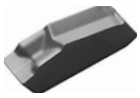
KTKH-S

Cut-Off Dia: ~Ø0.630" / 16mm
Shank Size: 0.375"~0.500" / 10mm~12mm
Edge Width: 0.059"~0.098" / 1.0mm~2.0mm
Lateral Side Clamp

H24



Chipbreaker for General Cut-Off



Chipbreaker for Low Feed Cut-Off

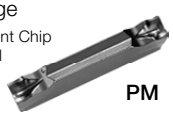
Integral Type

KGD

Cut-Off Dia: ~Ø0.630" / 16mm
Shank Size: 0.375"~0.500" / 10mm~12mm
Edge Width: 0.059"~0.098" / 1.0mm~2.0mm
Lateral Side Clamp

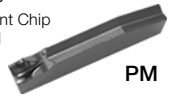
H16

2-Edge
Excellent Chip Control



PM

1-Edge
Excellent Chip Control

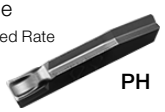


PM

2-Edge
High Feed Rate

PH

1-Edge
High Feed Rate



PH

Integral Type

KGM-T

Cut-Off Dia: ~Ø0.630" / 16mm
Shank Size: 0.375"~0.500" / 10mm~12mm
Edge Width: 0.059"~0.098" / 1.0mm~2.0mm
Lateral Side Clamp

H21

2-Edge
Chipbreaker for Sharp Cutting

2-Edge
Chipbreaker for Stability

1-Edge
Chipbreaker for Stability

Integral Type

KTKH-S
(CERACUT Cut-Off)
H24

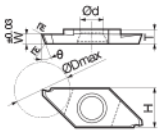
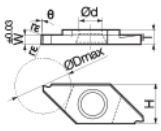
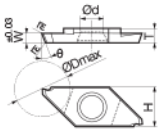
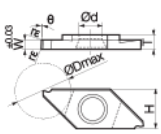
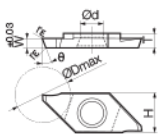
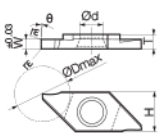
KGD
H16

KGM-T
(CERACUT Plunge & Turn)
H21

TKF (TKF12)

Classification of Usage
- ● : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

		MEGA COAT NANO	MEGA COAT	PVD Coated Carbide	Carbide
P	Carbon Steel / Alloy Steel	●	◔	◔	
M	Stainless Steel	◔	●	◔	
K	Cast Iron				●
N	Non-ferrous Metals				●

Insert (Right-handed Insert Shown)	Part Number	W inch	W mm	ØD Max	rε	T	H	Ød	Angle θ	PR1425	PR1225	PR1025	KW10	Ref. Page for Toolholder
 Right Lead Angle		TKF12R/L 050-S-16DR	0.020	0.50	5	0.03	3	8.7	5	16°	●	●	○	○	H8
		070-S-16DR	0.028	0.70	8	0.03	3	8.7	5	16°	●	●	●	○	
		100-S-16DR	0.039	1.00	12	0.03	3	8.7	5	16°	●	●	Ⓡ	○	
		NEW 125-S-16DR	0.049	1.25	12	0.03	3	8.7	5	16°	●	●			
		150-S-16DR	0.059	1.50	12	0.03	3	8.7	5	16°	●	●	Ⓡ	○	
		200-S-16DR	0.079	2.00	12	0.03	3	8.7	5	16°	●	●	○	○	
		TKF12R/L 050-S	0.020	0.50	5	0.03	3	8.7	5	0°	●	●	○	●	
		070-S	0.028	0.70	8	0.03	3	8.7	5	0°	●	●	Ⓡ	●	
		100-S	0.039	1.00	12	0.03	3	8.7	5	0°	●	●	Ⓡ	Ⓛ	
		NEW 125-S	0.049	1.25	12	0.03	3	8.7	5	0°	●	●			
		150-S	0.059	1.50	12	0.03	3	8.7	5	0°	●	●	Ⓡ	○	
		200-S	0.079	2.00	12	0.03	3	8.7	5	0°	●	●	○	○	
 Right Lead Angle Tough Edge		TKF12R/L 100-T-16DR	0.039	1.00	12	0.08	3	8.7	5	16°	●	●			
		150-T-16DR	0.059	1.50	12	0.08	3	8.7	5	16°	●	●			
		200-T-16DR	0.079	2.00	12	0.08	3	8.7	5	16°	●	●			
 Tough Edge		TKF12R/L 100-T	0.039	1.00	12	0.08	3	8.7	5	0°	●	●			
		150-T	0.059	1.50	12	0.08	3	8.7	5	0°	●	●			
		200-T	0.079	2.00	12	0.08	3	8.7	5	0°	●	●			
 Right Lead Angle		TKF12R/L 050-NB-20DR	0.020	0.50	5	0.00	3	8.7	5	20°	●		○	○	
		070-NB-20DR	0.028	0.70	8	0.00	3	8.7	5	20°	●		○	○	
		100-NB-20DR	0.039	1.00	12	0.00	3	8.7	5	20°	●		Ⓡ	Ⓡ	
		150-NB-20DR	0.059	1.50	12	0.00	3	8.7	5	20°	●		○	○	
		200-NB-20DR	0.079	2.00	12	0.00	3	8.7	5	20°	●		○	○	
 Without Chipbreaker		TKF12R/L 050-NB	0.020	0.50	5	0.00	3	8.7	5	0°	●		○	●	
		070-NB	0.028	0.70	8	0.00	3	8.7	5	0°	●		○	●	
		100-NB	0.039	1.00	12	0.00	3	8.7	5	0°	●		○	○	
		150-NB	0.059	1.50	12	0.00	3	8.7	5	0°	●		○	○	
		200-NB	0.079	2.00	12	0.00	3	8.7	5	0°	●		○	○	

- Lead angle shows the angle when installed in the toolholder.
- As Fig.1 of H8 shows, the cutting diameter of the insert is indicated when the top of the cutting edge progresses 1mm from the center.

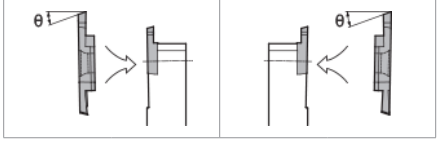
Indication of Description

TKF 12 R 050 - S - 16D R

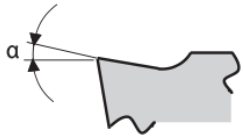
Insert Name	Insert Size	Width	Insert Hand	Name of Chipbreaker	Lead Angle (θ) (Front Cutting Edge Angle)	Lead Angle Hand
			R: Right-Hand L: Left-Hand	S: S-Chipbreaker T: T-Chipbreaker (Tough Edge) NB: Without Chipbreaker		R: R-Hand R: L-Hand

Table 1

Toolholder	R-Hand (R)	Toolholder	L-Hand (L)
Insert	R-Hand (R)	Insert	L-Hand (L)
Lead Angle	R-Hand (R)	Lead Angle	R-Hand (R)



Descriptions of Chipbreaker Edge Shape

Edge Shape \ Chipbreaker	S-Chipbreaker α (°)	S-Chipbreaker Part Number	T-Chipbreaker (Tough Edge) α (°)	T-Chipbreaker (Tough Edge) Part Number	NB Chipbreaker α (°)	NB Chipbreaker Part Number
	15°	TKF12...-S	12°	TKF...-T TKF...-T-16DR	0°	TKF...-NB TKF...-NB-16DR
	20°	TKF16...-S TKF16...-S-16DR				
	25°	TKF12...-S-16DR				

Inserts are sold in 10 piece boxes

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

TKF (TKF16)

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel	●	◔	◔	
M	Stainless Steel	◔	●	◔	
K	Cast Iron				●
N	Non-ferrous Metals				●

Insert (Right-handed Insert Shown)	Part Number	W inch	W mm	ØD Max	rε	T	H	Ød	θ	MEGA COAT NANO PR1425	MEGA COAT PR1225	PVD Coated Carbide PR1025	Carbide KW10	Ref. Page for Toolholder
 Right Lead Angle	TKF16R/L 150-S-16DR	0.059	1.5	16	0.05	4	9.5	5	16°	●	●	Ⓡ	○	➡ H8
	200-S-16DR	0.079	2.0	16	0.05	4	9.5	5	16°	●	●	Ⓛ	○	
	TKF16R/L 150-S	0.059	1.5	16	0.05	4	9.5	5	0°	●	●	Ⓡ	○	
	200-S	0.079	2.0	16	0.05	4	9.5	5	0°	●	●	Ⓛ	○	
 Right Lead Angle Tough Edge	TKF16R/L 150-T-16DR	0.059	1.5	16	0.08	4	9.5	5	16°	●	●			
	200-T-16DR	0.079	2.0	16	0.08	4	9.5	5	16°	●	●			
 Tough Edge	TKF16R/L 150-T	0.059	1.5	16	0.08	4	9.5	5	0°	●	●			
	200-T	0.079	2.0	16	0.08	4	9.5	5	0°	●	●			
 Right Lead Angle Without Chipbreaker	TKF16R/L 150-NB-20DR	0.059	1.5	16	0.00	4	9.5	5	20°	●		○	○	
	200-NB-20DR	0.079	2.0	16	0.00	4	9.5	5	20°	●		Ⓡ	○	
 Without Chipbreaker	TKF16R/L 150-NB	0.059	1.5	16	0.00	4	9.5	5	0°	●		○	○	
	200-NB	0.079	2.0	16	0.00	4	9.5	5	0°	●		Ⓛ	○	

• Lead angle shows the angle when installed in the toolholder.
• As Fig.1 of ➡ H8 shows, the cutting diameter of the insert is indicated when the top of the cutting edge progresses 1mm from the center.

Recommended Cutting Conditions (TKF12/16)

Workpiece Material	Recommended Grade (Vc sfm) MEGACOAT NANO PR1425	MEGACOAT NANO PR1535	MEGA COAT PR1225	PVD Coated Carbide PR1025	Carbide KW10	TKF12 Width 0.020" (0.50mm)	0.028" (0.70mm)	0.039" (1.00mm)	0.049" (1.25mm)	0.059" (1.50mm)	0.079" (2.00mm)	TKF16 Width 0.059" (1.50mm)	0.079" (2.00mm)	Remarks
						Depth of Cut: D.O.C.(in), Feed: f(ipr)								
						Feed Rate (ipr)						Feed Rate (ipr)		
Carbon Steel	★ 225~550 (175~450)	☆ 230~500 (160~400)	☆ 225~500 (175~400)	☆ 200~425	-	0.0004~0.0008	0.0004~0.0012	0.0004~0.0016 (0.0004~0.0020)	0.0004~0.0016	0.0004~0.0016 (0.0008~0.0039)	0.0004~0.0016 (0.0008~0.0039)	0.0008~0.0028 (0.0008~0.0039)	0.0008~0.0028 (0.0008~0.0039)	Wet
Alloy Steel	★ 225~550 (175~450)	☆ 230~500 (160~400)	☆ 225~500 (175~400)	☆ 200~425	-	0.0004~0.0008	0.0004~0.0012	0.0004~0.0016 (0.0004~0.0020)	0.0004~0.0016	0.0004~0.0016 (0.0008~0.0039)	0.0004~0.0016 (0.0008~0.0039)	0.0008~0.0028 (0.0008~0.0039)	0.0008~0.0028 (0.0008~0.0039)	
Stainless Steel	☆ 200~450 (125~400)	★ 200~400 (130~330)	☆ 200~400 (125~325)	☆ 175~325	-	0.0002~0.0006	0.0004~0.0008	0.0004~0.0008 (0.0004~0.0012)	0.0004~0.0008	0.0004~0.0008 (0.0004~0.0020)	0.0004~0.0008 (0.0004~0.0020)	0.0004~0.0016 (0.0004~0.0020)	0.0004~0.0016 (0.0004~0.0020)	
Cast Iron	-		-	-	★ 175~325	0.0004~0.0012	0.0004~0.0016	0.0004~0.0020	0.0004~0.0020	0.0004~0.0020	0.0004~0.0020	0.0008~0.0032	0.0008~0.0032	
Aluminum	-		-	-	★ 650~1475	0.0004~0.0012	0.0004~0.0016	0.0004~0.0020	0.0004~0.0020	0.0004~0.0020	0.0004~0.0020	0.0008~0.0032	0.0008~0.0032	
Brass	-		-	-	★ 325~650	0.0004~0.0012	0.0004~0.0016	0.0004~0.0024	0.0004~0.0024	0.0004~0.0024	0.0004~0.0024	0.0008~0.0039	0.0008~0.0039	

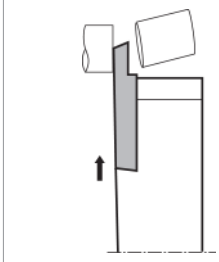
( ) : Cutting condition of tough edge type inserts (TKF..T..)

★ : 1st Recommendation ☆ : 2nd Recommendation

Inserts are sold in 10 piece boxes

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

KTKF (For Small Diameter Cut-Off)



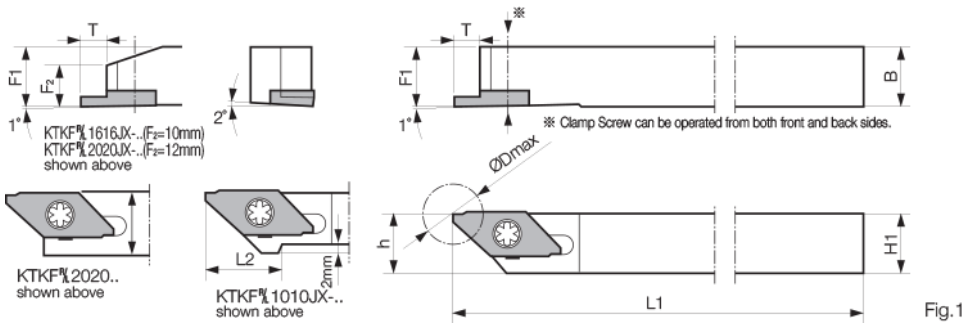
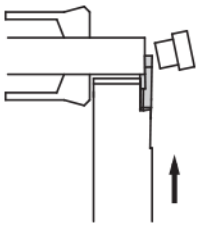


Fig.1

Right-hand Shown — Right-hand Insert for Right-hand Toolholder



(Goose-neck Holder)

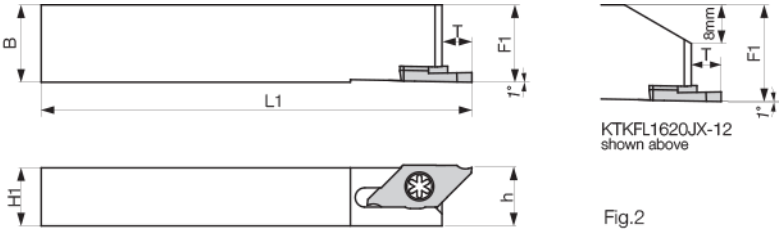


Fig.2

Left-hand Shown — Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H1=h	B	L1	L2	F1	T	Shape	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts ➡ H6~ ➡ H7
KTKF□ 6-12JX	●	●	inch	0.375	0.375	4.750	0.590	0.375	0.236	Fig.1	SB-4590TRWN	LTW-10S	TKF12□...
8-12JX	●	●		0.500	0.500	4.750	-	0.500	0.236	Fig.1			
10-12JX	●	●		0.625	0.625	4.750	-	0.625	0.236	Fig.1			
KTKF□ 6-16JX	●	●		0.375	0.375	4.750	0.787	0.375	0.630	Fig.1	SB-4590TRWN	LTW-10S	TKF16□...
8-16JX	●	●		0.500	0.500	4.750	-	0.500	0.630	Fig.1			
10-16JX	●	●		0.625	0.625	4.750	-	0.625	0.630	Fig.1			
KTKF□ 52-12JX		●		0.500	0.625	4.750	-	0.625	0.236	Fig.1	SB-4590TRWN	LTW-10S	TKF12□...
62.5-12JX		●		0.625	0.750	4.750	-	0.750	0.236	Fig.1			
KTKF□ 1010JX-12	●	○	mm	10	10	120	15	10	6	Fig.1	SB-4590TRWN	LTW-10S	TKF12□...
1212JX-12	●	○		12	12	120	-	12	6	Fig.1			
1616JX-12	●	○		16	16	120	-	16	6	Fig.1			
2020JX-12	●			20	20	120	-	20	6	Fig.1			
KTKF□ 1010JX-16	○	○		10	10	120	20	10	8	Fig.1	SB-4590TRWN	LTW-10S	TKF16□...
1212JX-16	○	○		12	12	120	-	12	8	Fig.1			
1616JX-16	○	○		16	16	120	-	16	8	Fig.1			
2020JX-16	○			20	20	120	-	20	8	Fig.1			
KTKF□ 1212F-12	○			12	12	85	-	12	6	Fig.1	SB-4590TRWN	LTW-10S	TKF12□...
1212F-16	○			12	12	85	-	12	8	Fig.1			TKF16□...
KTKF□ 1216JX-12		○		12	16	120	-	16	6	Fig.2	SB-4590TRWN	LTW-10S	TKF12L...
1620JX-12		○		16	20	120	-	20	6	Fig.2			

- Dimension T shows the distance from the toolholder to the cutting edge.
- See Page ➡ H6~ ➡ H7 for actual cutting diameter.

Recommended Cutting Conditions ➡ H7

Note : Cutting diameter of -12 type toolholder (ØDmax) depends on the insert grooving width.

How to Use

1) When using main spindle only

Workpiece maximum ØD1 (**Fig.1**)=ØDmax
Even if the cutting edge runs beyond the center line, the insert does not contact the workpiece, since the workpiece falls off.
(The clearance between the insert and the workpiece is 0.2mm)

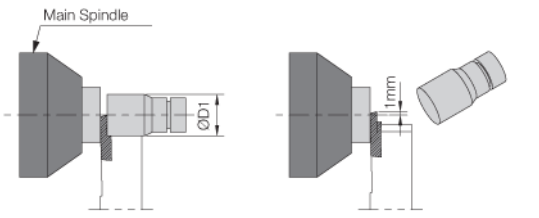


Fig.1 (When the edge is at the center)

Fig.2 (When the edge is 1mm beyond the center)

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

2) When using both Main and Sub spindles

In this case, when the cutting edge runs beyond the center line, the insert will contact the workpiece, since the workpiece does not fall off.
Therefore the programmed distance beyond the center must be considered.
e.g. When the cutting edge is programmed to run 1mm beyond the center.
Workpiece maximum, ØD2 (**Fig.4**) = [ØDmax - 1mm×2] (mm)
(The clearance between the insert and the workpiece is 0.2mm)

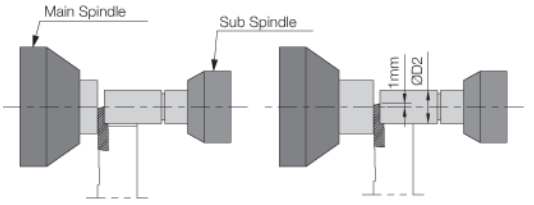
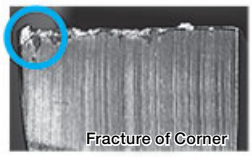
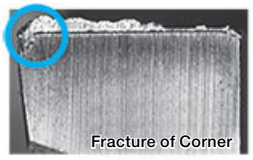


Fig.3 (When the edge is at the center)

Fig.4 (When the edge is 1mm beyond the center)

Tough Edge Type T Chipbreaker

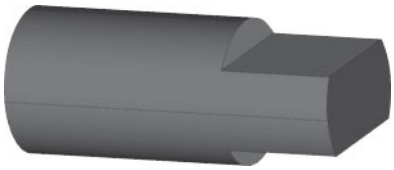
Fracture Resistance Comparison (Interrupted Machining)

Tough Edge Type T Chipbreaker (PR1225) 3,000 Passes	Competitor A 700 Passes	Competitor B 3,000 Passes
	 Fracture of Corner	 Fracture of Corner

	1,000 Passes	2,000 Passes	3,000 Passes
Tough Edge Type T Chipbreaker (PR1225)	→	→	→
Competitor A	→ X		
Competitor B	→	→	→ X

Compared to Competitor A and B, Tough Edge "T Chipbreaker" achieves superior fracture resistance during interrupted cutting

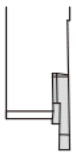
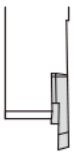
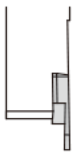
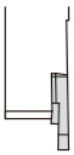
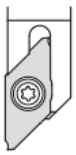
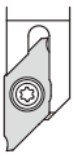
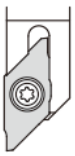
Cutting Conditions
Vc=250 f=0.0020ipr (Cut-Off 0.0006ipr)
Wet W1-9 (with flat cuts on two sides)
TKF12R200-T-16DR (PR1225)



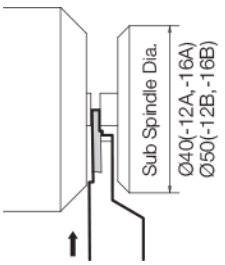
Worpiece (with flat cuts on two sides)

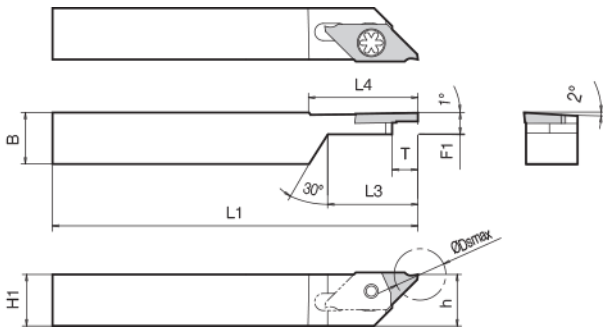
How to Select Edge Preparation

Troubleshooting

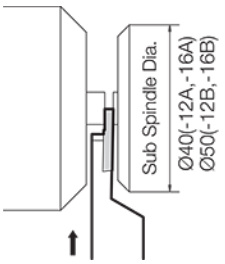
Problems	Countermeasures	Countermeasures						
		Lead Angle (θ)		Edge Width		Name of Chipbreaker		
		No (0°)	Yes	Narrower	Wider	S	T	NB
								
Insert Fracture	Insert Fracture Prevention	Effective			Effective		Effective	Effective
Long Cutting Time	Cutting Time Reduction	Effective			Effective		Effective	Effective
Entangled Chips	Chip Entanglement Prevention	Effective		Effective		Effective		
Large Boss Remain	Small Boss Remain		Effective	Effective		Effective		
Ring Remain (Hollow Workpiece)	Prevention of Ring Remain		Effective	Effective		Effective		
Deformation of Hollow Workpiece (pipe)	Preventing Deformation		Effective	Effective		Effective		

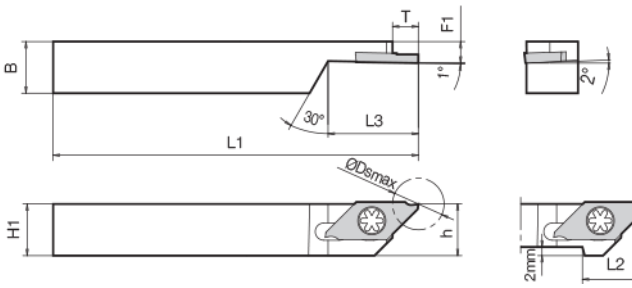
KTKFS (Small Diameter Cut-Off for Sub Spindle)





Right-hand Shown — Right-hand Insert for Right-hand Toolholder





KTKFS□1010K-12A
KTKFS□1010K-16A
only for left shape

Left-hand Shown — Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

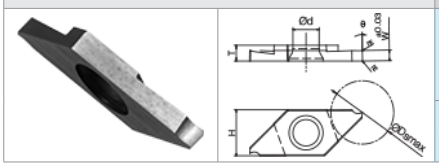
Part Number	Stock R	Stock L	Unit	Cut-Off Dia. ØDsmax	Dimensions H1=h	B	L1	L2	L3	L4※	F1	T	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts ➡ H11
KTKFS□ 6-12JX	●	●	inch	0.236~0.472	0.375	0.375	4.750	0.590	0.866	1.024	0.197	0.236	SB-4050TRN	LTW-10S	TKFS12□
8-12JX	●	●		0.236~0.472	0.500	0.500	4.750	-	1.024	1.024	0.197	0.236			
KTKFS□ 6-16JX	●	●		0.551~0.630	0.375	0.375	4.750	0.787	0.866	1.181	0.197	0.315	SB-4050TRN	LTW-10S	TKFS16□
8-16JX	●	●		0.551~0.630	0.500	0.500	4.750	-	1.024	1.181	0.197	0.315			
KTKFS□ 1010K-12A	○	○	mm	6~12	10	10	120	15	22	26	5	6	SB-4050TRN	LTW-10S	TKFS12□
1212F-12A	○	○		6~12	12	12	85	-	22	26	5	6			
1212K-12B	○	○		6~12	12	12	120	-	26	26	5	6			
KTKFS□ 1010K-16A	○	○		14~16	10	10	120	20	22	30	5	8	SB-4050TRN	LTW-10S	TKFS16□
1212F-16A	○	○		14~16	12	12	85	-	22	30	5	8			
1212K-16B	○	○		14~16	12	12	120	-	26	30	5	8			

• Dimension T shows the distance from the toolholder to the cutting edge.

Recommended Cutting Conditions ➡ **H11**

※ Only Right-hand is available for L4 dimension

TKFS (ØDmax)

Insert (Right-handed Insert Shown)	Part Number	Dimensions (mm) W inch	W mm	ØD Max
	TKFS12□ 100-S	0.039	1.0	6
	150-S	0.059	1.5	9
	200-S	0.079	2.0	12
	TKFS16□ 150-S	0.059	1.5	14
	200-S	0.079	2.0	16

As **Fig.2** shows, the cutting diameter of the insert is indicated when the top of the cutting edge progresses 1mm from the center

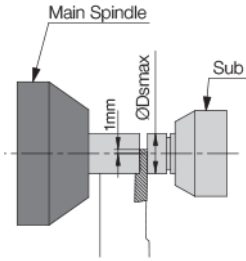


Fig.1

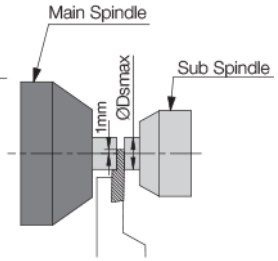


Fig.2

• As **Fig.1** shows, use KTKFL (Left-hand) when the distance between main spindle and sub spindle are long.

• As **Fig.2** shows, KTKFS is recommended when the workpiece diameters are small and the distance between the main spindle and sub spindle are short

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World Express (Shipping: 7-10 Business Days) : ○

Applicable Inserts

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		MEGACOAT NANO PR1425	MEGACOAT NANO PR1225	PVD Coated Carbide PR1025	Carbide KW10
P	Carbon Steel / Alloy Steel	●	◔	◔	
M	Stainless Steel	◔	●	◔	
K	Cast Iron				●
N	Non-ferrous Metals				●

Insert (Right-handed Insert Shown)	Part Number	W inch	W mm	ØD Max	rε	T	H	Ød	Angle θ	MEGACOAT NANO PR1425	MEGACOAT NANO PR1225	PVD Coated Carbide PR1025	Carbide KW10
	TKFS12R/L 100-S	0.039	1.0	6	0.05	2.2	8.7	4.4	0°	●	●	○	○
	150-S	0.059	1.5	9	0.05	2.2	8.7	4.4	0°	●	●	○	○
	200-S	0.079	2.0	12	0.05	2.2	8.7	4.4	0°	●	●	○	○
	TKFS12R/L 150-S	0.059	1.5	14	0.05	2.2	9.5	4.4	0°	●	●	○	○
	200-S	0.079	2.0	16	0.05	2.2	9.5	4.4	0°	●	●	○	○

• Lead angle (θ) shows the angle when installed in the toolholder.
• As **Fig.1** of ➔ **H10** shows, the cutting diameter of the insert is indicated when the top of the cutting edge progresses 1mm from the center.

Recommended Cutting Conditions

Workpiece Material	Recommended Grade (Vc sfm) MEGACOAT NANO PR1425	MEGACOAT NANO PR1535	MEGA COAT PR1225	PVD Coated Carbide PR1025	Carbide KW10	TKFS12 Width 0.039" (1.0mm)	TKFS12 Width 0.059" (1.5mm)	TKFS12 Width 0.079" (2.0mm)	TKFS16 Width 0.059" (1.5mm)	TKFS16 Width 0.079" (2.0mm)	Remarks
						Feed Rate (ipr)			Feed Rate (ipr)		
Carbon Steel	★ 225~550	☆ 230~490	☆ 225~500	☆ 200~425	-	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	Wet
Alloy Steel	★ 225~550	☆ 230~490	☆ 225~500	☆ 200~425	-	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	
Stainless Steel	☆ 200~450	★ 200~400	☆ 200~400	☆ 175~325	-	0.0004~0.0008	0.0004~0.0008	0.0004~0.0012	0.0004~0.0008	0.0004~0.0012	
Cast Iron	-		-	-	★ 175~325	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	
Aluminum	-		-	-	★ 650~1475	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	
Brass	-		-	-	★ 325~650	0.0004~0.0016	0.0004~0.0016	0.0004~0.0016	0.0004~0.0016	0.0004~0.0016	

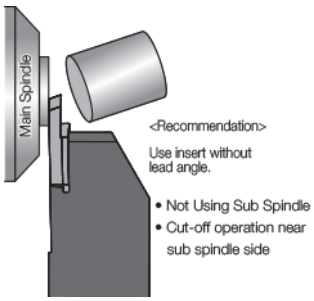
★ : 1st Recommendation ☆ : 2nd Recommendation

How to Use Small Diameter Cut-Off Tool

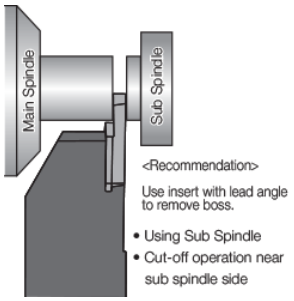
KTKF

• Both Right-hand and Left-hand types are applicable to gang tool post
• Left-hand type is used at cut-off operation using sub spindle

KTKFR Right-Hand Toolholder



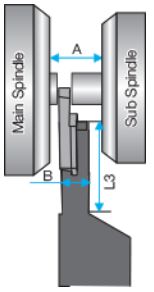
KTKFL Left-Hand Toolholder



KTKFS

• When machining workpiece with small diameter, use KTKFS to reduce overhang distance from the main spindle

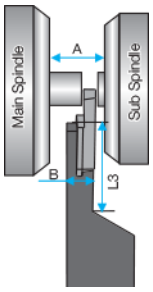
KTKFSR Right-Hand Toolholder



<How to Select> R-Hand
• Long workpiece and more rigidity
• Cut-off operation near main spindle side

L3 Dimension
• Sub Spindle Dia.
Ø40mm→22 (A type)
Ø50mm→26 (B type)

KTKFSL Left-Hand Toolholder



<How to Select> L-Hand
• Short workpiece and less rigidity
• Cut-off operation near main spindle side

L3 Dimension
• Sub Spindle Dia.
Ø40mm→22 (A type)
Ø50mm→26 (B type)

Inserts are sold in 10 piece boxes

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

GDM / GDG

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel	◔	●	◔	
M	Stainless Steel	●	◔	◔	
K	Cast Iron				●

Insert (Right-handed Insert Shown)	Part Number	Dimensions (inch) W inch	W mm	W Tolerance	rε	M	L	H	Angle θ	MEGA COAT NANO PR1535	MEGACOAT PR1225	MEGACOAT PR1215	Carbide GW15	Ref. Page for Toolholder
Cut-off for Small Parts Machining Low Feed 2-edge	GDM 1316N-003PF	0.051	1.3	±0.0016	0.0012	0.039	0.630	0.146	-	○	○	○		
	1316N-015PF	0.051	1.3		0.0059	0.039	0.630	0.146	-	○	○	○		
	1516N-003PF	0.059	1.5		0.0012	0.047	0.630	0.146	-	○	●	○		
	1516N-015PF	0.059	1.5		0.0059	0.047	0.630	0.146	-	○	●	○		
	2020N-003PF	0.079	2.0		0.0012	0.067	0.787	0.169	-	○	●			
	2020N-015PF	0.079	2.0		0.0059	0.067	0.787	0.169	-	●	●	○		
	2520N-003PF	0.098	2.5		0.0012	0.083	0.787	0.169	-	○	●			
	2520N-015PF	0.098	2.5		0.0059	0.083	0.787	0.169	-	●	●	○		
	3020N-003PF	0.118	3.0		0.0012	0.091	0.787	0.169	-	○	●			
	3020N-015PF	0.118	3.0		0.0059	0.091	0.787	0.169	-	●	●	○		
15° Lead Angle Low Feed / 2-edge	GDM 1316R-003PF-15D	0.051	1.3	±0.0016	0.0012	0.039	0.630	0.146	15°	○	○	○		→ H16 → H17
	1516R-003PF-15D	0.059	1.5		0.0012	0.047	0.630	0.146	15°	○	●	○		
	1516R-015PF-15D	0.059	1.5		0.0059	0.047	0.630	0.146	15°	Ⓡ	Ⓡ	Ⓡ		
	2020R-003PF-15D	0.079	2.0		0.0012	0.067	0.787	0.169	15°	○	●			
	2020R-015PF-15D	0.079	2.0		0.0059	0.067	0.787	0.169	15°	Ⓡ	Ⓡ	Ⓡ		
	2520R-003PF-15D	0.098	2.5		0.0012	0.083	0.787	0.169	15°	○	●			
	2520R-015PF-15D	0.098	2.5		0.0059	0.083	0.787	0.169	15°	Ⓡ	Ⓡ	Ⓡ		
	3020R-003PF-15D	0.118	3.0		0.0012	0.091	0.787	0.169	15°	○	●			
	3020R-015PF-15D	0.118	3.0		0.0059	0.091	0.787	0.169	15°	Ⓡ	Ⓡ	Ⓡ		
Medium Feed 2-edge	GDM 2020N-010PQ	0.079	2.0	±0.0012	0.0039	0.067	0.787	0.169	-	○	●			
	2520N-010PQ	0.098	2.5		0.0039	0.083	0.787	0.169	-	○	●			
	3020N-010PQ	0.118	3.0		0.0039	0.091	0.787	0.169	-	○	●			
15° Lead Angle Medium Feed / 2-edge	GDM 2020R-010PQ-15D	0.079	2.0	±0.0012	0.0039	0.067	0.787	0.169	15°	Ⓡ	Ⓡ			
	2520R-010PQ-15D	0.098	2.5		0.0039	0.083	0.787	0.169	15°	Ⓡ	Ⓡ			
	3020R-010PQ-15D	0.118	3.0		0.0039	0.091	0.787	0.169	15°	Ⓡ	Ⓡ			
2-edge	GDG 2020N-005PG	0.079	2.0	±0.0008	0.0020	0.067	0.787	0.169	-	○	○		○	
	2520N-005PG	0.098	2.5		0.0020	0.083	0.787	0.169	-	○	○		○	
	3020N-005PG	0.118	3.0		0.0020	0.091	0.787	0.169	-	○	○		○	
15° Lead Angle 2-edge	GDG 2020R-005PG-15D	0.079	2.0	±0.0008	0.0020	0.067	0.787	0.169	15°	Ⓡ	Ⓡ		Ⓡ	
	2520R-005PG-15D	0.098	2.5		0.0020	0.083	0.787	0.169	15°	Ⓡ	Ⓡ		Ⓡ	
	3020R-005PG-15D	0.118	3.0		0.0020	0.091	0.787	0.169	15°	Ⓡ	Ⓡ		Ⓡ	

Using PM/PF Chipbreaker (designed for cut-off) for grooving will not create a flat bottom (See Fig.)

Recommended Cutting Conditions → H14

Inserts are sold in 10 piece boxes

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

NEW ITEMS!

GDM / GDMS / GDG

Classification of Usage
- ◕ : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel	◔	◕	◔
M	Stainless Steel	◕	◔	◔
K	Cast Iron			

Insert (Right-handed Insert Shown)			Part Number	Dimensions (inch) W inch	W mm	W Tolerance	rε	M	L	H	Angle θ	MEGA COAT NANO PR1535	MEGACOAT PR1225	MEGACOAT PR1215	Ref. Page for Toolholder
Cut-off	2-edge		GDM 2020N-020PM	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	-	○	●	●	H16 H17
			2520N-020PM	0.098	2.5		0.008	0.077	0.787	0.169	-	○	●	●	
			3020N-025PM	0.118	3.0		0.010	0.091	0.787	0.169	-	○	●	●	
			4020N-030PM	0.158	4.0		0.012	0.130	0.787	0.169	-	○	●	●	
	2-edge		GDM 2020R-020PM-6D	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	6°	Ⓡ	Ⓡ	Ⓡ	
			2520R-020PM-6D	0.098	2.5		0.008	0.077	0.787	0.169	6°	Ⓡ	Ⓡ	Ⓡ	
			3020R-025PM-6D	0.118	3.0		0.010	0.091	0.787	0.169	6°	Ⓡ	Ⓡ	Ⓡ	
	1-edge		GDMS 2020N-020PM	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	-	○	●	●	
			3020N-025PM	0.118	3.0		0.010	0.091	0.787	0.169	-	○	●	●	
			4020N-030PM	0.158	4.0		0.012	0.130	0.787	0.169	-	○	●	●	
	1-edge		GDMS 2020R-020PM-6D	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	6°	Ⓡ	Ⓡ	Ⓡ	
			3020R-025PM-6D	0.118	3.0		0.010	0.091	0.787	0.169	6°	Ⓡ	Ⓡ	Ⓡ	
			4020R-030PM-6D	0.158	4.0		0.012	0.130	0.787	0.169	6°	Ⓡ	Ⓡ	Ⓡ	
Grooving & Traversing	High feed 2-edge		GDM 2020N-020PH	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	-	○	●	●	
			3020N-030PH	0.118	3.0		0.012	0.091	0.787	0.169	-	○	●	●	
			4020N-030PH	0.157	4.0		0.012	0.130	0.787	0.169	-	○	●	●	
	High feed 1-edge		GDMS 2020N-020PH	0.079	2.0	±0.0012	0.008	0.059	0.787	0.169	-	○	●	●	
			3020N-030PH	0.118	3.0		0.012	0.091	0.787	0.169	-	○	●	●	
			4020N-030PH	0.157	4.0		0.012	0.130	0.787	0.169	-	○	●	●	

Using PM/PF Chipbreaker (designed for cut-off) for grooving will not create a flat bottom (See Fig.)

Recommended Cutting Conditions ➔ H15

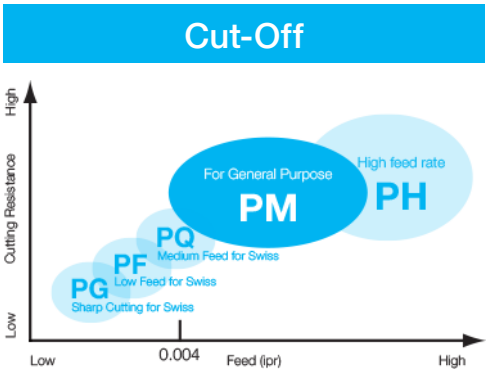
Insert Identification

① Series	② Tolerance	③ No. of Corners	④ Edge Width	⑤ Insert Length	⑥ Hand of Tool	⑦ Corner-R (rε)	⑧ Chipbreaker	⑨ Lead Angle
G D	M	S	30	20	R	020	GM	6D
	M : M-Class **G** : G-Class	**No Indication** : 2-edge **S** : 3-edge	**20** : 2mm **30** : 3mm **40** : 4mm	**20** : 20mm	**R** : Right-hand **L** : Left-hand **N** : Neutral	**020** : 0.2mm **040** : 0.4mm **150R** : 1.5mm (Full-R)	**GM**: Grooving & Traversing **GL**: Low Feed **CM**: Copying **PH** : High Feed **PQ** : Cut-Off for Swiss **PF** : Cut-Off for Swiss **PM** : Cut-Off **NB** : Without Chipbreaker	**No Idication** : 0° **6D** : 6°

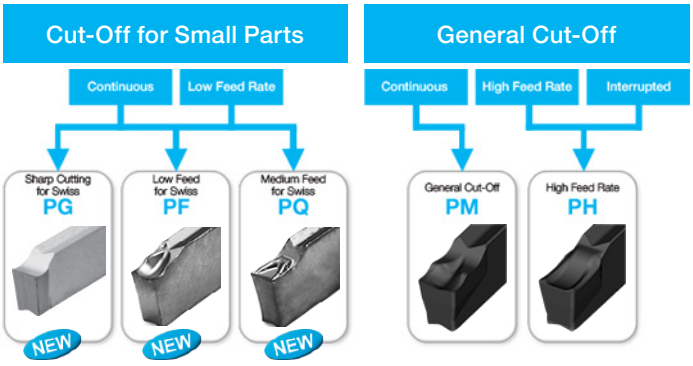
Inserts are sold in 10 piece boxes

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Application Map



Chipbreaker Selection



Recommended Cutting Conditions (PF/PQ/PG Chipbreakers)

Workpiece Material	Recommended Insert Grade (Vc sfm)			Feed Rate (ipr)						Remarks
				PF(rε=0.0012)			PF (rε=0.0059)			
	MEGACOAT Nano	MEGACOAT		Edge Width			Edge Width			
	PR1535	PR1225	PR1225	0.051"~0.059" (1.3mm~1.5mm)	0.079" (2.0mm)	0.098"~0.118" (2.5mm~3.0mm)	0.059" (1.5mm)	0.079" (2.0mm)	0.098"~0.118" (2.5mm~3.0mm)	
Carbon Steel (SxxC, etc.)	☆ 225~500	★ 225~500	☆ 225~600	0.0004~0.0016	0.0008~0.0024	0.0008~0.0031	0.0004~0.0020	0.0012~0.0031	0.0016~0.0039	Wet
Alloy Steel (SCM, etc.)	☆ 225~500	★ 225~500	☆ 225~600	0.0004~0.0016	0.0008~0.0024	0.0008~0.0031	0.0004~0.0020	0.0012~0.0031	0.0016~0.0039	
Stainless Steel (SUS304, etc.)	★ 200~400	☆ 200~400	☆ 200~500	0.0004~0.0012	0.0004~0.0016	0.0004~0.0020	0.0004~0.0016	0.0012~0.0028	0.0016~0.0031	
Cast Iron (FC/FCD, etc.)	-	-	★ 250~650	0.0004~0.0020	0.0008~0.0028	0.0012~0.0031	0.0004~0.0024	0.0012~0.0035	0.0016~0.0039	

★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (PF/PQ/PG Chipbreakers)

Workpiece Material	Recommended Insert Grade								Remarks
					PQ		PG		
	MEGACOAT Nano	MEGACOAT		Carbide	Edge Width		Edge Width		
	PR1535	PR1225	PR1225	GW15	0.079" (2.0mm)	0.098"~0.118" (2.5mm~3.0mm)	0.079" (2.0mm)	0.098"~0.118" (2.5mm~3.0mm)	
Carbon Steel (SxxC, etc.)	☆ 225~500	★ 225~500	☆ 225~600	-	0.0012~0.0039	0.0016~0.0047	0.0004~0.0016	0.0004~0.0020	Wet
Alloy Steel (SCM, etc.)	☆ 225~500	★ 225~500	☆ 225~600	-	0.0012~0.0039	0.0016~0.0047	0.0004~0.0016	0.0004~0.0020	
Stainless Steel (SUS304, etc.)	★ 200~400	☆ 200~400	☆ 200~500	-	0.0008~0.0028	0.0008~0.0031	0.0004~0.0012	0.0004~0.0016	
Cast Iron (FC/FCD, etc.)	-	-	★ 250~650	☆ 150~325	0.0016~0.0039	0.0016~0.0047	0.0004~0.0016	0.0004~0.0020	
Aluminum		-	-	★ 650~1475	-	-	0.0004~0.0020	0.0004~0.0024	
Brass		-	-	★ 325~650	-	-	0.0004~0.0028	0.0004~0.0031	

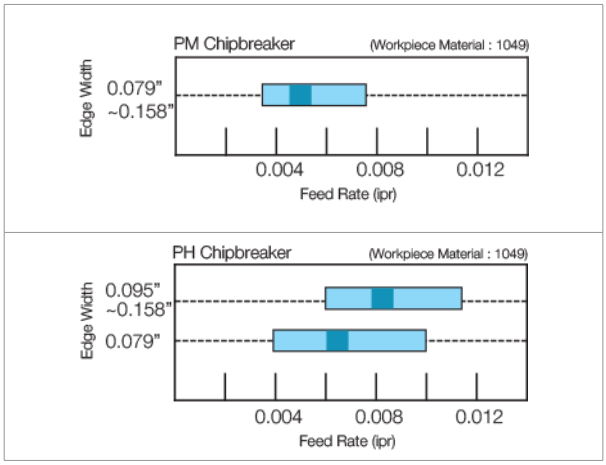
★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (PM/PH Chipbreakers)

Workpiece Material	Recommended Insert Grade (Vc sfm)			Feed Rate (ipr)			Remarks
				PM	PH		
	MEGACOAT Nano	MEGACOAT		Edge Width	Edge Width		
	PR1535	PR1215	PR1225	0.079"~0.158" (2mm~4mm)	0.079" (2mm)	0.095"~0.158" (3mm~4mm)	
Carbon Steel (SxxC, etc.)	☆ 225~500	★ 250~650	☆ 325~650	0.0031~0.0071	0.0039~0.0098	0.0059~0.0110	Wet
Alloy Steel (SCM, etc.)	☆ 225~500	★ 225~600	☆ 250~600	0.0031~0.0071	0.0039~0.0098	0.0059~0.0110	
Stainless Steel (SUS304, etc.)	★ 200~400	★ 200~500	☆ 200~500	0.0024~0.0047	0.0020~0.0047	0.0031~0.0059	
Cast Iron (FC/FCD, etc.)	-	-	★ 325~650	0.0031~0.0071	0.0039~0.0098	0.0059~0.0110	

★ : 1st Recommendation ☆ : 2nd Recommendation

Feed Examples



■ : Indicates the center value of feed (f)

CAUTION During Cut-Off

1) Be sure to perform wet processing. Apply enough coolant to the cutting edge

2) Keep spindle revolution constant during processing to achieve longer tool life

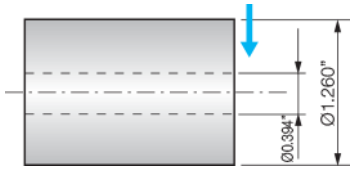
3) Cut off as close to the chuck as possible

4) Reduce feed rate by 30-50% when closing in on the center of the workpiece to prevent impact

Case Studies

1045 (Cut-Off)

- Sleeve
- Vc=100 m/min
- f=0.12 mm/rev
- WET
- GDM3020N-025PM(PR1225)
- KGDL2020K-3T20



PM Chipbreaker (PR1225)	250 pcs/edge capable of further machining
Competitor A (PVD Coated Carbide)	250 pcs/edge with chipping

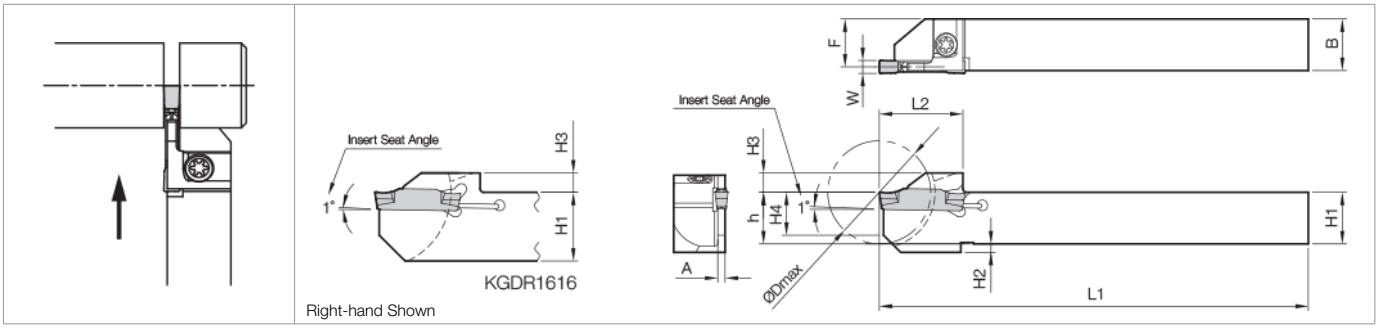
Results:

- KGD-type and PM chipbreaker (PR1225) showed good edge condition after maching same number of workpieces as Comp. A.
- Available for further machining. (Comp. A caused chipping)

User Evaluation

KGD (Swiss)

Width : 0.059"~0.157" (1.3mm~4.0mm)



Toolholder Dimensions (Inch Size)

Part Number	Stock		Cut-Off Dia.	Dimensions (inch)									Insert Width W (inch)		Spare Parts	
	R	L	ØDmax	H1=h	H2	H3	H4	B	L1	L2	F	A	MIN	MAX	Clamp Screw	Wrench
KGD℞ 6-1.5JX	●	●	0.787	0.375	0.098	0.177	0.315	0.375	4.75	0.709	0.351	0.047	-	0.059	SB-40120TR	LTW-15S
8-1.5JX	●	●	0.944	0.500	0.051	0.177	0.394	0.500	4.75	0.768	0.476	0.047	-	0.059		
KGD℞ 6-2JX	●	●	0.787	0.375	0.098	0.177	0.315	0.375	4.75	0.709	0.342	0.067	0.078	0.118	SB-40120TR	LTW-15S
8-2JX	●	●	0.944	0.500	0.051	0.177	0.394	0.500	4.75	0.768	0.467	0.067	0.078	0.118		
10-2JX	●	●	1.259	0.625	-	0.177	0.394	0.625	4.75	0.965	0.592	0.067	0.078	0.118		
KGD℞ 6-2.4JX	●	●	0.787	0.375	0.098	0.177	0.315	0.375	4.75	0.709	0.336	0.079	0.094	0.118	SB-40120TR	LTW-15S
8-2.4JX	●	●	0.944	0.500	0.051	0.177	0.394	0.500	4.75	0.768	0.461	0.079	0.094	0.118		
10-2.4JX	●	●	1.259	0.625	-	0.177	0.394	0.625	4.75	0.965	0.586	0.079	0.094	0.118		
KGD℞ 8-3JX	●	●	0.944	0.500	0.051	0.177	0.394	0.500	4.75	0.768	0.453	0.094	0.118	0.118	SB-40120TR	LTW-15S
10-3JX	●	●	1.259	0.625	-	0.177	0.394	0.625	4.75	0.965	0.578	0.094	0.118	0.157		
KGD℞ 10-3D38JX	●	●	1.496	0.625	-	0.236	0.394	0.625	4.75	1.142	0.578	0.094	0.118	0.157	SE-50125TR	LTW-20
12-3D42JX	●	●	1.653	0.750	-	0.236	0.551	0.750	4.75	1.220	0.703	0.094	0.118	0.157		
43-3D42JX	●	●	1.653	0.750	-	0.236	0.551	0.500	4.75	1.220	0.453	0.094	0.118	0.157		

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➡ **H12~** ➡ **H13**

Toolholder Dimensions (Metric Size)

Part Number	Stock		Cut-Off Dia.	Dimensions (mm)									Insert Width W (mm)		Spare Parts	
	R	L	ØDmax	H1=h	H2	H3	H4	B	L1	L2	F	A	MIN	MAX	Clamp Screw	Wrench
KGD℞ 1010JX-1.3	○	○	20	10	2	4.5	8	10	120	18.0	9.50	1.0	1.3	1.5	SB-40120TR	LTW-15S
1212JX-1.3	○	○	24	12	2	4.5	10	12	120	19.5	11.50	1.0	1.3	1.5		
KGD℞ 1010JX-1.5	○	○	20	10	2	4.5	8	10	120	18.0	9.40	1.2	-	1.5	SB-40120TR	LTW-15S
1212JX-1.5	○	○	24	12	2	4.5	10	12	120	19.5	11.40	1.2	-	1.5		
KGD℞ 1010JX-2	○	○	20	10	2	4.5	8	10	120	18.0	9.15	1.7	2.0	3.0	SB-40120TR	LTW-15S
1212JX-2	○	○	24	12	2	4.5	10	12	120	19.5	11.15	1.7	2.0	3.0		
1616JX-2	○	●	32	16	-	4.5	10	16	120	24.5	15.15	1.7	2.0	3.0		
KGD℞ 1010JX-2.4	○	○	20	10	2	4.5	8	10	120	18.0	9.00	2.0	2.4	3.0	SB-40120TR	LTW-15S
1212JX-2.4	○	○	24	12	2	4.5	10	12	120	19.5	11.00	2.0	2.4	3.0		
1616JX-2.4	○	○	32	16	-	4.5	10	16	120	24.5	15.00	2.0	2.4	3.0		
KGD℞ 1212JX-3	○	○	24	12	2	4.5	10	12	120	19.5	10.80	2.4	3.0	3.0	SB-40120TR	LTW-15S
1616JX-3	○	○	32	16	-	4.5	10	16	120	24.5	14.80	2.4	3.0	4.0		
KGD℞ 1616JX-3D38	○	○	38	16	-	6.0	10	16	120	29.0	14.80	2.4	3.0	4.0	SE-50125TR	LTW-20
2020JX-3D42	○	○	42	20	-	6.0	14	20	120	31.0	18.80	2.4	3.0	4.0		
2012JX-3D42	○	○	42	20	-	6.0	14	12	120	31.0	10.80	2.4	3.0	4.0		
KGD℞ 1212F-1.3	○	○	24	12	2	4.5	10	12	85	19.5	11.50	1.0	1.3	1.5	SB-40120TR	LTW-15S
1212F-1.5	○	○	24	12	2	4.5	10	12	85	19.5	11.40	1.2	-	1.5	SB-40120TR	LTW-15S
1212F-2	○	○	24	12	2	4.5	10	12	85	19.5	11.15	1.7	2.0	3.0	SB-40120TR	LTW-15S
1212F-2.4	○	○	24	12	2	4.5	10	12	85	19.5	11.00	2.0	2.4	3.0	SB-40120TR	LTW-15S

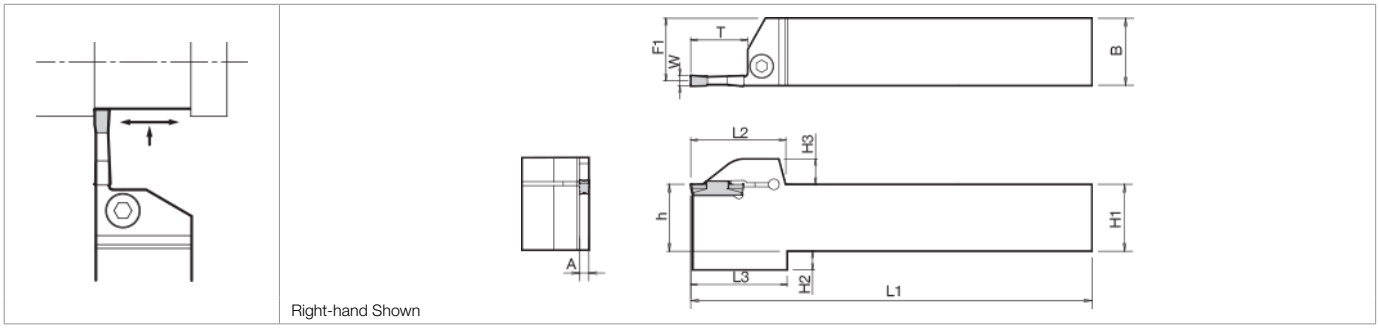
Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➡ **H12~** ➡ **H13**

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

KGD (Integral-Style)

Width : 0.079"~0.236" (2.0mm~5.0mm)



Right-hand Shown

Toolholder Dimensions (Inch Size)

Part Number	Stock R	Stock L	Cut-Off Dia. ØDmax	Dimensions (inch) H1=h	H2	H3	B	L1	L2	L3	F1	A	T*	Insert Width W (inch) MIN	MAX	Spare Parts Clamp Bolt	Spare Parts Wrench
KGDR/L 12-2T17	●	●	1.339	0.75	-	0.374	0.75	4.92	1.28	-	0.71	0.067	0.669 (17mm)	0.079	0.118	HH5X16	LTW-25
16-2T17	●	●	1.339	1.00	-	0.374	1.00	5.90	1.28	-	0.96	0.067		0.079	0.118	HH5X25	
KGDR/L 12-3T10	●	●	0.787	0.75	-	0.374	0.75	4.92	1.20	-	0.70	0.094	0.393 (10mm)	0.118	0.158	HH5X16	
16-3T10	●	●	0.787	1.00	-	0.374	1.00	5.90	1.20	-	0.95	0.094		0.118	0.158	HH5X25	
KGDR/L 12-3T20	●	●	1.575	0.75	-	0.374	0.75	4.92	1.35	-	0.70	0.094	0.787 (20mm)	0.118	0.158	HH5X16	
16-3T20	●	●	1.575	1.00	-	0.374	1.00	5.90	1.39	-	0.95	0.094		0.118	0.158	HH5X25	
KGDR/L 12-4T10	●	●	0.787	0.75	-	0.374	0.75	4.92	1.20	-	0.68	0.133	0.393 (10mm)	0.158	0.197	HH5X16	
16-4T10	●	●	0.787	1.00	-	0.374	1.00	5.90	1.20	-	0.93	0.133		0.158	0.197	HH5X25	
KGDR/L 12-4T20	●	●	1.575	0.75	-	0.374	0.75	4.92	1.35	-	0.68	0.133	0.787 (20mm)	0.158	0.197	HH5X16	
16-4T20	●	●	1.575	1.00	-	0.374	1.00	5.90	1.39	-	0.93	0.133		0.158	0.197	HH5X25	
KGDR/L 12-5T10	●	●	0.787	0.75	-	0.374	0.75	4.92	1.20	-	0.66	0.173	0.393 (10mm	0.197	0.236	HH5X16	
16-5T10	●	●	0.787	1.00	-	0.374	1.00	5.90	1.20	-	0.91	0.173		0.197	0.236	HH5X25	
KGDR/L 12-5T17	●	●	1.339	0.75	-	0.374	0.75	4.92	1.47	-	0.66	0.173	0.669 (17mm)	0.197	0.236	HH5X16	
16-5T17	●	●	1.339	1.00	-	0.374	1.00	5.90	1.47	-	0.91	0.173		0.197	0.236	HH5X25	

* T Dimension shows the available grooving depth (If the T Dimension is 0.787" or more, the maximum depth of groove made by the 2-edge insert will be 0.709").
• Recommended tightening torque of screw : 6.5N·m (Groove width 2~6mm)

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➡ **H12~** ➡ **H13**

Toolholder Dimensions (Metric Size)

Part Number	Stock R	Stock L	Cut-Off Dia. ØDmax	Dimensions (mm) H1=h	H2	H3	B	L1	L2	L3	F1	A	T*	Insert Width W (mm) MIN	MAX	Spare Parts Clamp Bolt	Spare Parts Wrench
KGDR/L 1616H-2T06	○	○	12	16	4.0	9.5	16	100	27.7	28.0	15.2	1.7	6	2.0	3.0	HH5X16	LW-4
2020K-2T06	○	○	12	20	-	9.5	20	125	28.0	-	19.2	1.7	6	2.0	3.0		
KGDR/L 1616H-2T10	○	○	20	16	4.0	9.5	16	100	30.2	30.5	15.2	1.7	10	2.0	3.0		
2020K-2T10	○	○	20	20	-	9.5	20	125	30.5	-	19.2	1.7	10	2.0	3.0		
KGDR/L 1616H-2T17	○	●	34	16	4.0	9.5	16	100	31.2	31.5	15.2	1.7	17	2.0	3.0		
2012K-2T17	○	○	34	20	-	9.5	12	125	32.5	-	11.2	1.7	17	2.0	3.0		
2020K-2T17	○	○	34	20	-	9.5	20	125	32.5	-	19.2	1.7	17	2.0	3.0		
KGDR/L 2012K-2.4T17	○	○	34	20	-	9.5	12	125	32.5	-	11.0	2.0	17	2.4	3.0	HH5X16	LW-4
2020K-2.4T17	○	○	34	20	-	9.5	20	125	32.5	-	19.0	2.0	17	2.4	3.0		
KGDR/L 1616H-3T06	○	○	12	16	4.0	9.5	16	100	27.7	28.0	14.8	2.4	6	3.0	4.0	HH5X16	LW-4
2020K-3T06	○	○	12	20	-	9.5	20	125	28.0	-	18.8	2.4	6	3.0	4.0		
KGDR/L 1616H-3T10	○	○	20	16	4.0	9.5	16	100	30.2	30.5	14.8	2.4	10	3.0	4.0		
2020K-3T10	○	○	20	20	-	9.5	20	125	30.5	-	18.8	2.4	10	3.0	4.0		
KGDR/L 1616H-3T20	○	○	40	16	4.0	9.5	16	100	34.2	34.5	14.8	2.4	20	3.0	4.0		
2012K-3T20	○	○	40	20	-	9.5	12	125	34.5	-	10.8	2.4	20	3.0	4.0		
2020K-3T20	○	○	40	20	-	9.5	20	125	34.5	-	18.8	2.4	20	3.0	4.0		
KGDR/L 2020K-4T10	○	○	20	20	-	9.5	20	125	30.5	-	18.3	3.4	10	4.0	5.0	HH5X16	LW-4
KGDR/L 2020K-4T20	○	○	20	20	-	9.5	20	125	34.5	-	18.3	3.4	20	4.0	5.0		

* T Dimension shows the available grooving depth (If the T Dimension is 20mm or more, the maximum depth of groove made by the 2-edge insert will be 18mm).
• Recommended tightening torque of screw : 6.5N·m (Groove width 2~5mm)

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➡ **H12~** ➡ **H13**

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

GMM / GMN / GMR/L

Classification of Usage
- ● : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

		Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide
P	Carbon Steel / Alloy Steel	○	◔	●	◔	●	
M	Stainless Steel		◔	●	◔	●	
K	Cast Iron						●
N	Non-ferrous Metals						●

Insert (Right-handed Insert Shown)	Part Number	W inch	W mm	rε	M	L	H	Angle (°) θ	TN90	CR9025	PR915	PR930	PR1115	KW10	Ref. Page for Toolholder
 Deep Grooving / Cut-Off Sharp Cutting Oriented	GMM 1520-MT	0.059	1.5	0 / 0.05	1.2	20	4.3	-			●	●		●	
	2020-MT	0.079	2.0	0 / 0.05	1.5	20	4.3	-			●	●		○	
	2520-MT	0.098	2.5	0 / 0.05	1.9	20	4.3	-		○	○	●		○	
	3020-MT	0.118	3.0	0 / 0.05	2.3	20	4.3	-		○	●	●		○	
 Cut-Off Sharp Cutting Oriented with Lead Angle	GMM 1520R/L-MT-15D	0.059	1.5	0 / 0.05	1.2	20	4.3	15°			Ⓡ	●		Ⓡ	
	2020R/L-MT-15D	0.079	2.0	0 / 0.05	1.5	20	4.3	15°		○	Ⓡ	●		○	
	2520R/L-MT-15D	0.098	2.5	0 / 0.05	1.9	20	4.3	15°		○	Ⓡ	●		○	
	3020R/L-MT-15D	0.118	3.0	0 / 0.05	2.3	20	4.3	15°		●	Ⓡ	●		Ⓛ	
 Deep Grooving / Cut-Off Sharp Cutting Oriented Without Chipbreaker	GMM 1520-NB	0.059	1.5	0 / 0.05	1.2	20	4.3	-				○		○	
	2020-NB	0.079	2.0	0 / 0.05	1.5	20	4.3	-		○		○		○	
	2520-NB	0.098	2.5	0 / 0.05	1.9	20	4.3	-		○		○		○	
	3020-NB	0.118	3.0	0 / 0.05	2.3	20	4.3	-		○		○		○	
 Deep Grooving / Cut-Off Stability Oriented	GMM 2020-TK	0.079	2.0	0.20	1.5	20	4.3	-			○	●		○	
	2520-TK	0.098	2.5	0.20	1.9	20	4.3	-		○	○	○		○	
	3020-TK	0.118	3.0	0.25	2.3	20	4.3	-		○	●	●		○	
 Cut-Off Stability Oriented With Lead Angle	GMM 2020R/L-TK-8D	0.079	2.0	0.20	1.5	20	4.3	8°			Ⓡ	Ⓡ		Ⓡ	
	2520R/L-TK-8D	0.098	2.5	0.20	1.9	20	4.3	8°		Ⓡ	Ⓡ	Ⓡ		Ⓡ	
	3020R/L-TK-8D	0.118	3.0	0.25	2.3	20	4.3	8°			Ⓡ	Ⓡ		Ⓡ	
 Cut-Off / High Feed 2-Edge	GMM 2020-TMR	0.079	2.0	0.20	20.0	4.3	1.5	-					●		➔ H20
	2520-TMR	0.098	2.5	0.20	20.0	4.3	1.9	-					●		➔ H21
	3020-TMR	0.118	3.0	0.25	20.0	4.3	2.3	-					●		
 Cut-Off / High Feed 2-Edge / Lead Angle	GMM 2020R/L-TMR-6D	0.079	2.0	0.20	20.0	4.3	1.5	6°					Ⓡ		
	2520R/L-TMR-6D	0.098	2.5	0.20	20.0	4.3	1.9	6°					Ⓡ		
	3020R/L-TMR-6D	0.118	3.0	0.25	20.0	4.3	2.3	6°					Ⓡ		
 Cut-Off Stability Oriented 1-Edge	GMN 2-TK	0.079	2.0	0.20	1.5	20	4.3	-			○	○		○	
	3-TK	0.118	3.0	0.25	2.3	20	4.3	-		○	○	○		○	
	4-TK	0.158	4.0	0.30	3.3	20	4.3	-		○	●	○		○	
 Cut-Off Stability Oriented 1-Edge with Lead Angle	GMR 2-TK-8D	0.079	2.0	0.20	1.5	20	4.3	8°			○	○		○	
	3-TK-8D	0.118	3.0	0.25	2.3	20	4.3	8°		○	○	○		○	
	4-TK-8D	0.158	4.0	0.30	3.3	20	4.3	8°			○	○		○	
 Deep Grooving / Cut-Off 1-Edge	GMN 2.2	0.087	2.2	0.17	1.8	20	4.3	-	○	●		○		●	
	3	0.118	3.0	0.20	2.3	20	4.3	-	○	●		●		●	
	4	0.158	4.0	0.25	3.3	20	4.3	-	○			●		●	
	5	0.197	5.0	0.80	4.2	20	4.3	-	○	○		○		○	
	6	0.236	6.0	0.80	5.2	20	4.3	-	○	○		○		○	
 Cut-Off Sharp Cutting Oriented 1-Edge with Lead Angle	GMR 2.2-8D	0.087	2.2	0.17	1.8	20	4.3	8°	Ⓡ	Ⓡ		Ⓡ		●	
	2.2-15D	0.087	2.2	0.00	1.8	20	4.3	15°	Ⓡ	○		○		○	
	3-4D	0.118	3.0	0.20	2.3	20	4.3	4°	Ⓡ	●		○		Ⓡ	
	4-4D	0.158	4.0	0.25	3.3	20	4.3	4°		○		Ⓡ			

Inserts are sold in 10 piece boxes

● : U.S. Stock Ⓡ : U.S. Stock (R-hand Only) Ⓛ : U.S. Stock (L-hand Only)
○ : World Express (Shipping: 7-10 Business Days) Ⓡ : World Express (R-hand Only) Ⓛ : World Express (L-hand Only)

Edge Prep. and Chipbreakers (CERACUT Plunge & Turn)

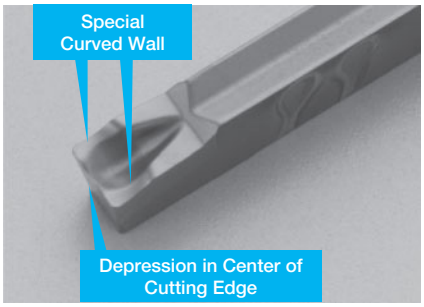
Name	**MT** Chipbreaker		**TK** Chipbreaker		**TMR** Chipbreaker	Without Chipbreaker **(NB)**	
Edge Preparation	Chamfered + Honed	Chamfered + Honed	Chamfered + Honed	Sharp Edge	Chamfered + Honed	Honed Cutting Edge	Sharp Edge
	Corner-R 0.002" 0.05mm	Sharp Edge	Corner-R 0.008"~0.012" 0.20~0.30mm	Corner-R 0.008"~0.012" 0.20~0.30mm	Corner-R 0.008" 0.20mm	Corner-R 0.002" 0.05mm	Sharp Edge
							
	CR9025 / PR915	PR930 / KW10	CR9025 / PR915	PR930 / KW10	PR1115	CR9025	PR930 / KW10

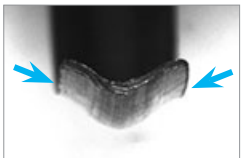
• Sharp Edge can reduce cutting resistance by 40%, compared with chamfered edge

Name	Advantages
GMM-MT	Specific chipbreaker for cut-off operations requiring sharp cutting performance Minimizes the boss
GMM-NB	Cutting edge is flat with no chipbreaker. Good performance for brass, etc.
GMM-TK	Stable design with chipbreaker for cut-off. Large corner-R 2-edge for economical performance
GMN-TK	Same chipbreaker geometry as GMM-TK 1-edge. Wide application range.
GMN (Std.)	Mainly for deep grooving, but available for groove widening and turning due to projection near side cutting edge. 1-edge and wide application range. Available for cut-off applications.

TMR Chipbreaker

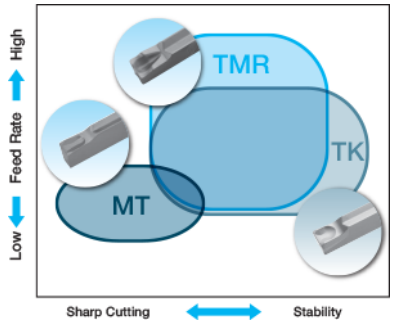
Chipbreaker Advantages





Chip Width < Grooving Width

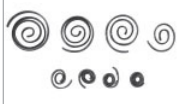
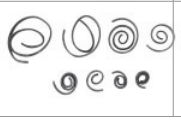
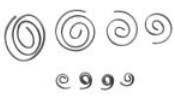
GMM Chipbreaker Map

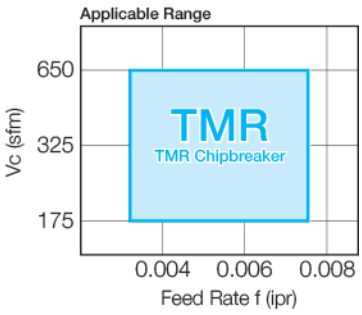


The TMR Chipbreaker Provides Stable Chip Control at High Feed Rates

Good chip control even when cutting speed (spindle revolution) is increased

(Cutting Conditions : 15CrMo4, Ø30, Constant Spindle Revolution)

Part Number	n=1060min^{-1}(Vc=325sfm)		n=2123min^{-1}(Vc=650sfm)	
	f=0.0008ipr	f=0.0047ipr	f=0.0008ipr	f=0.0047ipr
GMM 3020-TMR (Neutral)				
GMM 3020R-TMR-6D (Right-Hand)				

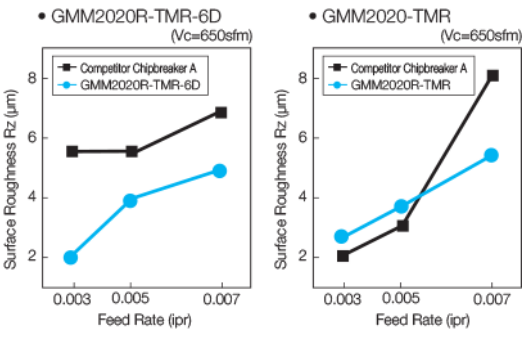


Recommended Cutting Conditions

Workpiece Material	Vc (sfm)	Feed Rate (ipr)
Carbon Steel	200~650	0.003~0.007
Alloy Steel	200~500	
Stainless Steel	175~450	

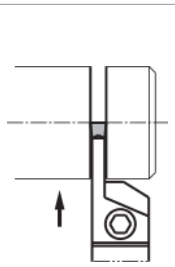
Workpiece Surface Roughness

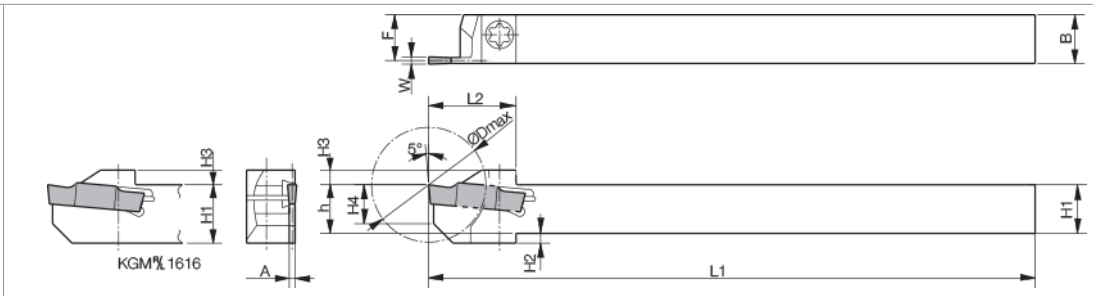
TMR Chipbreaker provides good surface roughness on the workpiece end face at high feed rate ranges.



KGM (Swiss)

Width : 1.5mm~4.0mm





Right-hand Shown

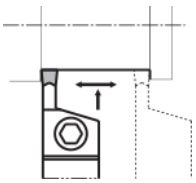
Toolholder Dimensions

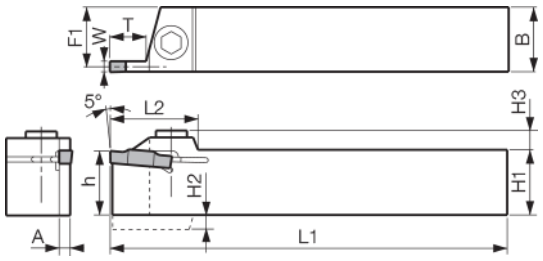
Part Number	Stock R	Stock L	Unit	Cut-Off Dia. ØDmax	Dimensions H1=h	H2	H3	H4	B	L1	L2	F	A	Insert Width W (mm) MIN	MAX	Spare Parts Clamp Screw	Spare Parts Wrench
KGM 6-2-5	●	●	inch	0.787	0.375	0.079	0.117	0.316	0.375	5.000	0.750	0.342	0.067	0.079	0.118	SE-40120TR	LTW-15S
8-2-6	●	●		0.984	0.500	0.051	0.138	0.394	0.500	6.000	0.830	0.467	0.067	0.079	0.118		
KGM 1010JX-1.5	○	○	mm	20	10	2	3	8	10	120	18.0	9.40	1.2	1.5	2.0	SE-40120TR	LTW-15S
1212JX-1.5	○	○		25	12	2	4	10	12	120	20.5	11.40	1.2	1.5	2.0		
KGM 1010JX-2	○	○		20	10	2	3	8	10	120	18.0	9.15	1.7	2.0	3.0	SE-40120TR	LTW-15S
1212JX-2	○	○		25	12	2	4	10	12	120	19.0	11.15	1.7	2.0	3.0		
1616JX-2	●	●		32	16	-	4	9	16	120	24.5	15.15	1.7	2.0	3.0	SE-50125TR	LTW-20
KGM 1010JX-2.5	○	○		20	10	2	3	8	10	120	18.0	9.00	2.0	2.4	3.0	SE-40120TR	LTW-15S
1212JX-2.5	○	○		25	12	2	4	10	12	120	20.5	11.00	2.0	2.4	3.0		
1616JX-2.5	○	●		32	16	-	4	9	16	120	25.5	15.00	2.0	2.4	3.0	SE-50125TR	LTW-20
KGM 1616JX-3	○	○		32	16	-	4	9	16	120	25.5	14.80	2.4	3.0	4.0	SE-50125TR	LTW-20
KGM 1212F-1.5-85	○			25	12	2	4	10	12	85	19.0	11.40	1.2	1.5	2.0	SE-40120TR	LTW-15S
1212F-2-85	○			25	12	2	4	10	12	85	19.0	11.15	1.7	2.0	3.0		
1212F-2.5-85	○			25	12	2	4	10	12	85	19.0	11.00	2.0	2.4	3.0		

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➔ **H18**

KGM

Width : 3.0~6.0mm





Right-hand Shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Dimensions H1=h	H2	H3	B	L1	L2	F1	A	T	Insert Width W (mm) MIN	MAX	Spare Parts Clamp Screw	Spare Parts Clamp Screw	Spare Parts Wrench	Spare Parts Wrench
KGM 12-3	●		inch	0.750	-	0.217	0.750	5.000	1.070	0.702	0.094	0.354	3mm	4mm	-	HH5X16	-	LW-4
16-3	●			1.000	-	0.217	1.000	6.000	1.070	0.953	0.094	0.354	3mm	4mm	-	HH5X25	-	LW-4
KGM 1212H-3	○	○	mm	12	4	6	12	100	27	10.8	2.4	9	3.0	3.0	SB-5TR	-	LTW-20	-
1616H-3	●	○		16	4	7	16	100	27	14.8	2.4	9	3.0	4.0	-	HH5X16	-	LW-4
2020K-3	○	○		20	-	7	20	125	27	18.8	2.4	9	3.0	4.0				
KGM 2020K-4	○	○		20	-	7	20	125	27	18.3	3.4	10	4.0	5.0	-	HH5X16	-	LW-4
KGM 2020K-5	○	○		20	-	7	20	125	27	17.8	4.4	10	5.0	6.0	-	HH5X16	-	LW-4

- Dimension T: Available grooving depth
- 4.0mm width insert can be installed in KGM 1212H-3, but is not recommended due to the toolholder's rigidity

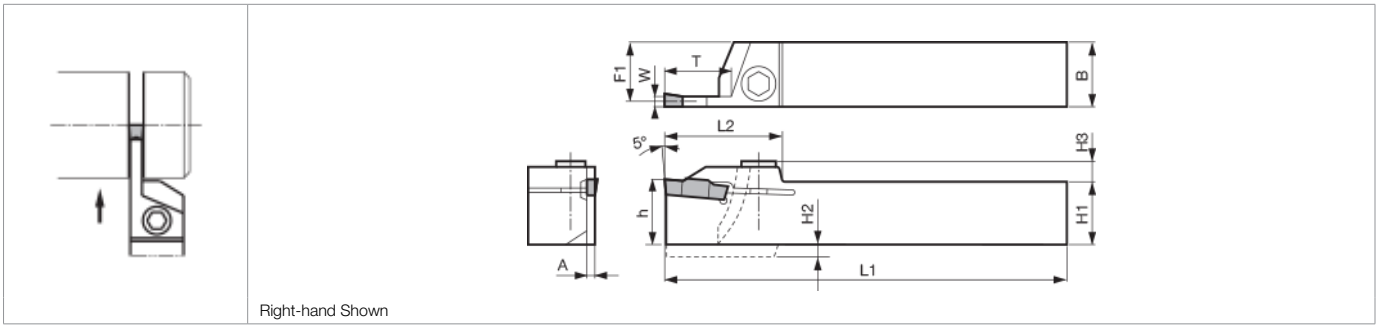
Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➔ **H18**

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

KGM-T

Width : 2.0mm~5.0mm



Right-hand Shown

Toolholder Dimensions

Part Number	Stock		Dimensions (mm)									Insert Width W (mm)		Spare Parts			
														Clamp Screw		Wrench	Wrench
	R	L	H1=h	H2	H3	B	L1	L2	F1	A	T	MIN	MAX				
KGM□ 2012K-2T17	○	○	20	-	7.0	12	125	33	11.15	1.7	17	2.0	3.0	SB-5TR	-	LTW-20	-
2020K-2T17	○	○	20	-	7.0	20	125	33	19.15	1.7	17	2.0	3.0	-	HH5X16	-	LW-4
KGM□ 1616H-3T20	●	●	16	4	7.0	16	100	36	14.80	2.4	20	3.0	4.0	-	HH5X16	-	LW-4
2012K-3T20	○	○	20	-	7.0	12	125	36	10.80	2.4	20	3.0	4.0	SB-5TR	-	LTW-20	-
2020K-3T20	○	○	20	-	7.0	20	125	36	18.80	2.4	20	3.0	4.0	-	HH5X16	-	LW-4
KGM□ 2020K-4T20	○	○	20	-	7.5	20	125	36	18.30	3.4	20	4.0	5.0	-	HH5X16	-	LW-4

- Dimension T shows the distance from the toolholder to the cutting edge. Refer to the table (**H20**) for the relationship between the available grooving depth and the cutting diameter.
- When using GMG/GMM (2-edge inserts), set the grooving depth under 15mm

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➡ **H18**

Applicable Inserts

Application	Grooving / Traversing	Grooving / Traversing	Grooving	Full-R / Copying	Cut-Off / Deep Grooving	Cut-Off / Deep Grooving	Cut-Off / Deep Grooving	Cut-Off / Deep Grooving	Cut-Off / Deep Grooving
Ref. Page	➡ G26	➡ G26	➡ G26	➡ G26	➡ H18	➡ H18	➡ H18	➡ H18	➡ H18
Shape / Toolholder	MW	MS	MG		MT	NB	TK / TMR	TK	
KGM□...1.5	-	-	-	-	GMM1520...MT GMM2020...MT GMM1520□...MT GMM2020□...MT	GMM1520...NB GMM2020...NB	GMM2020...TK GMM2020□...TK	GMN2...TK GM□2...TK	-
KGM□...2(T)	GMM2420...MW GMM3020...MW	GMG3020...MS GMM3020...MS	GMG2520...MG GMG3020...MG	GMG3020...R GMM3020...R	GMM2020...MT GMM2520...MT GMM3020...MT GMM2020□...MT GMM2520□...MT GMM3020□...MT	GMM2020...NB GMM2520...NB GMM3020...NB	GMM2020...TK GMM2520...TK GMM3020...TK GMM2020□...TK GMM2520□...TK GMM3020□...TK	GMN2...TK GMN3...TK GM□2...TK GM□3...TK	GMN2 GMN2.2 GMN3 GM□2.2 GM□3
KGM□...2.5	GMM2420...MW GMM3020...MW	GMG3020...MS GMM3020...MS	GMG2520...MG GMG3020...MG	GMG3020...R GMM3020...R	GMM2520...MT GMM3020...MT GMM2520□...MT GMM3020□...MT	GMM2520...NB GMM3020...NB	GMM2520...TK GMM3020...TK GMM2520□...TK GMM3020□...TK	GMN3...TK GM□3...TK	GMN3 GM□3
KGM□...3(T)	GMM3020...MW GMM4020...MW	GMG3020...MS GMM3020...MS GMG4020...MS GMM4020...MS	GMG3020...MG GMG3520...MG GMG4020...MG	GMG3020...R GMM3020...R GMG4020...R GMM4020...R	GMM3020...MT GMM3020□...MT	GMM3020...NB	GMM3020...TK GMM3020□...TK	GMN3...TK GMN4...TK GM□3...TK GM□4...TK	GMN3 GMN4 GM□3 GM□4
KGM□...4(T)	GMM4020...MW GMM5020...MW	GMG4020...MS GMM4020...MS GMG5020...MS GMM5020...MS	GMG4020...MG GMG5020...MG	GMG4020...R GMM4020...R GMG5020...R GMM5020...R	-	-	-	GMN4...TK GM□4...TK	GMN4 GMN5 GM□4
KGM□...5	GMM5020...MW GMM6020...MW	GMG5020...MS GMM5020...MS GMG6020...MS GMM6020...MS	GMG5020...MG GMG6020...MG	GMG5020...R GMM5020...R GMG6020...R GMM6020...R	-	-	-	-	GMN5 GMN6

Recommended Cutting Condtions ➡ **H22**

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

Recommended Cutting Conditions of CERACUT Plunge & Turn (GMM-MT / GMM-TK / GMM-NB)

Workpiece Material	Recommended Grade (Vc sfm)				Width				Remarks
	CVD Coated Carbide	PVD Coated Carbide		Carbide	0.059" (1.5mm)	0.079"~0.098" (2.0mm~2.5mm)	0.118" (3.0mm)	0.158" (4.0mm)	
	CR9025	PR915	PR930	KW10	Feed Rate (ipr)				
Carbon Steel	☆ 250~600	★ 200~500	☆ 200~425	-	0.0004~0.0016	0.0008~0.0059	0.0012~0.0079	0.0032~0.0118	Wet
Alloy Steel	☆ 225~500	★ 200~500	☆ 200~425	-	0.0004~0.0016	0.0008~0.0059	0.0012~0.0079	0.0032~0.0118	
Stainless Steel	☆ 200~450	★ 175~450	☆ 175~400	-	0.0004~0.0012	0.0008~0.0039	0.0012~0.0059	0.0032~0.0098	
Cast Iron	-	-	-	★ 175~325	0.0004~0.0020	0.0020~0.0047	0.0039~0.0098	0.0039~0.0118	
Aluminum	-	-	-	★ 650~1475	0.0004~0.0020	0.0020~0.0039	0.0020~0.0079	0.0020~0.0098	
Brass	-	-	-	★ 325~650	0.0004~0.0020	0.0020~0.0039	0.0020~0.0059	0.0020~0.0079	

• When using PR930, decrease the feed rate by 20%

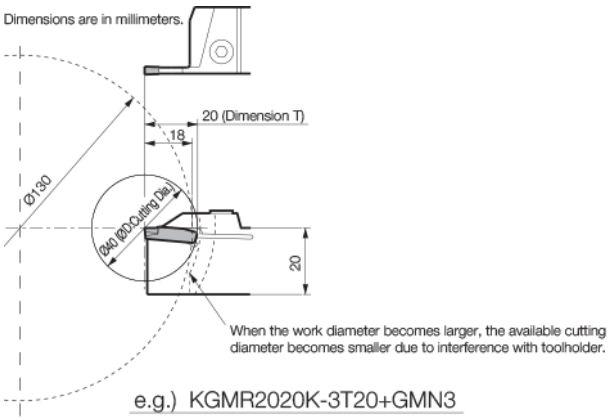
★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions of GMM-TMR (PR1115)

Workpiece Material	Vc (sfm)		Remarks
Carbon Steel	200~650	0.003~0.007	Wet
Alloy Steel	225~500		
Stainless Steel	175~450		

KGM • KGM-T Available Cutting Diameter

There is a limit to available grooving depth depending on the workpiece diameter



KGM Available Cutting Diameter Table

Toolholders		ØD (Cutting Diameter)																
KGM□	0810K-1.5-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32	∞
	1010○-1.5...	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞	
	1212○-1.5...	-	-	-	-	25	26	28	32	36	40	60	100					
	0810K-2-125	-	-	-	-	-	-	-	-	-	-	-	-	10	14	16	32	
	1010○-2...	-	-	-	-	-	-	-	20	25	32	40	60	∞	∞	∞	∞	
	1212○-2...	-	-	-	-	25	26	28	50	∞	∞	∞	∞					
	1616○-2...	32	40	50	60	80	100	∞	∞									
	1010○-2.5...	-	-	-	-	-	-	-	20	25	32	40	60					
	1212○-2.5...	-	-	-	-	25	26	28	32	36	40	60	100					
	1616○-2.5...	32	40	50	60	80	100	∞	∞	∞	∞	∞	∞					
	1616○-3...	32	40	50	60	80	100											
Available Grooving Depth T (mm)		16	15	14	13	12.5	12	11	10	9	8	7	6	5	4	3	2	1

KGM-T Available Cutting Diameter Table (GMN, GM□ When Using 1-edge Insert)

Toolholders		ØD (Cutting Diameter)							
KGM□	2012K-2T17	-	-	-	66	80	130	260	∞
	2020K-2T17								
	1616H-3T20	40	54	70	100	180	∞	∞	
	2012K-3T20	40	90	130	240	∞			
	2020K-3T20								
	2020K-4T20								
Available Grooving Depth T (mm)		20	19	18	17	16	15	14	13

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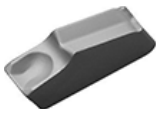
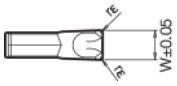
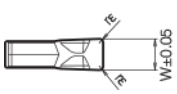
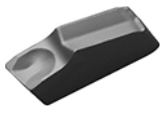
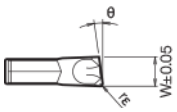
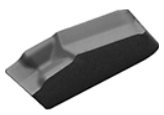
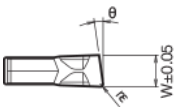
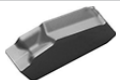
TKN / TKR/L

Classification of Usage								
● : Light Interruption / 1st Choice	P	Carbon Steel / Alloy Steel	○	●		○		Ref. Page for Toolholder
◔ : Light Interruption / 2nd Choice	M	Stainless Steel		◔	●	○		
● : Continuous / 1st Choice	K	Cast Iron					●	
○ : Continuous / 2nd Choice	N	Non-ferrous Metals					●	

Insert (Right-handed Insert Shown)	Part Number	Dimmensions (mm) W inch	W mm	rε	Angle (°) θ	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR660	PVD Coated Carbide PR930	Carbide KW10	Ref. Page for Toolholder
 	TKN 1.6	0.063	1.6	0.15	-	●	●	●	○	○	➔ H24
	2	0.087	2.2	0.20		○	●	●	○	●	
	2.4	0.094	2.4	0.20		●	○	●	○	●	
	3	0.122	3.1	0.25		○	●	●	○	●	
	4	0.161	4.1	0.30		○	●	●	○	●	
 Low Feed 	TKN 1.6-P	0.063	1.6	0.20	-	○	○	○	○	○	
	2-P	0.087	2.2	0.20		○	○	○	○	○	
	3-P	0.122	3.1	0.25		○	●	●	○	○	
 With Lead Angle 	TKR/L 1.6	0.063	1.6	0.15	8°	Ⓡ	Ⓡ	●	Ⓡ	Ⓛ	
	2	0.087	2.2	0.20		Ⓡ	○	Ⓡ	Ⓡ	Ⓡ	
	2.4	0.094	2.4	0.20		Ⓡ	○	●	Ⓡ	Ⓡ	
	3	0.122	3.1	0.25		Ⓡ	●	Ⓡ	○	Ⓡ	
	4	0.161	4.1	0.30		○	Ⓡ	○		○	
 Low Feed / Lead Angle 	TKR/L 1.6-P	0.063	1.6	0.20	8°	Ⓡ	Ⓡ	○	Ⓡ	Ⓡ	
	2-P	0.087	2.2	0.20		Ⓡ	Ⓡ	○	Ⓡ	Ⓡ	
	3-P	0.122	3.1	0.25		Ⓡ	Ⓡ	Ⓡ	Ⓡ	Ⓡ	

Recommended Cutting Condtions ➔ H26

Cut-Off Tools

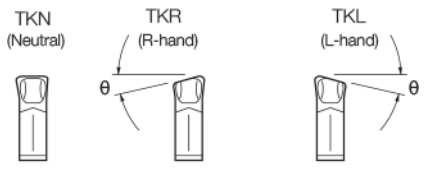
Name	Chipbreaker		Advantages
General Cut-Off	Standard (No Indication)		General cut-off type for feed rates over 0.004ipr Superior chip evacuation
Low Feed Cut-Off	P		Chipbreaker specially designed for low feed machining on automatic lathes, etc. Chips are controlled at feed rates between 0.0012~0.0032ipr

Insert's Edge Shape (CERACUT Cut-Off)

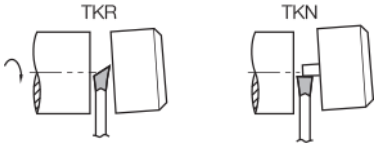
	Chamfered + Honed	Sharp Edge	Honed Cutting Edge
Edge Preparation			
Standard Chipbreaker	TN90 CR9025 / PR660	PR930 / KW10	-
P-Chipbreaker	-	-	TN90 / CR9025 PR660 / PR930 / KW10

• Sharp edge can reduce cutting resistance by 40%, compared with chamfered edge.

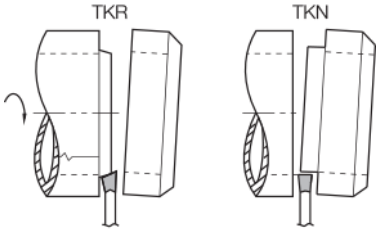
How to Select Chipbreakers



• Angled (θ), insert can reduce burr when cutting off.
• When using a larger lead angle (θ), cutting resistance becomes smaller. The feed rate should be reduced.



Solid Workpiece



Hollow Workpiece (Pipe)

Inserts are sold in 10 piece boxes

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

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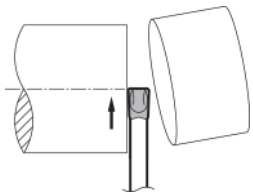
KTKH-S



For Automatic Lathe (Long Shank type)

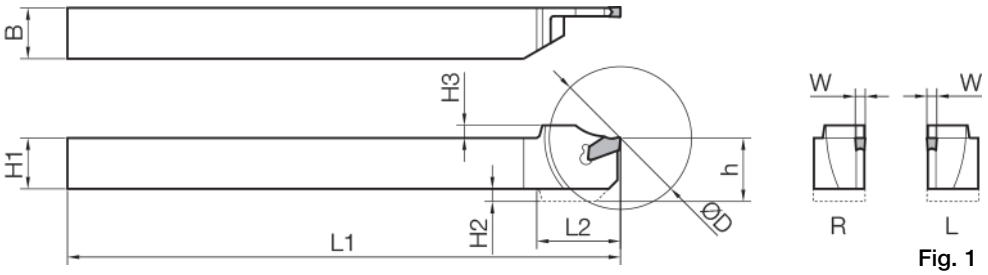


Fig. 1

For General Cut-Off

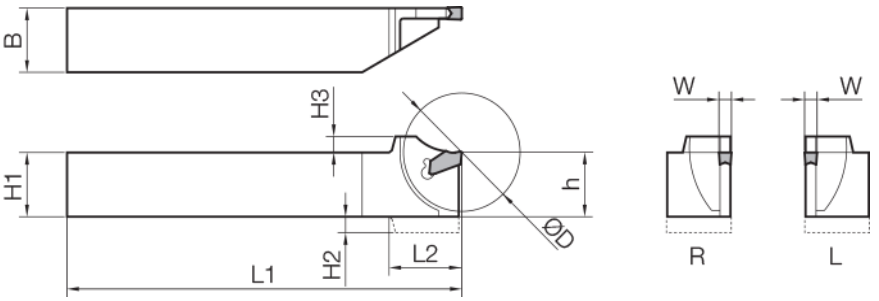


Fig. 2

For General Cut-Off

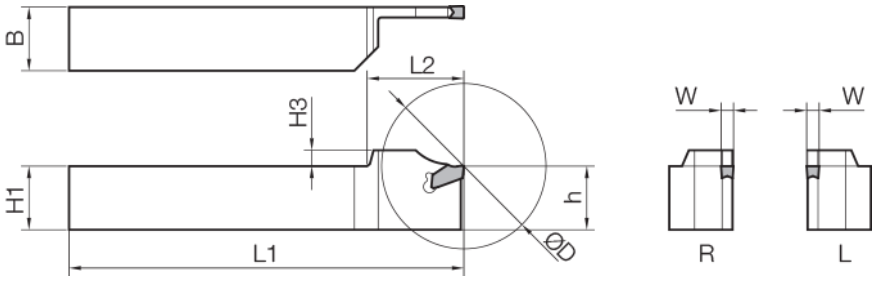


Fig. 3

Right-hand Shown

Toolholder Dimensions for Automatic Lathe (Long Shank Type)

Part Number		Stock R	Stock L	Unit	Cut-Off Dia. ØDmax	Dimensions H1=h	H2	H3	B	L1	L2	Insert Width W	Shape	Spare Parts Supplied Wrench
KTKH[R/L]	8-1.6-6S	●	●	inch	1.20	0.500	0.000	0.079	0.500	6.000	0.670	0.063	Fig.1	LTK-5
	6-2-5S	●	●		1.20	0.375	0.200	0.117	0.375	5.000	0.690	0.087 0.094		
	8-2-6S	●	●		1.30	0.500	0.160	0.087	0.500	6.000	0.700			
KTKH[R/L]	1010K-2-125S	●		mm	30	10	5	3	10	125	17.5	2.2 2.4		
	1212M-2-150S	●			30	12	4	3	12	150	18.0			
	1616M-2-150S		●		36	16	0	3	16	150	20.7			
	1616M-3-150S	●			45	16	4	4	16	150	25.6	3.1		

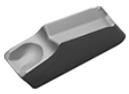
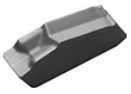
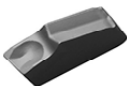
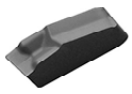
Recommended Cutting Condtions ➡ H26

Toolholder Dimensions for General Cut-Off

Part Number		Stock R	Stock L	Unit	Cut-Off Dia. ØDmax	Dimensions H1=h	H2	H3	B	L1	L2	Insert Width W	Shape	Spare Parts / Supplied Wrench
KTKH®®	12-2S	●		inch	1.500	0.750	0.000	0.150	0.750	5.000	0.870	0.087 0.094	Fig.2	LTK-5
	12-3S	●	●		2.000	0.750	-	0.100	0.750	5.000	1.190	0.122	Fig.3	
	16-3S	●			2.100	1.000		0.200	1.000	6.000	1.210	0.122		
	12-4S	●			2.400	0.750		0.100	0.750	5.000	1.350	0.161		
	16-4S	●			2.600	1.000		0.200	1.000	6.000	1.360	0.161		
	16-5S	●			3.100	1.000		0.200	1.000	6.000	1.560	0.189 0.201		
KTKH®®	1010F-2S	○	○	mm	30	10	5	4	10	80	18.6	2.2 2.4	Fig.2	
	1212H-2S	○	○		33	12	4	5	12	100	19.8			
	1612H-2S	○	○		33	16	-	3	12	100	19.8			
	1616H-2S	○	○		33	16	-	3	16	100	19.8			
	2012K-2S	○	○		38	20	-	4	12	125	22.8			
	2020K-2S	○	○		38	20	-	4	20	125	22.8			
KTKH®®	1612H-3S	○	○		36	16	4	4	12	100	21.7	3.1		
	1616H-3S	○	○		36	16	4	4	16	100	21.7	3.1		
	2012K-3S	○	○		41	20	-	5	12	125	25.3	3.1		
	2020K-3S	○	○		52	20	-	5	20	125	31.0	3.1	Fig.3	
KTKH®®	2012K-4S	○	○		44	20	-	5	12	125	26.3	4.1	Fig.2	
	2020K-4S	○	○		62	20	-	5	20	125	35.0	4.1	Fig.3	
KTKH®®	2020K-3T17S	○	○		35	20	-	5	20	125	21.8	3.1	Fig.2	
	2020K-4T22S	○	○		45	20	-	5	20	125	26.8	4.1		

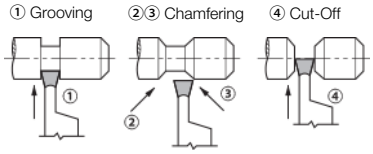
Recommended Cutting Condtions ➡ H26

Applicable Inserts

Ref. Page	➡ H23			
Shape / Toolholder		 Low Feed	 With Lead Angle	 Low Feed / Lead-Angle
KTKH®® ...-1.6...	TKN1.6	TKN1.6-P	TK®®1.6	TK®®1.6-P
KTKH®® ...-2...	TKN2 TKN2.4	TKN2-P	TK®®2 TK®®2.4	TK®®2-P
KTKH®® ...-3...	TKN3	TKN3-P	TK®®3	TK®®3-P
KTKH®® ...-4...	TKN4	-	TK®®4	-

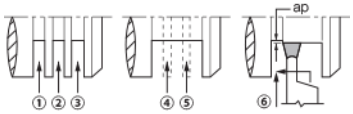
Usage Example of Cut-Off

1. Cut-Off after chamfering



2. Wide Grooving

① ~ ⑤ Groove Widening
⑥ Traverse Finishing
(Value of ap shall be under the value of Corner-R)



In order to prevent both corners' unequal wear

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

Setup (TKN / TK型)

1. Tap the insert lightly with a plastic hammer to push it tight enough that it cannot be removed by hand. **(Fig.1)**
2. Remove the insert with the supplied wrench. **(Fig.2)**

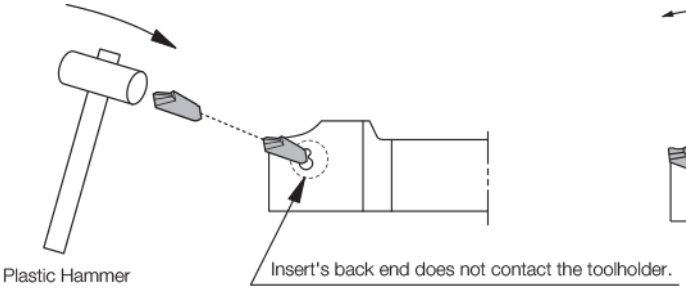


Fig.1 How to Attach Inserts

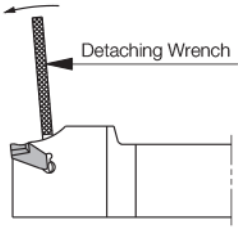


Fig.2 How to Detach Inserts

Recommended Cutting Conditions of CERACUT Cut-Off

Workpiece Material	Recommended Grade (Vc sfm)					Width				Remarks
	Cermet	CVD Coated Carbide	PVD Coated Carbide		Carbide	1.6mm	2.0~2.4mm	3.1mm	4.1mm	
	TN90	**CR9025**	**PR660**	**PR930**	**KW10**	Feed Rate (ipr)				
Carbon Steel	☆ 400~650	★ 250~600	☆ 200~425	☆ 200~425	-	0.0008~0.0032	0.0016~0.0071	0.0020~0.0098	0.0032~0.0118	Wet
Alloy Steel	☆ 325~525	★ 225~500	☆ 200~425	☆ 200~425	-	0.0008~0.0032	0.0016~0.0071	0.0020~0.0098	0.0032~0.0118	
Stainless Steel	☆ 250~500	☆ 200~450	★ 175~400	☆ 200~450	-	0.0008~0.0012	0.0016~0.0047	0.0020~0.0071	0.0032~0.0098	
Cast Iron		-	-	-	★ 175~325	0.0008~0.0032	0.0020~0.0047	0.0039~0.0098	0.0039~0.0118	
Aluminum		-	-	-	★ 325~1475	0.0008~0.0039	0.0020~0.0039	0.0020~0.0079	0.0020~0.0098	
Brass		-	-	-	★ 325~650	0.0008~0.0039	0.0020~0.0039	0.0020~0.0059	0.0020~0.0079	

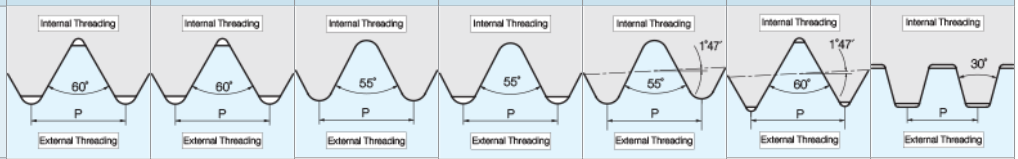
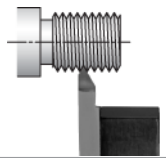
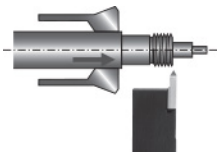
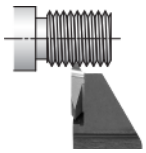
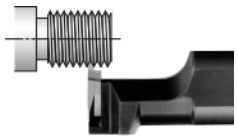
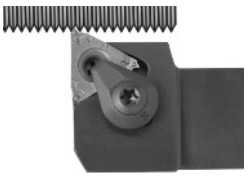
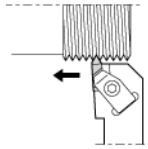
★ : 1st Recommendation ☆ : 2nd Recommendation

THREADING

J

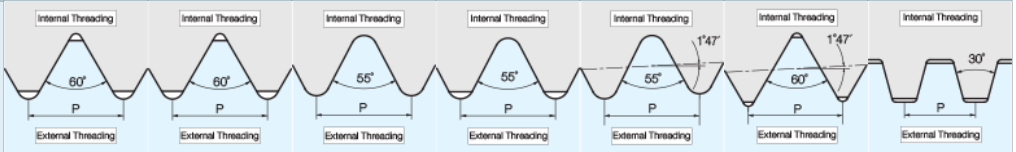
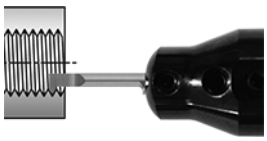
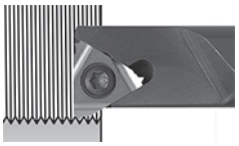
J1 - J44

External Threading

Thread Types		Metric	Unified	Parallel Pipe	Whitworth	Tapered Pipe	American National Pipe	30° Trapezoidal
		M	UN, UNC UNF, UNEF	G (PF)	W	R (PT) (BSPT)	NPT	Tr
Thread Shape								
Pitch / Toolholder Shape		mm	TPI	TPI	TPI	TPI	TPI	mm
KTKF ➡ J6 	Partial Profile	0.20~1.50 ➡ J6	64~18 ➡ J6	40~16 ➡ J6	40~16 ➡ J6	40~16 ➡ J6	-	-
KTKF ➡ J6 (Goose-neck Holders) 	Partial Profile							
KTTX ➡ J8 	Partial Profile	0.50~2.00 ➡ J9	56~14 ➡ J9	28~11 ➡ J9	24~11 ➡ J9	28~11 ➡ J9	-	-
S-KTTX ➡ J8 	Partial Profile	0.50~2.00 ➡ J9	56~14 ➡ J9	28~11 ➡ J9	24~11 ➡ J9	28~11 ➡ J9	-	-
KTN ➡ J28 	Full Profile	0.50~3.00 ➡ J16	24~8 ➡ J18	19~11 ➡ J18	16~11 ➡ J18	28~11 ➡ J20	18.0~11.5 ➡ J20	-
	Partial Profile	0.50~3.00 ➡ J22	48~8 ➡ J22	28~11 ➡ J24	40~8 ➡ J24	28~11 ➡ J24	-	2.00~3.00 ➡ J24
KTNS ➡ J28 	Full Profile	0.50~3.00 ➡ J16	24~8 ➡ J18	19~11 ➡ J18	16~11 ➡ J18	28~11 ➡ J20	18.0~11.5 ➡ J20	-
	Partial Profile	0.50~3.00 ➡ J22	48~8 ➡ J22	28~11 ➡ J24	40~8 ➡ J24	28~11 ➡ J24	-	2.00~3.00 ➡ J24
KKC ➡ J27 	Partial Profile	0.70~4.00 ➡ J26	44~5 ➡ J26	-	-	-	-	-

- KTN / KTNS Threading Inserts Identification System
  Full Profile See Page ➡ **J16**
  Partial Profile See Page ➡ **J22**

Internal Threading

Thread Types		Metric	Unified	Parallel Pipe	Whitworth	Tapered Pipe	American National Pipe	30° Trapezoidal
		M	UN, UNC UNF, UNEF	G (PF) Rp (PS)	W	Rc (PT) (BSPT)	NPT	Tr
Thread Shape								
Toolholder Shape \ Pitch		mm	TPI	TPI	TPI	TPI	TPI	mm
EZT ➡ J10 	Partial Profile	0.50~1.75 ➡ **J10**	36~16 ➡ **J10**	28~19 ➡ **J10**	24~18 ➡ **J10**	28~19 ➡ **J10**	18~14 ➡ **J10**	-
VNT ➡ J15 	Partial Profile	0.75~1.50 ➡ **J15**	28~18 ➡ **J15**	-	-	-	-	-
HPT ➡ J14 	Partial Profile	0.75~1.50 ➡ **J14**	28~16 ➡ **J14**	28~19 ➡ **J14**	24~18 ➡ **J14**	28~19 ➡ **J14**	-	-
SIN ➡ J29 	Full Profile	0.50~3.00 ➡ **J17**	24~8 ➡ **J19**	19~11 ➡ **J19**	16~11 ➡ **J19**	28~11 ➡ **J21**	18~11.5 ➡ **J21**	-
	Partial Profile	0.50~3.00 ➡ **J23**	48~8 ➡ **J23**	28~11 ➡ **J25**	40~8 ➡ **J25**	28~11 ➡ **J25**	-	2.00~3.00 ➡ **J25**

KTKF J6

Threading Insert Lineup

"JX" Toolholders (overall length 4.75") are available!

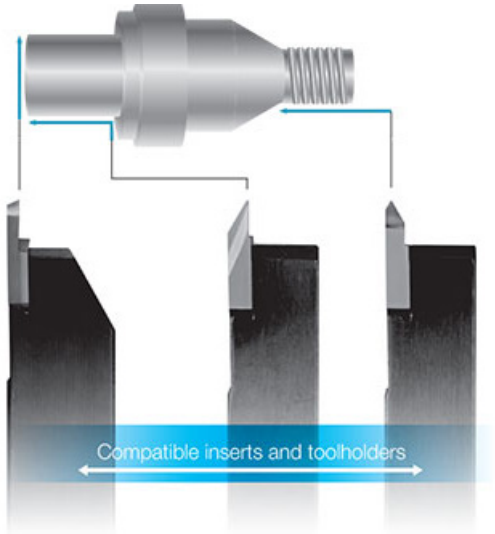
Threading

For Threading

TKFT

- **Applicable for various types of threading**

Metric (M)	Parallel Pipe [G(PF)]
Unified (UN)	Tapered Pipe [R(PT), (BSPT)]

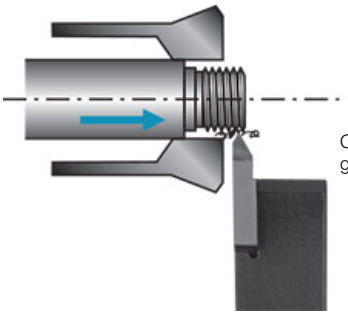


Small Parts Cut-Off	Back Turning	Threading
TKF	**TKFB**	**TKFT**

KTKF How to use the Goose-neck Holder on automatic lathe (guide bushing system)

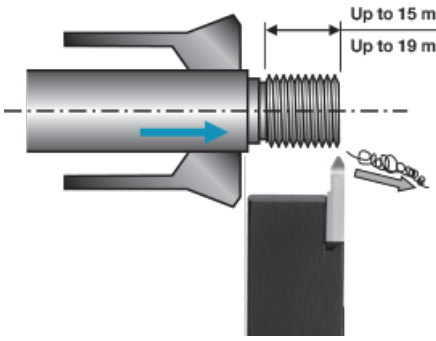
Goose-neck Holder is applicable to automatic lathes whose toolholder does not move in longitudinal direction (Z-axis)

- **Conventional Threading Tool**



Chips may interfere with guide bushing.

- **Goose-neck Holder (for Threading)**



Goose-neck Holder is available for threading without returning tread part into guide bush. (Thread length 15mm / 19mm)

- **Goose-neck Holder Precautions**

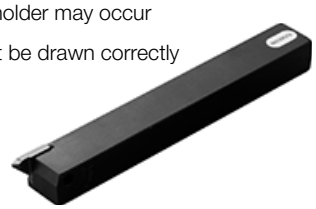
When Using Goose-neck Holder,

① Be careful of interference with back spindle because offset dimension is larger than the conventional toolholders

② Be careful of interference with sub spindle. Toolholder installation position is limited

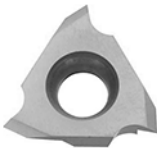
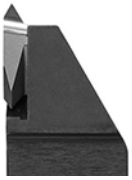
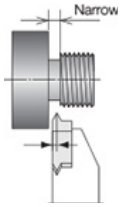
③ During simultaneous machining (balance cut and tool approach for next process), interference with other toolholder may occur

④ In some cases, such as specifying toolholder shape on NC display or using CAM, Goose-neck Holder can not be drawn correctly



TTX Advantages

- Least Cutting Resistance
- Thread to Shoulder (less dead space)
- 3-Edge

Shape	On Toolholder	Dead Space
		

TF Series Threading Inserts

High quality edge and new grade insert PR1115 achieve long tool life

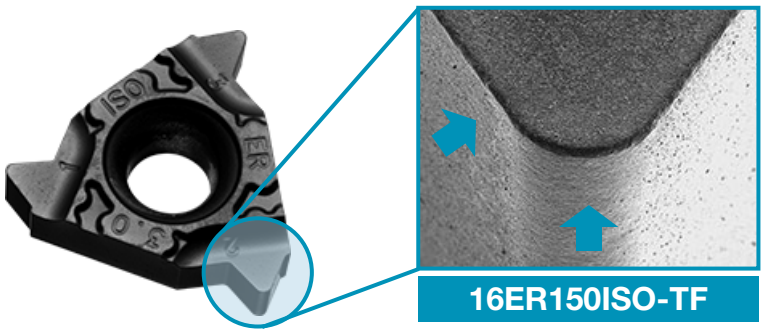
Economical Molding Specification

High Quality Cutting Edge

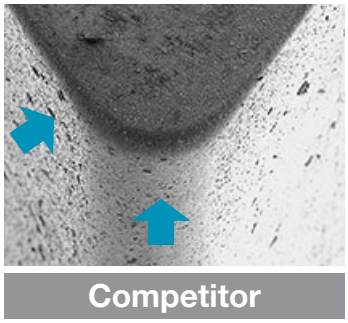
TF Series

- **High precision fine molding technology produces high quality cutting edge**

Consistent micro honing technology produces high quality cutting edge



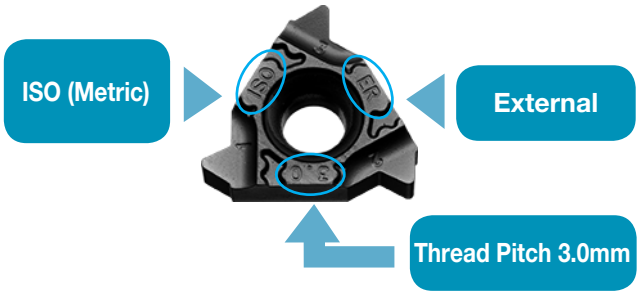
Inconsistent edge honing condition



Available for every standard screw thread

Metric (M)	Tapered Pipe [R, Rc(PT), (BSPT)]
Unified (UN)	60°Angle (Partial Profile)
Parallel Pipe [G(PF)]	55°Angle (Partial Profile)
Whitworth [W]	

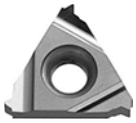
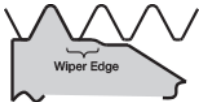
Clear markings provide user-friendly insert identification



- 16..-TF has the mark on its top face, and 11..-TF has the mark on its seating face side (bottom side)

Threading Insert Features

Full Profile and Partial Profile

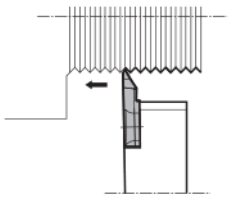
	Shape	Function	Advantages
Full Profile			① Burr-free thread surface; high quality (smooth feeling) ② Leave the workpiece diameter slightly oversized for full topping ③ Every pitch size requires a specific insert
Partial Profile			① Threads crest tends to be sharp edged ② Thread's O.D. or I.D. needs to be finished to the size before threading ③ One insert can machine to various pitch sizes

Thread Precision

Thread Type		Thread Precision: Strict ← → Loose		
Metric	External Threading	4h (1st Class)	6g (2nd Class)	8g (3rd Class)
	Internal Threading	5h (1st Class)	6h (2nd Class)	7h (3rd Class)
Unified	External Threading	3A	2A	1A
	Internal Threading	3B	2B	1B
Applicable Accuracy with Wiper Edge		※X	✓	✓

※ Not recommended if strict thread precision is required

KTKF / KTKF Goose-neck Holder



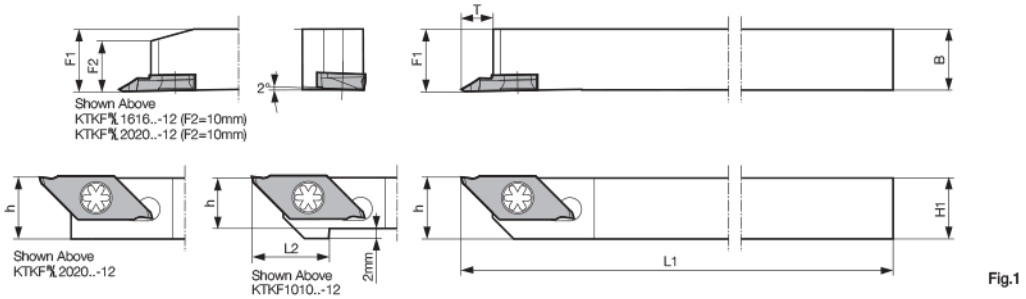
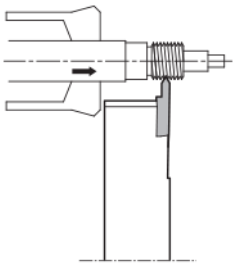


Fig.1

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder



< Goose-neck Holder >

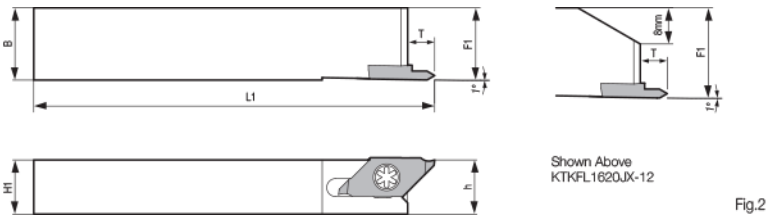


Fig.2

• Left-hand shown

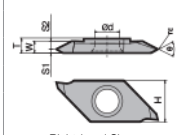
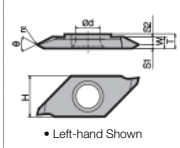
• Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Dimensions H1=h	B	L1	L2	F1	T	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts
KTKF□ 6-12JX	●	●	inch	0.375	0.375	4.750	0.590	0.375	0.236	Fig.1	SB-4590TRWN	LTW-10S	TKFT12□...
8-12JX	●	●		0.500	0.500	4.750	-	0.500	0.236	Fig.1			
10-12JX	●	●		0.625	0.625	4.750	-	0.625	0.236	Fig.1			
KTKF□ 52-12JX		●		0.500	0.625	4.750	-	0.625	0.236	Fig.2			
62.5-12JX		●		0.625	0.750	4.750	-	0.750	0.236	Fig.2			
KTKF□ 1010JX-12	●	○	mm	10	10	120	15	10	6	Fig.1	SB-4590TRWN	LTW-10S	TKFT12□...
1212JX-12	●	○		12	12	120	-	12	6	Fig.1			
1616JX-12	●	○		16	16	120	-	16	6	Fig.1			
NEW 2020JX-12	●			20	20	120	-	20	6	Fig.1			
KTKF□ 1212F-12	○			12	12	85	-	12	6	Fig.2	SB-4590TRWN	LTW-10S	TKFT12□...
KTKF□ 1216JX-12		○		12	16	120	-	16	6	Fig.2	SB-4590TRWN	LTW-10S	TKFT12L...
1620JX-12		○		16	20	120	-	20	6	Fig.2			

• Dimension T shows the distance from the toolholder to the cutting edge.

Applicable Inserts

Insert (Right-handed Insert Shown)	Part Number	Applicable Thread	Pitch mm	Pitch TPI	T	W	H	Ød	rε	S1	S2	Angle (°)	Insert Grade: MEGA COAT NANO PR1425	MEGA COAT PR1225	PVD Coated Carbide PR1025	Carbide KW10	Applicable Toolholders
Partial Profile   • Right-hand Shown	TKFT 12RA6000	M UN	0.20~0.60	64~48	3.0	2.5	8.7	5.2	Max 0.05 Flat	0.40	2.10	60°	●	●	○	○	KTKFR ...12
	12RB6000				3.0	2.5	8.7	5.2		2.10	0.40	60°	●	●	○	○	
	12RA60005		0.50~1.25	48~24	3.0	2.5	8.7	5.2	0.05	0.80	1.70	60°	●	●	●	○	
	12RB60005				3.0	2.5	8.7	5.2		1.70	0.80	60°	●	●	○	○	
	12RN6001		1.00~1.50	24~18	3.0	2.5	8.7	5.2	0.10	1.25	1.25	60°	●	●	○	○	
	12RA55005	G,R W	-	40~16	3.0	2.5	8.7	5.2	0.05	0.80	1.70	55°	●	●	○	○	
	12RB55005				3.0	2.5	8.7	5.2		1.70	0.80	55°	●	●	○	○	
 • Left-hand Shown	TKFT 12LA6000	M UN	0.20~0.60	64~48	3.0	2.5	8.7	5.2	Max 0.05 Flat	2.10	0.40	60°	●	●	○	○	KTKFL ...12
	12LB6000				3.0	2.5	8.7	5.2		0.40	2.10	60°	●	●	○	○	
	12LA60005		0.50~1.25	48~24	3.0	2.5	8.7	5.2	0.05	1.70	0.80	60°	●	●	○	○	
	12LB60005				3.0	2.5	8.7	5.2		0.80	1.70	60°	●	●	○	○	
	12LN6001		1.00~1.50	24~18	3.0	2.5	8.7	5.2	0.10	1.25	1.25	60°	●	●	○	○	
	12LA55005	G,R W	-	40~16	3.0	2.5	8.7	5.2	0.05	1.70	0.80	55°	●	●	○	○	
	12LB55005				3.0	2.5	8.7	5.2		0.80	1.70	55°	●	●	○	○	

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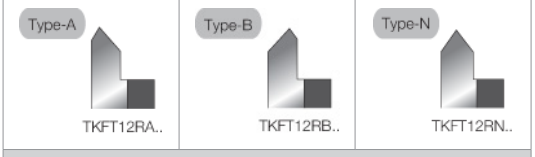
Indication of Description (See Table 1)

TKFT 12 R A 60 00

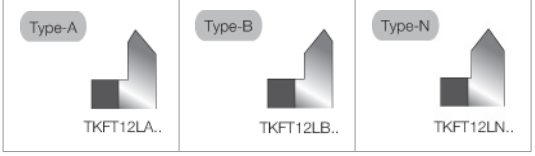
- TKFT — Name of Insert
- 12 — Insert Size
- R — Insert Hand (R: Right-hand, L: Left-hand)
- A — Location of Edge
- 60 — Angle of Thread Shape
- 00 — Corner-R (rε)

Table 1

R-hand Inserts



L-hand Inserts



Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade			
	MEGACOAT NANO	MEGACOAT	PVD Coated Carbide	Carbide
	PR1425/PR1535	PR1225	PR1025	KW10
Carbon Steel	Vc (sfm) = 230-560 First D.O.C. (Radial) under 0.0079"		Vc (sfm) = 200-490 First D.O.C. (Radial) under 0.0079"	-
Alloy Steel	Vc (sfm) = 230-560 First D.O.C. (Radial) under 0.0079"		Vc (sfm) = 200-490 First D.O.C. (Radial) under 0.0079"	-
Stainless Steel	Vc (sfm) = 200-330 First D.O.C. (Radial) under 0.0079"		Vc (sfm) = 160-260 First D.O.C. (Radial) under 0.0079"	-
Cast Iron	-		-	Vc (sfm) = 330 First D.O.C. (Radial) under 0.0079"
Aluminum	-		-	Vc (sfm) = 490-1310 First D.O.C. (Radial) under 0.0079"
Brass	-		-	Vc (sfm) = 490-980 First D.O.C. (Radial) under 0.0079"

- Coolant is recommended.
- In case of threading stainless steel, please set two to three passes more than <D.O.C. - passes> listed above.

D.O.C. & Number of Passes

60° / 55° Partial Profile

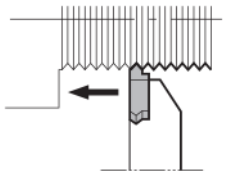
(D.O.C. shows the value of radial ap.)

Thread Type		Pitch mm & TPI	Part Number	rε	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass
Metric	External Threading	0.20mm	TKFT 12R/L A/B6000	Max 0.05 Flat	0.15	4	0.06	0.04	0.03	0.02								
		0.25mm			0.19	4	0.07	0.06	0.04	0.02								
		0.30mm			0.23	4	0.08	0.07	0.06	0.02								
		0.35mm			0.27	5	0.08	0.07	0.06	0.04	0.02							
		0.40mm			0.30	5	0.10	0.08	0.06	0.04	0.02							
		0.45mm			0.34	6	0.10	0.08	0.06	0.04	0.04	0.02						
		0.50mm	TKFT 12R/L A/B6000	Max 0.05 Flat	0.38	6	0.10	0.10	0.07	0.05	0.04	0.02						
		0.50mm	12R/L A/B60005	0.05	0.33	5	0.10	0.10	0.07	0.04	0.02							
		0.60mm	TKFT 12R/L A/B6000	Max 0.05 Flat	0.45	7	0.10	0.10	0.08	0.06	0.05	0.04	0.02					
		0.60mm	12R/L A/B60005	0.05	0.40	6	0.10	0.10	0.08	0.06	0.04	0.02						
		0.70mm	TKFT 12R/L A/B60005	0.05	0.48	6	0.10	0.10	0.10	0.10	0.06	0.02						
		0.75mm		0.05	0.52	7	0.10	0.10	0.10	0.08	0.07	0.05	0.02					
		0.80mm		0.05	0.56	7	0.10	0.10	0.10	0.10	0.08	0.06	0.02					
		1.00mm	TKFT 12R/L A/B60005	0.05	0.71	8	0.15	0.15	0.12	0.10	0.08	0.06	0.03	0.02				
		1.00mm		0.10	0.66	7	0.18	0.15	0.12	0.10	0.06	0.03	0.02					
		1.25mm	12R/L N6001	0.05	0.90	9	0.20	0.18	0.13	0.10	0.10	0.07	0.05	0.05	0.02			
		1.25mm		0.10	0.85	8	0.20	0.18	0.13	0.10	0.10	0.07	0.05	0.02				
		1.50mm	TKFT 12R/L N6001	0.10	1.04	10	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05	0.02		
Parallel Pipe	External Threading	28 TPI	TKFT 12R/L A/B55005	0.0020	0.0264	7	0.007	0.006	0.005	0.004	0.002	0.002	0.001					
		19 TPI		0.0020	0.0398	9	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.001			
Whitworth	External Threading	24 TPI	TKFT 12R/L A/B55005	0.0020	0.0311	8	0.007	0.007	0.005	0.004	0.003	0.003	0.002	0.001				
		20 TPI		0.0020	0.0378	9	0.008	0.008	0.006	0.004	0.004	0.003	0.002	0.002	0.001			
		18 TPI		0.0020	0.0421	10	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.001		
		16 TPI		0.0020	0.0476	11	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.001	

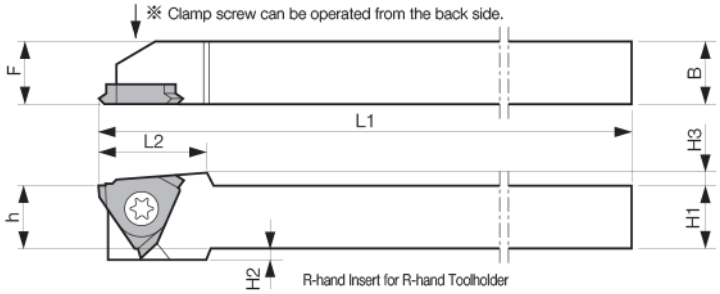
TKFT How to use the Goose-neck Holder on automatic lathe (guide bushing system) See J4

Goose-neck Holder is applicable to automatic lathes whose toolholder does not move in longitudinal direction (Z-axis diretion)

KTTX External Threading Toolholders [TTX Inset]



• Thread to shoulder



• Right-hand shown

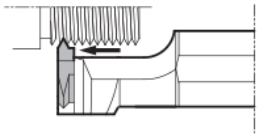
• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

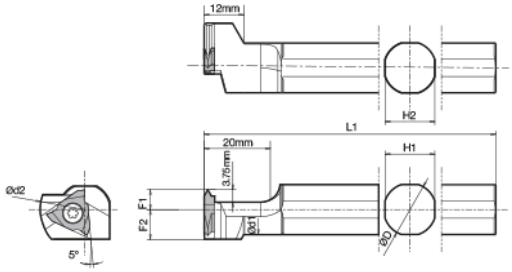
Part Number	Stock	Unit	Dimensions							Spare Parts	
			H1=h	H2	H3	B	L1	L2	F	Clamp Screw	Wrench
KTTXR 6-3JXF	●	inch	0.375	0.079	0.098	0.375	4.750	0.693	0.383	SB-4070TRW	FT-8
8-3JXF	●		0.500	-	0.098	0.500	4.750	0.693	0.508		
10-3JXF	●		0.625	-	0.98	0.625	4.750	0.693	0.633		
KTTXR 1010JX-16F	○	mm	10	2	2.5	10	120	17.6	10	SB-4070TRW	FT-8
1212JX-16F	○		12	-	2.5	12	120	17.6	12		
1616JX-16F	○		16	-	2.5	16	120	17.6	16		
KTTXR 1212F -16F	○		12	-	2.5	12	85	17.6	12		
2020K -16F	○		20	-	2.5	20	125	17.6	20		

Applicable Inserts ➡ J9

S···KTTX (External Sleeve Holder)



• Thread to shoulder



• Left-hand shown

• Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Part Number	Stock	Dimensions (mm)							Spare Parts	
		ØD	L1	F1	F2	Ød1	Ød2	H1=H2	Clamp Screw	Wrench
S12F-KTTXL16	○	12	80	6.0	9.0	11.0	27	11	SB-4070TRW	FT-8
S14H-KTTXL16	○	14	100	6.0	9.0	13.0	27	13		
S15F-KTTXL16	●	5/8"	85	6.0	9.0	14.6	27	15		
S16F-KTTXL16	○	16	85	6.0	9.0	14.6	27	15		
S19G-KTTXL16	○	3/4"	90	6.0	10.5	17.6	27	17		
S19K-KTTXL16	○	3/4"	120	6.0	10.5	17.6	27	17		
S20G-KTTXL16	○	20	90	6.0	11.0	18.6	27	18		
S20K-KTTXL16	○	20	120	6.0	11.0	18.6	27	18		
S25.0H-KTTXL16	○	25	100	10.0	14.0	23.6	32	23		
S25K-KTTXL16	●	1"	120	10.0	14.0	23.6	32	23		

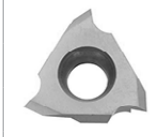
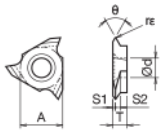
Applicable Inserts ➡ J9

Applicable Inserts (mm)

Part Number	A	T	Ød
TTX32R	9.525	3.18	4.4

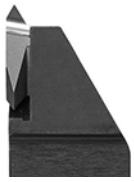
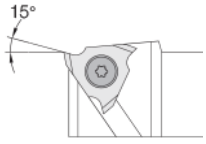
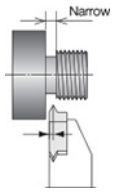
P	Carbon Steel / Alloy Steel	○	○	●		
M	Stainless Steel		○	●		
K	Cast Iron					●
N	Non-ferrous Metals					●

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Shape (Right-handed Insert Shown)	Part Number	Applicable Thread	Pitch mm	Pitch TPI	Dimensions (mm) rε	S1	S2	Angle θ	Cermet TC60	PVD Coated Carbide PR930	PVD Coated Carbide PR1115	Carbide KW10	Applicable Toolholders J8	Ref. Page for D.O.C. & Number of Passes
Partial Profile  	TTX32R 6000	M UN	0.5~1.0 -	- 56~32	0.00	0.60	1.12	60°				○	KTTXR...-3 KTTXR...-16 S...KTTXL16	J31
	60005	M UN	0.5~1.0 -	- 48~32	0.05	0.60	1.12	60°	○	●	●	●		
	6001	M UN	1.0~2.0 -	- 28~14	0.10	1.10	1.62	60°	○	○	●	○		
	TTX32R 6000S	M UN	0.5 -	- 56~48	0.00	0.30	1.12	60°		○	●	○		
	60005S	M UN	0.5 -	- 48	0.05	0.30	1.12	60°		○	●	○		
	TTX32R 5501	G,R W	-	28~19 24~20	0.10	0.75	1.01	55°	○	○	○	○		
	55015	G,R W	-	19~11 20~11	0.15	1.20	1.46	55°	○	○		○		

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

Advantages of TTX

Type	Insert	Advantages: Rake Angle after Installation	Advantages: Condition	Advantages: Dead Space
TTX			• The Least Cutting Resistance • Thread to shoulder (Less dead space) • 3-edge	

Recommended Cutting Conditions

KTTX / S-KTTX

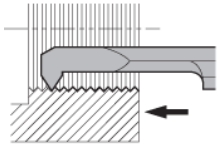
Workpiece Material	Recommended Insert Grade (Vc sfm) Cermet TC60	PVD Coated Carbide PR930	PVD Coated Carbide PR1115	Carbide KW10
Carbon Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial D.O.C.)	0.0118" or less	0.0118" or less	0.0118" or less	
Alloy Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial D.O.C.)	0.0118" or less	0.0118" or less	0.0118" or less	-
Stainless Steel	☆ 200-260	☆ 200-260	★ 200-260	-
Initial D.O.C. (Radial D.O.C.)	0.0098" or less	0.0098" or less	0.0098" or less	-
Cast Iron	-	-	-	★ 330
Initial D.O.C. (Radial D.O.C.)	-	-	-	0.0118" or less
Aluminum	-	-	-	★ 490-1310
Initial D.O.C. (Radial D.O.C.)	-	-	-	0.0118" or less
Brass	-	-	-	★ 490-1310
Initial D.O.C. (Radial D.O.C.)	-	-	-	0.0118" or less

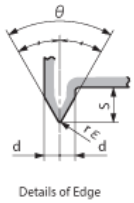
★ : 1st Recommendation ☆ : 2nd Recommendation
- Coolant is recommended.
- When using cermet inserts if edge chipping occurs lightly hone cutting edge with diamond file.
- For stainless steel threading, please set smaller intial D.O.C. and two or three more passes than threading for carbon steel.

PR930/PR1115 Threading Inserts are sold in 5 piece boxes. *All other grade Inserts are sold in 10 piece boxes.*

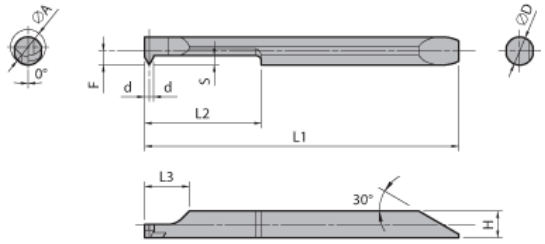
● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

EZT





Details of Edge



• Right-hand shown

Toolholder Dimensions

Part Number		Min. Bore Dia.	Dimensions (mm)										MEGA COAT	Applicable Screw					
														Metric		Unified		American National Pipe	
		ØA	ØD	H	L1	L2	L3	F	S	d	rε	θ	PR1225	Applicable Thread	Pitch (mm)	Applicable Thread	Pitch (TPI)	Applicable Thread	Pitch (TPI)
EZTR	030025-60-002	3.0	2.5	2.3	35.0	6.5	5.4	1.19	1.0	0.5	$0.02^{\pm0.01}$	60°	●	M4 M3.5 or more	P0.5~P0.8	No.8-32UNC No.8-36UNF or more	36~32	-	-
	035030-60-002	3.5	3.0	2.8	39.0	9.0	5.9	1.44	1.2	0.6			●	M4.5 M4.5 or more	P0.5~P1.0	No.10-24UNC No.8-36UNF or more	36~24	-	-
	040035-60-004	4.0	3.5	3.3	42.0	11.0	5.9	1.69	1.2	0.6	$0.04^{\pm0.01}$		●	M5 M5 or more	P0.75~P1.25	No.12-24UNC No.12-28UNF or more	28~20	-	-
	050040-60-004	5.0	4.0	3.8	45.0	16.0	6.4	1.94	1.3	0.65			●	M7 M6 or more	P0.75~P1.5	1/4-20UNC 1/4-28UNF or more	28~18	-	-
	060050-60-004	6.0	5.0	4.8	53.2	20.0	7.4	2.44	1.6	0.8			●	M8 M7 or more	P0.75~P1.5	5/16-18UNC 5/16-24UNF or more	24~16	1/4NPT 3/8NPT	18
	070060-60-004	7.0	6.0	5.8	61.2	25.0	8.4	2.94	2.0	1.0			●	M9 M8 or more	P0.75~P1.75	3/8-16UNC 3/8-24UNF or more	24~16	1/4NPT	18,14
														Whitworth		Parallel Pipe / Tapered Pipe			
EZTR	060050-55-008	6.0	5.0	4.8	53.2	20.0	7.4	2.44	1.6	0.8	$0.08^{-0.01}$	55°	●	W10 tpi 24 or more	24~20	G1/16 R1/16 or more	28	-	-
	080070-55-008	8.0	7.0	6.8	64.2	20.5	8.9	3.44	2.0	1.0			●	W11 tpi 20 or more	20~18	G1/8 R1/8 or more	28,19	-	-

• For American National Pipe (NPT), use EZTR..-60-004 see J13
For applicable sleeve see J11

Bars are sold in 1 piece boxes

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

EZH Sleeves EZ Bar Sleeves (Listed by Sleeve Shank Dia.)

Sleeve Part Number			Sleeve Shank Dia ØD1 (mm)	EZ Bar Part Number		Shank Dia ØD (mm)	Applicable Machine Manufacturer
EZH-CT (With coolant hole and EZ Adjust Structure)	EZH-HP (Adjustable)	EZH-ST		EZT	HPT		
		EZH 02512ST-80	12.00	EZTR ...025-...	-	2.5	General Machines
		03012ST-80		EZTR ...030-...	-	3.0	
		03512ST-80		EZTR ...035-...	-	3.5	
		04012ST-80		EZTR ...040-...	HPTR ...040-...	4.0	
		05012ST-80		EZTR ...050-...	HPTR ...050-...	5.0	
		06012ST-80		EZTR ...060-...	-	6.0	
		07012ST-80		EZTR ...070-...	HPTR ...070-...	7.0	
	EZH 02516HP-100	EZH 02516ST-100	16.00	EZTR ...025-...	-	2.5	General Machines
	03016HP-100	03016ST-100		EZTR ...030-...	-	3.0	
	03516HP-100	03516ST-100		EZTR ...035-...	-	3.5	
	04016HP-100	04016ST-100		EZTR ...040-...	HPTR ...040-...	4.0	
	05016HP-100	05016ST-100		EZTR ...050-...	HPTR ...050-...	5.0	
	06016HP-100	06016ST-100		EZTR ...060-...	-	6.0	
	07016HP-100	07016ST-100		EZTR ...070-...	HPTR ...070-...	7.0	
EZH 02519CT-120	EZH 02519HP-120	EZH 02519ST-120	19.05	EZTR ...025-...	-	2.5	CITIZEN MACHINERY MIYANO CO., LTD.
03019CT-120	03019HP-120	03019ST-120		EZTR ...030-...	-	3.0	
03519CT-120	03519HP-120	03519ST-120		EZTR ...035-...	-	3.5	
04019CT-120	04019HP-120	04019ST-120		EZTR ...040-...	HPTR ...040-...	4.0	
05019CT-120	05019HP-120	05019ST-120		EZTR ...050-...	HPTR ...050-...	5.0	
06019CT-120	06019HP-120	06019ST-120		EZTR ...060-...	-	6.0	
07019CT-120	07019HP-120	07019ST-120		EZTR ...070-...	HPTR ...070-...	7.0	
EZH 02520CT-120	EZH 02520HP-120	EZH 02520ST-120	20.00	EZTR ...025-...	-	2.5	AMADA MACHINE TOOLS CO.,LTD. EGURO.LTD TSUGAMI CORPORATION CITIZEN MACHINERY MIYANO CO., LTD. General Machines
03020CT-120	03020HP-120	03020ST-120		EZTR ...030-...	-	3.0	
03520CT-120	03520HP-120	03520ST-120		EZTR ...035-...	-	3.5	
04020CT-120	04020HP-120	04020ST-120		EZTR ...040-...	HPTR ...040-...	4.0	
05020CT-120	05020HP-120	05020ST-120		EZTR ...050-...	HPTR ...050-...	5.0	
06020CT-120	06020HP-120	06020ST-120		EZTR ...060-...	-	6.0	
07020CT-120	07020HP-120	07020ST-120		EZTR ...070-...	HPTR ...070-...	7.0	
EZH 02522CT-135	EZH 02522HP-135	EZH 02522ST-135	22.00	EZTR ...025-...	-	2.5	STAR MICRONICS CO., LTD. Nomura VTC Automatic Lathe Co., Ltd. TSUGAMI CORPORATION
03022CT-135	03022HP-135	03022ST-135		EZTR ...030-...	-	3.0	
03522CT-135	03522HP-135	03522ST-135		EZTR ...035-...	-	3.5	
04022CT-135	04022HP-135	04022ST-135		EZTR ...040-...	HPTR ...040-...	4.0	
05022CT-135	05022HP-135	05022ST-135		EZTR ...050-...	HPTR ...050-...	5.0	
06022CT-135	06022HP-135	06022ST-135		EZTR ...060-...	-	6.0	
07022CT-135	07022HP-135	07022ST-135		EZTR ...070-...	HPTR ...070-...	7.0	
EZH 02525.0CT-135	EZH 02525.0HP-135	EZH 02525.0ST-135	25.00	EZTR ...025-...	-	2.5	AMADA MACHINE TOOLS CO.,LTD. EGURO.LTD TSUGAMI CORPORATION CITIZEN MACHINERY MIYANO CO., LTD. General Machines
03025.0CT-135	03025.0HP-135	03025.0ST-135		EZTR ...030-...	-	3.0	
03525.0CT-135	03525.0HP-135	03525.0ST-135		EZTR ...035-...	-	3.5	
04025.0CT-135	04025.0HP-135	04025.0ST-135		EZTR ...040-...	HPTR ...040-...	4.0	
05025.0CT-135	05025.0HP-135	05025.0ST-135		EZTR ...050-...	HPTR ...050-...	5.0	
06025.0CT-135	06025.0HP-135	06025.0ST-135		EZTR ...060-...	-	6.0	
07025.0CT-135	07025.0HP-135	07025.0ST-135		EZTR ...070-...	HPTR ...070-...	7.0	
EZH 02525.4CT-120	EZH 02525.4HP-120	EZH 02525.4ST-120	25.40	EZTR ...025-...	-	2.5	CITIZEN MACHINERY MIYANO CO., LTD.
03025.4CT-120	03025.4HP-120	03025.4ST-120		EZTR ...030-...	-	3.0	
03525.4CT-120	03525.4HP-120	03525.4ST-120		EZTR ...035-...	-	3.5	
04025.4CT-120	04025.4HP-120	04025.4ST-120		EZTR ...040-...	HPTR ...040-...	4.0	
05025.4CT-120	05025.4HP-120	05025.4ST-120		EZTR ...050-...	HPTR ...050-...	5.0	
06025.4CT-120	06025.4HP-120	06025.4ST-120		EZTR ...060-...	-	6.0	
07025.4CT-120	07025.4HP-120	07025.4ST-120		EZTR ...070-...	HPTR ...070-...	7.0	

- Choose sleeves (Ød1) to meet with ØD dimension of EZG bars.
- Adjustment pin cannot be installed in EZH-ST sleeves. To adjust overhang of EZB insert, please use EZH-HP sleeves.
- Machine manufacturers in random order.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)
	MEGACOAT
	PR1225
Carbon Steel/Alloy Steel	★ 330-1070
Stainless Steel	★ 330-820
Non-ferrous Metals	-

★ : 1st Recommendation ☆ : 2nd Recommendation

Note:
1) The standard cutting speed is Vc (sfm) = 100-175. The table feed may not follow the expected conditions when machining small diameter workpieces at high speeds.
2) Coolant is recommended.

D.O.C. & Number of Passes (Metric)

Pitch (mm)	Total D.O.C. (mm)	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass	20 Pass
0.50	0.30	9	0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.02	0.02											
0.70	0.42	10	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.02										
0.75	0.45	10	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03										
0.80	0.48	11	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.03									
1.00	0.61	12	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03								
1.25	0.77	14	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03						
1.50	0.93	17	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.03			
1.75	1.10	20	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	0.04	0.03	0.03

D.O.C. & Number of Passes (Whitworth)

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass
24	0.0256	13	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001				
20	0.0319	15	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001		
18	0.0358	17	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001

D.O.C. & Number of Passes (Unified)

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass
36	0.0173	8	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001								
32	0.0197	10	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001							
28	0.0217	12	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001						
24	0.0256	12	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001						
20	0.0307	14	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001				
18	0.0346	17	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	
16	0.0390	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001

D.O.C. & Number of Passes (Parallel Pipe / Tapered Pipe)

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass
28	0.0240	12	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001						
19	0.0374	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001

D.O.C. & Number of Passes (American National Pipe (NPT))

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass
18	0.0484	16	0.007	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001			
14	0.0614	19	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001

Application of Parallel Pipe and Tapered Pipe Thread

Parallel Pipe: G (PF), Rp (PS)

Applicable Thread		TPI	Internal Threading (G, Rp)		Min. Bore Dia. (mm)	Same Root's Radius
Inch	Symbol Previous Symbol		Insert			
-	G 1/16 (-)	28	**EZTR**	**06005-55-008**	6.56	0.12
'1/8	G 1/8 (PF 1/8)	28		**08007-55-008**	8.57	0.12
'2/8	G 1/4 (PF 1/4)	19	**EZTR**	**08007-55-008**	11.45	0.18
'3/8	G 3/8 (PF 3/8)	19		**08007-55-008**	14.95	0.18

Tapered Pipe: R, Rc (PT) (BSPT)

Applicable Thread		TPI	Internal Threading (Rc)		Min. Bore Dia. (mm)	Same Root's Radius
Inch	Symbol Previous Symbol		Insert			
-	R 1/16, Rc 1/16 (-)	28	**EZTR**	**06005-55-008**	-	0.12
'1/8	R 1/8, Rc 1/8 (PT 1/8)	28		**08007-55-008**	-	0.12
'2/8	R 1/4, Rc 1/4 (PT 1/4)	19	**EZTR**	**08007-55-008**	-	0.18
'3/8	R 3/8, Rc 3/8 (PT 3/8)	19		**08007-55-008**	-	0.18

• When using "EZT type" for Parallel Pipe / Tapered Pipe threading, the thread's corners become sharp edged due to its partial profile, and the shape will not be the same as the standard shape for Parallel Pipe / Tapered Pipe.

Application for NPT

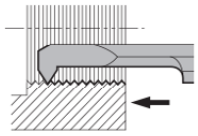
Applicable Thread	TPI	Internal Threading		
		Toolholder	Insert	
			Partial Profile	Full Profile
1/16 NPT	27	**No Tools Available**		
1/8 NPT		**No Tools Available**		
1/4 NPT	18	**EZH Sleeve**	**EZTR060050-60-004**	-
3/8 NPT			**EZTR070060-60-004**	-
1/2 NPT	14	**EZH Sleeve**	**EZTR070060-60-004**	-
3/4 NPT				-
1/2 NPT	14	**SINR1616S-16**	-	**16IR14NPT**
3/4 NPT		**SINR2016S-16**	-	**16IR14NPT**

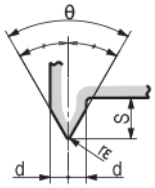
• Application of NPTF Thread

NPTF is the thread for sealing pipes without using any sealing material.

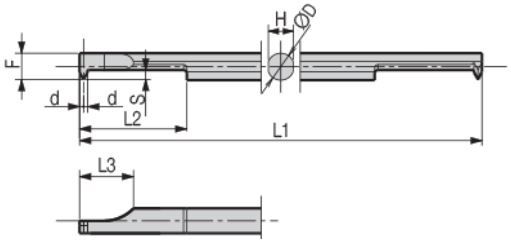
Thread symbol is similar to NPT but the Tolerance is different from that of NPT and the above inserts are not applicable to NPTF.

HPT Micro Internal Threading





Details of Edge



• Right-hand shown

Tip-Bars Dimensions

Part Number		Min. Bore Dia.	Dimensions (mm)										Insert Grade		Applicable Thread			
													PVD Coated Carbide	Carbide	Metric		Unified	
		ØA	ØD	H	L1	L2	L3	F	S	d	rε	θ	PR930	KW10	Applicable Thread	Pitch (mm)	Applicable Thread	Pitch TPI
HPTR	04504-60-005	4.5	4	3.7	60	16	8	3.9	1.3	0.6	+0 -0.02 0.05	60°	○	○	M6 or more	P0.75~P1.25	1/4-20UNC 1/4-28UNF or more	28~20
	06005-60-005	6.0	5	4.6	70	21	8	4.9	1.6	0.8		60°	○	○	M8 or more	P0.75~P1.50	5/16-18UNC 5/16-24UNF or more	24~18
	07507-60-005	7.5	7	6.4	80	26	10	6.9	2.0	1.0		60°	○	○	M10 or more	P0.75~P1.50	3/8-16UNC 3/8-24UNF or more	24~16
															Whitworth		Parallel Pipe Tapered Pipe	
HPTR	06005-55-010	6.0	5	4.6	70	21	8	4.9	1.6	0.8	+0 -0.02 0.10	55°	○	○	W10 24 W10 TPI 24 or more	24~20	G1/16 R1/16	28
	08007-55-010	8.0	7	6.4	80	26	10	6.9	2.0	1.0		55°	○	○	W11 20 W11 TPI 24 or more	20~18	G1/8 R1/8	28,19

• For American National Pipe (NPT), use HPTR...-60-005. See Page ➡ **J15**

Description Table for Tip-Bars and Applicable Sleeves

Part Number		Applicable Sleeve Part Number ➡ J11	
HPTR	04504-60-005	EZH	04...-...
	06005-60-005		05...-...
	07507-60-005		07...-...
HPTR	06005-55-010	EZH	05...-...
	08007-55-010		07...-...

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)	
	PVD Coated Carbide	Carbide
	PR930	KW10
Carbon Steel/Alloy Steel	★ 100-330	-
Stainless Steel	★ 100-260	-
Non-ferrous Metals	-	★ -980

★ : 1st Recommendation ☆ : 2nd Recommendation

Note:
1) The standard cutting speed is Vc (sfm) = 100-160. The table feed may not follow the expected conditions when machining small diameter workpieces at high speeds.
2) Coolant is recommended.

D.O.C. & Number of Passes (Metric)

Pitch (mm)	Total D.O.C. (mm)	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass
0.75	0.44	10	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.03							
1.00	0.60	12	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03					
1.25	0.76	14	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03			
1.50	0.92	17	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.03

D.O.C. & Number of Passes (Whitworth)

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass
24	0.0256	13	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001				
20	0.0319	15	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001		
18	0.0358	17	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001

D.O.C. & Number of Passes (Unified)

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass
28	0.0213	12	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001						
24	0.0252	12	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001						
20	0.0303	14	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001				
18	0.0343	17	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	
16	0.0386	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001

Tip-Bar is sold in 1 piece boxes.

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Application of Parallel Pipe and Tapered Pipe Thread

Parallel Pipe: G (PF), Rp (PS)

Applicable Thread		TPI	Internal Threading (G, Rp)		Min. Bore Dia. (mm)	Same Root's Radius
Inch	Symbol Previous Symbol		Insert			
-	G 1/16 (-)	28	**HPTR**	**06005-55-010**	6.56	0.12
'1/8	G 1/8 (PF 1/8)	28		**08007-55-010**	8.57	0.12
'2/8	G 1/4 (PF 1/4)	19	**HPTR**	**08007-55-010**	11.45	0.18
'3/8	G 3/8 (PF 3/8)	19			14.95	0.18

Tapered Pipe: R, Rc (PT) (BSPT)

Applicable Thread		TPI	Internal Threading (Rc)		Min. Bore Dia. (mm)	Same Root's Radius
Inch	Symbol Previous Symbol		Insert			
-	R 1/16, Rc 1/16 (-)	28	**HPTR**	**06005-55-010**	-	0.12
'1/8	R 1/8, Rc 1/8 (PT 1/8)	28		**08007-55-010**	-	0.12
'2/8	R 1/4, Rc 1/4 (PT 1/4)	19	**HPTR**	**08007-55-010**	-	0.18
'3/8	R 3/8, Rc 3/8 (PT 3/8)	19			-	0.18

• When using "HPT type" for parallel Pipe / Tapered Pipe threading, thread's corners become sharp edged due to its partial profile, and the sharp will not be the same as the standard shape for Parallel Pipe / Tapered Pipe.

D.O.C. & Number of Passes (Parallel Pipe / Tapered Pipe)

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass
28	0.0240	12	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001						
19	0.0374	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001

Application for NPT

Applicable Thread	TPI	Internal Threading		
		Toolholder	Insert	
			Partial Profile	Full Profile
1/16 NPT	27	**No Tools Available**		
1/8 NPT	27	**No Tools Available**		
1/4 NPT	18	**EZH Sleeve**	**HPTR06005-60-005**	-
3/8 NPT	18	See Page ➡ **J11**	**HPTR07507-60-005**	-
1/2 NPT	14	**EZH Sleeve**	**HPTR07507-60-005**	-
3/4 NPT	14	See Page ➡ **J11**	**HPTR07507-60-005**	-
1/2 NPT	14	**SINR1616S-16**	-	-
3/4 NPT	14	**SINR2016S-16**	-	**16IR14NPT**

• Application of NPTF Thread

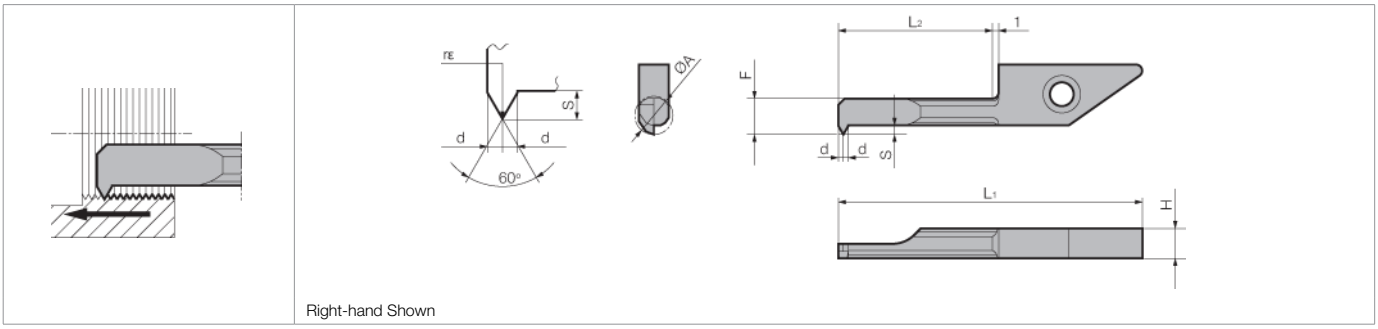
NPTF is the thread for sealing pipes without using any sealing material.

Thread symbol is similar to NPT but the Tolerance is different from that of NPT and the above inserts are not applicable to NPTF.

D.O.C. & Number of Passes (American National Pipe (NPT))

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass
18	0.0484	16	0.007	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001			
14	0.0614	19	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001

VNT (System Tip-Bars)

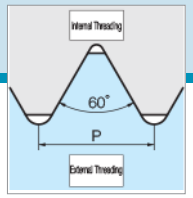


Right-hand Shown

Tip-Bars Dimensions

Part Number		Min. Bore Dia.	Dimensions (mm)							PVD Coated Carbide	Carbide	Applicable Thread			
												Metric		Unified	
		ØA	H	L1	L2	F	S	d	rε	PR930	KW10	Applicable Thread	Pitch (mm)	Applicable Thread	Pitch TPI
VNTR	**045-11**	4.5	3.9	30.8	11	3.6	1.3	0.6	+0 -0.02 0.05	●	●	M6 or more	P0.75~P1.25	1/4-20UNC, 1/4-28UNF or more	28~20
	060-11	6.0	3.9	30.8	11	4.6	1.6	0.8		●	●	M8 or more	P0.75~P1.50	5/16-18UNC, 5/16-24UNF or more	24~18

• See Page ➡ **F32~** ➡ **F33** for applicable toolholders.



External Threading Insert

Metric (M)

60° Full Profile

(mm)

Part Number	Previous Part Number	A	T	Ød
16ER/L	TNN32ER/L	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel		●	
M	Stainless Steel		●	
K	Cast Iron			●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread M Pitch mm	Dimensions (mm) rε	S	Angle θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile	16ER/L 100ISO-TF	-	1.00	0.12	0.80	60°			●				J32
	16ER/L 125ISO-TF	-	1.25	0.15	0.90	60°			●				
	16ER/L 150ISO-TF	-	1.50	0.19	1.00	60°			●				
	16ER/L 175ISO-TF	-	1.75	0.22	1.60	60°			●				
	16ER/L 200ISO-TF	-	2.00	0.25	1.50	60°			●				
	16ER/L 250ISO-TF	-	2.50	0.33	1.60	60°			●				
	16ER/L 300ISO-TF	-	3.00	0.41	1.60	60°			●				
	16ER/L 050ISO	TNN32ER/L 050M	0.50	0.06	0.40	60°	○		○	○	○		
	16ER/L 075ISO	TNN32ER/L 075M	0.75	0.09	0.53	60°	○		○	○	○		
	16ER/L 100ISO	TNN32ER/L 100M	1.00	0.12	0.80	60°	●			○	○		
	16ER/L 125ISO	TNN32ER/L 125M	1.25	0.15	0.90	60°	○			○	○		
	16ER/L 150ISO	TNN32ER/L 150M	1.50	0.19	1.00	60°	●			○	○		
	16ER/L 175ISO	TNN32ER/L 175M	1.75	0.22	1.50	60°	○						
	16ER/L 200ISO	TNN32ER/L 200M	2.00	0.25	1.50	60°	○			○	○		
	16ER/L 250ISO	TNN32ER/L 250M	2.50	0.32	1.60	60°	○				○		

Recommended Cutting Conditions J30

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16 KTNSR...-16	J28
16EL...	KTNL...-16	

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

Threading Insert Identification System (Full Profile) J16~ J21

16	E	R	100	ISO	-TF
①	②	③	④	⑤	⑥

① Insert Size	
11	6.350
16	9.525
Symbol	I.C. Size (mm)

② External / Internal	
E	External Threading
I	Internal Threading

③ Insert Hand	
R	Right hand
L	Left hand

④ Pitch	
Metric (M)	
100	Pitch 1.0mm
150	Pitch 1.5mm
Inch Screw Threading	
24	24 TPI
20	20 TPI
Full Profile	

⑤ Applicable Thread	
ISO	Metric (M)
M	Metric (M)
UN	Unified
W	Whitworth
BSPT	Tapered Pipe
NPT	American National Pipe
Full Profile	

⑥ Optional Code	
-TF	TF Cutting Edge

PR1115/GW15 Threading Inserts are sold in 5 piece boxes.

All other grade inserts are sold in 10 piece boxes.

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

Internal Threading Insert

Metric (M)

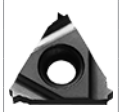
60° Full Profile

(mm)

Part Number	Previous Part Number	A	T	Ød
11IR/L	**TNN22IR/L**	6.350	3.18	3
16IR/L	**TNN32IR/L**	9.525	3.68	4

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel		●	
M	Stainless Steel		●	
K	Cast Iron			●
N	Non-ferrous Metals			●

Insert (Right-handed Insert Shown)		Part Number		Previous Part Number		Applicable Thread M Pitch mm	Dimensions (mm) rε	S	Angle θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile		**11IR/L**	**100ISO-TF**	-		1.00	0.07	0.80	60°			●				
			125ISO-TF			1.25	0.08	1.10	60°			●				
			150ISO-TF			1.50	0.11	1.10	60°			●				
			175ISO-TF			1.75	0.12	1.10	60°			●				
		**16IR/L**	**100ISO-TF**	-		1.00	0.07	0.80	60°			●				
			125ISO-TF			1.25	0.08	1.10	60°			●				
			150ISO-TF			1.50	0.11	1.10	60°			●				
			175ISO-TF			1.75	0.12	1.10	60°			●				
			200ISO-TF			2.00	0.14	1.50	60°			●				
			250ISO-TF			2.50	0.17	1.50	60°			●				
			300ISO-TF			3.00	0.19	1.60	60°			●				
		**11IR/L**	**050ISO**	**TNN22IR/L**	**050M**	0.50	0.03	0.55	60°	○		○		○		J32
			075ISO		**075M**	0.75	0.05	0.68	60°	○		○		○		
			100ISO		**100M**	1.00	0.07	0.80	60°	○			○	○		
			125ISO		**125M**	1.25	0.08	1.10	60°	○				○		
			150ISO		**150M**	1.50	0.11	1.10	60°	○			○	○		
			175ISO		**175M**	1.75	0.12	1.10	60°	○						
			200ISO		**200M**	2.00	0.14	0.90	60°			○				
		16IR/L	**100ISO**	**TNN32IR/L**	**100M**	1.00	0.07	0.80	60°	○			○	○		
			125ISO		**125M**	1.25	0.08	1.10	60°	○						
			150ISO		**150M**	1.50	0.11	1.10	60°	○			○	○		
			175ISO		**175M**	1.75	0.12	1.10	60°	○						
			200ISO		**200M**	2.00	0.14	1.50	60°	○			○	○		
			250ISO		**250M**	2.50	0.16	1.50	60°	○				○		
			300ISO		**300M**	3.00	0.19	1.60	60°					○		

Recommended Cutting Conditions J30

Applicable Toolholders

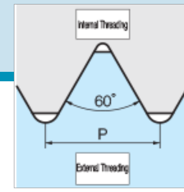
Part Number	Applicable Toolholders	Ref. Page for Toolholder
11IR...	SINR...-11E SINR...-11	J29
11IL...	SINL...-11E SINL...-11	

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16	J29
16IL...	SINL...-16	

Applicable Thread	M: Metric	R, Rc, (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

PR1115/GW15 Threading Inserts are sold in 5 piece boxes. *All other grade inserts are sold in 10 piece boxes.*

A GRADES
B INSERTS
C CBN & PCD
E TURNING
F BORING
G GROOVING
H CUT-OFF
J THREADING
L SOLID END MILLS
M MILLING
P SPARE PARTS
R TECHNICAL
T INDEX



External Threading Insert

- Unified (UN)
- 60° Full Profile

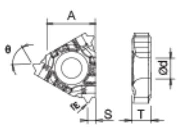
(mm)

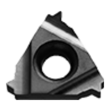
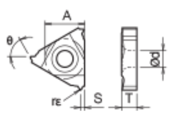
Part Number	Previous Part Number	A	T	Ød
16ER/L	TNN32ER/L	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		Cermet	PVD Coated Carbide	Carbide
P	Carbon Steel / Alloy Steel		●	
M	Stainless Steel		●	
K	Cast Iron			
N	Non-ferrous Metals			

Insert (Right-handed Insert Shown), Full Profile

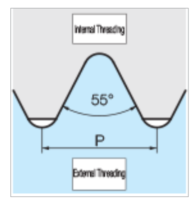



Part Number		Previous Part Number	Applicable Thread UN, UNF Pitch TPI	Dimensions (inch) rε	Dimensions (inch) S	Angle θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
16ER/L	24UN-TF	-	24	0.0047	0.0315	60°			●				J32
	20UN-TF		20	0.0059	0.0394	60°			●				
	18UN-TF		18	0.0071	0.0394	60°			●				
	16UN-TF		16	0.0079	0.0433	60°			●				
	14UN-TF		14	0.0091	0.0591	60°			●				
	13UN-TF		13	0.0098	0.0591	60°			●				
	12UN-TF		12	0.0106	0.0591	60°			●				
	10UN-TF		10	0.0134	0.0591	60°			●				
	08UN-TF		8	0.0169	0.0689	60°			●				
16ER/L	24UN	TNN32ER/L 24UN	24	0.0051	0.0315	60°	●						
	20UN	20UN	20	0.0063	0.0394	60°	●						
	18UN	18UN	18	0.0071	0.0394	60°	●						
	16UN	16UN	16	0.0079	0.0433	60°	●	●					
	14UN	14UN	14	0.0091	0.0591	60°	●						
	12UN	12UN	12	0.0106	0.0591	60°	●						

Recommended Cutting Conditions ➡ J30

- Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16 KTNSR...-16	➡ J28



External Threading Insert

- Parallel Pipe [G(PF)], Whitworth (W)
- Full Profile 55°

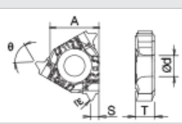
(mm)

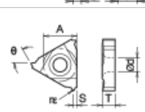
Part Number	Previous Part Number	A	T	Ød
16ER/L	TNN32ER/L	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		Cermet	PVD Coated Carbide	Carbide
P	Carbon Steel / Alloy Steel		●	
M	Stainless Steel		●	
K	Cast Iron			
N	Non-ferrous Metals			

Insert (Right-handed Insert Shown), Full Profile

Part Number		Previous Part Number	Applicable Thread G (PF) Pitch TPI	Applicable Thread W Pitch TPI	Dimensions (inch) rε	Dimensions (inch) S	Angle θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
16ER/L	19W-TF	-	19	-	0.0063	0.0394	55°			○				J33
	16W-TF		-	16	0.0075	0.0433	55°			○				
	14W-TF		14	14	0.0091	0.0591	55°			○				
	11W-TF		11	11	0.0118	0.0591	55°			○				
16ER/L	19W	TNN32ER/L 19W	19	-	0.0063	0.0394	55°	○						
	14W	14W	14	14	0.0091	0.0591	55°	○						
	11W	11W	11	11	0.0118	0.0591	55°	○						

Recommended Cutting Conditions ➡ J30

- Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16 KTNSR...-16	➡ J28

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

PR1115/GW15 Threading Inserts are sold in 5 piece boxes.

All other grade inserts are sold in 10 piece boxes.

Internal Threading Insert

- Unified (UN)
- 60° Full Profile

(mm)

Part Number	Previous Part Number	A	T	Ød
16IR/L	TNN32IR/L	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel	●
M	Stainless Steel	●
K	Cast Iron	
N	Non-ferrous Metals	

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread UN, UNF Pitch TPI	rε	S	θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile	16IR/L 24UN-TF	-	24	0.0024	0.0315	60°			●				J32
	16IR/L 20UN-TF	-	20	0.0031	0.0394	60°			●				
	16IR/L 18UN-TF	-	18	0.0035	0.0394	60°			●				
	16IR/L 16UN-TF	-	16	0.0039	0.0433	60°			●				
	16IR/L 14UN-TF	-	14	0.0047	0.0591	60°			●				
	16IR/L 13UN-TF	-	13	0.0051	0.0591	60°			●				
	16IR/L 12UN-TF	-	12	0.0055	0.0591	60°			●				
	16IR/L 10UN-TF	-	10	0.0067	0.0591	60°			●				
	16IR/L 08UN-TF	-	8	0.0083	0.0709	60°			●				
	16IR/L 24UN	TNN32IR/L 24UN	24	0.0020	0.0315	60°	○						
	16IR/L 20UN	TNN32IR/L 20UN	20	0.0028	0.0394	60°	○						
	16IR/L 18UN	TNN32IR/L 18UN	18	0.0035	0.0394	60°	○						
	16IR/L 16UN	TNN32IR/L 16UN	16	0.0039	0.0433	60°	●						
	16IR/L 14UN	TNN32IR/L 14UN	14	0.0047	0.0591	60°	○						
	16IR/L 12UN	TNN32IR/L 12UN	12	0.0055	0.0591	60°	●						

Recommended Cutting Conditions J30

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16	J29

Internal Threading Insert

- Parallel Pipe [G(PF)], Whitworth (W)
- 55° Full Profile

(mm)

Part Number	Previous Part Number	A	T	Ød
16IR/L	TNN32IR/L	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel	●
M	Stainless Steel	●
K	Cast Iron	
N	Non-ferrous Metals	

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread G (PF) Pitch TPI	W Pitch TPI	rε	S	θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile	16IR/L 19W-TF	-	19	-	0.0063	0.0394	55°			○				J33
	16IR/L 16W-TF	-	-	16	0.0075	0.0433	55°			○				
	16IR/L 14W-TF	-	14	14	0.0091	0.0591	55°			○				
	16IR/L 11W-TF	-	11	11	0.0118	0.0591	55°			○				
	16IR/L 14W	TNN32IR/L 14W	14	14	0.0091	0.0591	55°	○						
	16IR/L 11W	TNN32IR/L 11W	11	11	0.0118	0.0591	55°	○						

Recommended Cutting Conditions J30

• No wiper effect is expected when threading the internal whitworth screw using 16IR/L○W (TNN32IR/L○○W) inserts.

Applicable Toolholders

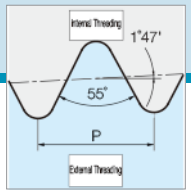
Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16	J29

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

PR1115/GW15 Threading Inserts are sold in 5 piece boxes.

All other grade inserts are sold in 10 piece boxes.

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)



External Threading Insert

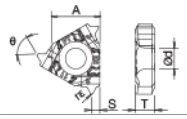
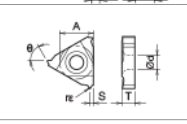
- Tapered Pipe [R, Rc(PT), (BSPT)]
- 55° Full Profile

(mm)

Part Number	Previous Part Number	A	T	Ød
16ER/L	TNN32ER/L	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

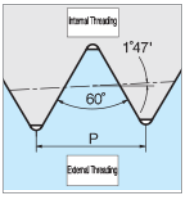
P	Carbon Steel / Alloy Steel	●
M	Stainless Steel	●
K	Cast Iron	
N	Non-ferrous Metals	

Insert (Right-handed Insert Shown)			Part Number		Previous Part Number		Applicable Thread R (PT) (BSPT) / Pitch TPI	Dimensions (inch) rε	S	Angle θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile			16ER/L	28BSPT-TF	-		28	0.0039	0.0315	55°			○				J33
				19BSPT-TF			19	0.0063	0.0394	55°			○				
				14BSPT-TF			14	0.0087	0.0630	55°			○				
				11BSPT-TF			11	0.0114	0.0630	55°			○				
			16ER/L	28BSPT	TNN32ER/L	28PT	28	0.0039	0.0315	55°	○				○		
				19BSPT		19PT	19	0.0063	0.0394	55°	○				○		
				14BSPT		14PT	14	0.0087	0.0630	55°	○				○		
				11BSPT		11PT	11	0.0114	0.0630	55°	○				○		

Recommended Cutting Conditions ➡ J30

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16 KTNSR...-16	➡ J28



External Threading Insert

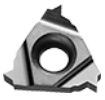
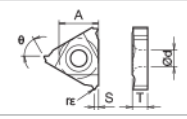
- American National Pipe [NPT]
- 60° Full Profile

(mm)

Part Number	Previous Part Number	A	T	Ød
16ER/L	TNN32ER/L	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel	●
M	Stainless Steel	●
K	Cast Iron	●
N	Non-ferrous Metals	●

Insert (Right-handed Insert Shown)			Part Number		Previous Part Number		Applicable Thread NPT / Pitch TPI	Dimensions (inch) rε	S	Angle θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile			16ER/L	18NPT	TNN32ER/L	18NPT	18.0	0.0016	0.0354	60°	●		●		○		J33
				14NPT		14NPT	14.0	0.0020	0.0591	60°	○		●		○		
				11.5NPT		11.5NPT	11.5	0.0024	0.0591	60°	●		●		○		

Recommended Cutting Conditions ➡ J30

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16 KTNSR...-16	➡ J28

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

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All other grade inserts are sold in 10 piece boxes.

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(Technical Support) 800.823.7284 - Option 2
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U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

Internal Threading Insert

Tapered Pipe [R, Rc(PT), (BSPT)]

55° Full Profile

(mm)

Part Number	Previous Part Number	A	T	Ød
11IR/L	TNN22IR/L	6.350	3.18	3.00
16IR/L	TNN32IR/L	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		Cermet	PVD Coated Carbide	Carbide
P	Carbon Steel / Alloy Steel		●	
M	Stainless Steel		●	
K	Cast Iron			●
N	Non-ferrous Metals			●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread RC (PT) (BSPT) Pitch TPI	Dimensions (inch) rε	S	Angle θ	TC60 R	TC60 L	PR1115 R	PR1115 L	GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile	11IR/L 28BSPT-TF	-	28	0.0039	0.0236	55°			○				➡ J33
	11IR/L 19BSPT-TF	-	19	0.0063	0.0307	55°			○				
	11IR/L 14BSPT-TF	-	14	0.0087	0.0382	55°			○				
	16IR/L 14BSPT-TF	-	14	0.0087	0.0382	55°			○				
	16IR/L 11BSPT-TF	-	11	0.0114	0.0591	55°			○				
	11IR/L 28BSPT	TNN22IR/L 28PT	28	0.0039	0.0236	55°	○				○		
	11IR/L 19BSPT	TNN22IR/L 19PT	19	0.0063	0.0307	55°	○				○		
	11IR/L 14BSPT	TNN22IR/L 14PT	14	0.0087	0.0382	55°	○				○		
	16IR/L 14BSPT	TNN32IR/L 14PT	14	0.0087	0.0382	55°	○				○		
	16IR/L 11BSPT	TNN32IR/L 11PT	11	0.0114	0.0591	55°	○				○		

Recommended Cutting Conditions ➡ J30

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
11IR ..	SINR...-11E	➡ J29
	SINR...-11	
16IR ..	SINR...-16	

Internal Threading Insert

American National Pipe [NPT]

60° Full Profile

(mm)

Part Number	Previous Part Number	A	T	Ød
16ER/L	TNN32ER/L	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		Cermet	PVD Coated Carbide	Carbide
P	Carbon Steel / Alloy Steel		●	
M	Stainless Steel		●	
K	Cast Iron			●
N	Non-ferrous Metals			●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread NPT Pitch TPI	Dimensions (inch) rε	S	Angle θ	TC60 R	TC60 L	PR1115 R	PR1115 L	GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile	16IR/L 18NPT	TNN32IR/L 18NPT	18.0	0.0016	0.0354	60°	○		●		○		➡ J33
	16IR/L 14NPT	14NPT	14.0	0.0020	0.0591	60°	●		●		○		
	16IR/L 11.5NPT	11.5NPT	11.5	0.0024	0.0591	60°	○		●		○		

Recommended Cutting Conditions ➡ J30

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16	➡ J29

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

PR1115/GW15 Threading Inserts are sold in 5 piece boxes. *All other grade inserts are sold in 10 piece boxes.*

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

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(Technical Support) **800.823.7284 - Option 2**
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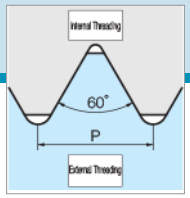


External Threading Insert

- Metric (M), Unified (UN)
- 60° Partial Profile

(mm)

Part Number	Previous Part Number	A	T	Ød
16E□	TNN32E□	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		Cermet	PVD Coated Carbide	Carbide
P	Carbon Steel / Alloy Steel		●	
M	Stainless Steel		●	
K	Cast Iron			●
N	Non-ferrous Metals			●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread M Pitch mm	Applicable Thread UN UNF Pitch TPI	rε	S	θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile	16E□ A60-TF	-	0.50~1.50	48~16	0.06	1.00	60°			●				J33 J34
	16E□ G60-TF	-	1.75~3.00	14~8	0.22	1.60	60°			●				
	16E□ AG60-TF	-	0.50~3.00	48~8	0.06	1.60	60°			●				
	16E□ A60	-	0.50~1.50	48~16	0.06	1.00	60°					○		
	16E□ G60	-	1.75~3.00	14~8	0.22	1.60	60°					○		
	16E□ AG60	-	0.50~3.00	48~8	0.06	1.60	60°					○		
	16E□ 6001	TNN32E□ 6001	1.00~2.50	24~11	0.10	1.50	60°	●						
	16E□ 6002	TNN32E□ 6002	1.50~2.50	16~11	0.20	1.50	60°	●						

Recommended Cutting Conditions ➡ J30

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16 KTNSR...-16	➡ J28

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

Threading Insert Identification System (Partial Profile) ➡ J22 ~ ➡ J25

16 ① E ② R ③ A60 ④ -TF ⑤

① Insert Size	
06	3.970
08	4.760
11	6.350
16	9.525
Symbol	I.C. Size (mm)

② External / Internal	
E	External Threading
I	Internal Threading

③ Insert Hand	
R	Right hand
L	Left hand

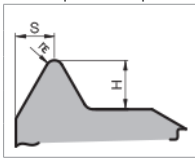
④ Pitch		
60°	A60	60° Angle (Partial Profile)
		0.50mm~1.50mm
60°	G60	60° Angle (Partial Profile)
		1.75mm~3.00mm
60°	AG60	60° Angle (Partial Profile)
		0.50mm~3.00mm
55°	A55	55° Angle (Partial Profile)
		40~16 TPI
55°	G55	55° Angle (Partial Profile)
		14~8 TPI
55°	AG55	55° Angle (Partial Profile)
		40~8 TPI
Vertex angle		Partial Profile

④ Pitch		
60°	6001	60° Angle (Partial Profile) R Corner-R (rε)=0.10mm
		1.00mm~2.50mm
55°	5501	55° Angle (Partial Profile) R Corner-R (rε)=0.10mm
		28~11 TPI
Vertex angle		Partial Profile

⑤ Optional Code	
-TF	TF Cutting Edge

Note: Pitch and threads per inch of an insert without wiper depend on the size of insert.

• Example of shape of A, G and AG



Part Number	Dimensions (mm) rε	S	H
16ER A60-TF	0.06	1.00	1.50
16ER G60-TF	0.22	1.60	2.60
16ER AG60-TF	0.06	1.60	2.70

Corner-R (rε) Selection for Partial Profiling Inserts

	External Threading	Internal Threading
External Threading	rε≦0.1443P	rε≦0.0720P
Parallel Pipe Whitworth Tapered Pipe	For Both External and Internal Thread rε≦0.1373P	

• Metric, Unified Thread
Corner-R (rε) at Internal Threading is almost half of that of External.

• Parallel Pipe, Tapered Pipe, Whitworth Thread
Same Corner-R (rε) for both External and Internal Threading.

rε : Corner-R P : Pitch (= 25.4/n) n : TPI

PR1115/GW15 Threading Inserts are sold in 5 piece boxes.

All other grade inserts are sold in 10 piece boxes.

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U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

Internal Threading Insert

Metric (M), Unified (UN)

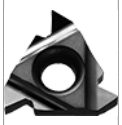
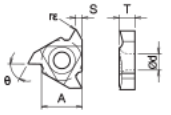
60° Partial Profile

(mm)

Part Number	Previous Part Number	A	T	Ød
06IR	**TNN06IR**	3.970	1.91	2.30
08IR	**TNN08IR**	4.760	2.38	2.30
11IR	**TNN22IR**	6.350	3.18	3.00
16IR	**TNN32IR**	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel		●	
M	Stainless Steel		●	
K	Cast Iron			●
N	Non-ferrous Metals			●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread M	Applicable Thread UN UNF	Dimensions (mm) rε	Dimensions (mm) S	Angle θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
			Pitch mm	Pitch TPI										
Full Profile  	**11IR** **A60**	-	0.50~1.50	48~16	0.02	1.00	60°			●		○		
	16IR **A60**		0.50~1.50	48~16	0.02	1.00	60°			●		○		
	G60		1.75~3.00	14~8	0.11	1.70	60°			●		○		
	AG60		0.50~3.00	48~8	0.02	1.70	60°			●		●		
	06IR **60005**	**TNN06IR** **60005**	0.75~1.25	28~20	0.05	0.60	60°			○				➡ J34
	08IR **60007**	**TNN08IR** **60007**	1.00~1.75	20~16	0.07	0.80	60°			●				➡ J35
	11IR **60005**	**TNN22IR** **60005**	0.75~1.50	32~16	0.05	1.00	60°	○						
	16IR **6001**	**TNN32IR** **6001**	1.50~2.50	16~10	0.10	1.50	60°	○						
	60015	**60015**	2.50	11~10	0.15	1.50	60°	○						

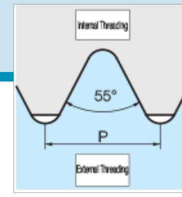
Recommended Cutting Conditions ➡ **J30**

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
06IR...	SINR...-06E	➡ **J29**
08IR...	SINR...-08E	
11IR...	SINR...-11E SINR...-11	
16IR...	SINR...-16	

Applicable Thread	M: Metric	R, Rc, (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

PR1115/GW15 Threading Inserts are sold in 5 piece boxes. *All other grade inserts are sold in 10 piece boxes.*



External Threading Insert

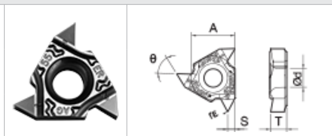
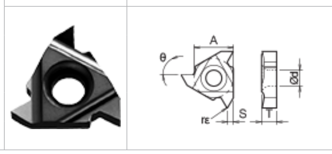
- **Parallel Pipe [G(PF)], Tapered Pipe [R, (PT), (BSPT)], Whitworth (W)**
- **55° Partial Profile**

(mm)

Part Number	Previous Part Number	A	T	Ød
16ER/L	**TNN32ER/L**	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

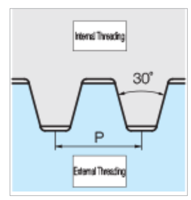
		Cermet TC60	PVD Coated Carbide PR1115	Carbide GW15
P	Carbon Steel / Alloy Steel		●	
M	Stainless Steel		●	
K	Cast Iron			●
N	Non-ferrous Metals			●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread G(PF) R(PT) Pitch TPI	Applicable Thread W Pitch TPI	Dimensions (mm) rε	Dimensions (mm) S	Angle θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile 	**16ER/L A55-TF**	-	28, 19	40~16	0.06	1.00	55°			○				
	G55-TF		14, 11	14~8	0.22	1.60	55°			○				
	AG55-TF		28~11	40~8	0.06	1.60	55°			○				J35
	**16ER/L A55**	-	28, 19	40~16	0.06	1.00	55°					○		J36
	G55		14, 11	14~8	0.22	1.60	55°					○		J37
	AG55		28~11	40~8	0.06	1.60	55°					○		
	16ER/L 5501	**TNN32ER/L 5501**	28~11	24~10	0.10	1.50	55°	○						
	5502	**5502**	14, 11	16~9	0.15	1.50	55°	○						

Recommended Cutting Conditions **J30**

- **Applicable Toolholders**

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16 KTNSR...-16	**J28**



External Threading Insert

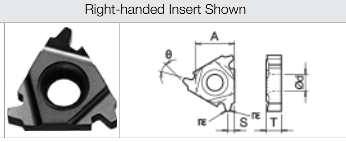
- **Trapezoidal**
- **30° Partial Profile**

(mm)

Part Number	Previous Part Number	A	T	Ød
16E--	**TNN32ER/L**	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		Cermet TC60	PVD Coated Carbide PR1115	Carbide GW15
P	Carbon Steel / Alloy Steel		●	
M	Stainless Steel		●	
K	Cast Iron			
N	Non-ferrous Metals			

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread Tr Pitch mm	Dimensions (mm) rε	Dimensions (mm) S	Angle θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile 	**16ER/L 200TR**	**TNN32ER/L 200TR**	2.00	0.20	1.60	30°	○		○				J36
	300TR	**300TR**	3.00	0.20	1.60	30°	○		○				

Recommended Cutting Conditions **J30**

- **Applicable Toolholders**

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16 KTNSR...-16	**J28**

Applicable Thread		
Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

PR1115/GW15 Threading Inserts are sold in 5 piece boxes. *All other grade inserts are sold in 10 piece boxes.*

A GRADES
B INSERTS
C CBN & PCD
E TURNING
F BORING
G GROOVING
H CUT-OFF
J THREADING
L SOLID END MILLS
M MILLING
P SPARE PARTS
R TECHNICAL
T INDEX

Internal Threading Insert

Parallel Pipe [G(PF)], Tapered Pipe [Rc, (PT), (BSPT)], Whitworth (W)

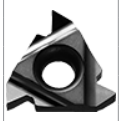
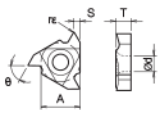
55° Partial Profile

(mm)

Part Number	Previous Part Number	A	T	Ød
06IR/L	TNN06IR/L	3.970	1.91	2.30
08IR/L	TNN08IR/L	4.760	2.38	2.30
11IR/L	TNN22IR/L	6.350	3.18	3.00
16IR/L	TNN32IR/L	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		Cermet	PVD Coated Carbide	Carbide
P	Carbon Steel / Alloy Steel		●	
M	Stainless Steel		●	
K	Cast Iron			●
N	Non-ferrous Metals			●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread G(PF) Rc(PT) Pitch TPI	Applicable Thread W Pitch TPI	Dimensions (mm) rε	Dimensions (mm) S	Angle θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Carbide GW15 R	Carbide GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile  	11IR/L A55	-	28, 19	40~16	0.06	1.00	55°			○		○		
	16IR/L A55		28, 19	40~16	0.06	1.00	55°			○		○		
	G55		14, 11	14~8	0.22	1.70	55°			○		○		
	AG55		28~11	40~8	0.06	1.70	55°			○		○		→ J35
	06IR/L 5501	TNN06IR/L 5501	28	24	0.10	0.60	55°			○				→ J36
	08IR/L 5501	TNN08IR/L 5501	28, 19	24, 20	0.10	0.80	55°			○				→ J37
	11IR/L 55005	TNN22IR/L 55005	28~14	24~14	0.05	1.10	55°	○						
	16IR/L 5501	TNN32IR/L 5501	28~11	24~11	0.10	1.50	55°	○						
	5502	5502	14~11	16~11	0.20	1.50	55°	○						

Recommended Cutting Conditions → J30

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
06IR...	SINR...-06E	→ J29
08IR...	SINR...-08E	
11IR...	SINR...-11E SINR...-11	

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16	→ J29

Internal Threading Insert

Trapezoidal

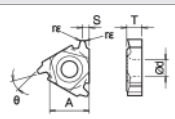
30° Partial Profile

(mm)

Part Number	Previous Part Number	A	T	Ød
16IR/L	TNN32IR/L	9.525	3.68	4.00

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		Cermet	PVD Coated Carbide
P	Carbon Steel / Alloy Steel		●
M	Stainless Steel		●
K	Cast Iron		
N	Non-ferrous Metals		

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread Tr Pitch mm	Dimensions (mm) rε	Dimensions (mm) S	Angle θ	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR1115 R	PVD Coated Carbide PR1115 L	Ref. Page for D.O.C. & Number of Passes
Full Profile  	16IR/L 200TR	TNN32IR/L 200TR	2.00	0.20	1.60	30°	○		○		→ J36
	300TR	300TR	3.00	0.20	1.60	30°	○		○		

Recommended Cutting Conditions → J30

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16	→ J29

Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

PR1115/GW15 Threading Inserts are sold in 5 piece boxes. *All other grade inserts are sold in 10 piece boxes.*

Cera-Notch External Threading Insert

KCT / KCTP / KCTK

Shape (Right-handed Insert Shown)	Part Number	Applicable Thread	Pitch TPI	Dimensions (inch) A	T	R	E	S	L	Angle θ	Insert Grade Cermet TC60	MEGA COAT CVD PR1215	Ref. Page for Toolholder
Partial Profile	KCT 2	M UN	External 8-36 Internal 7-20	0.219	0.150	0.004	0.266	0.075	0.350	60°	●	●	J27
	KCT 3	M UN	External 6-20 Internal 5-12	0.344	0.195	0.007	0.400	0.098	0.634	60°	●	●	
	KCTP 2	M UN	External 8-36 Internal 7-20	0.219	0.150	0.004	0.266	0.075	0.350	60°	●	●	
	KCTP 3	M UN	External 6-20 Internal 5-12	0.344	0.195	0.007	0.400	0.098	0.634	60°	●	●	
	KCTK 2	M UN	External 14-44 Internal 12-24	0.219	0.150	0.003	0.268	0.110	0.350	60°	●	●	
	KCTK 3	M UN	External 10-44 Internal 9-24	0.344	0.195	0.003	0.402	0.141	0.634	55°	●	●	

Cera-Notch Conversion Table

Notch / Lock Style Inserts Conversion

Notch Style Grooving Inserts								
Inserts Style	**Kyocera**	**Horizon**	**Tool-Flo**	**Kennametal**	**RTW**	**Valentine**	**Sandvik**	**Mitsubishi**
Face Grooving	KCFP	HF	FLF	NF	-	-	TLF*	EF
ID or OD Grooving	KCG / KCGP	HG	FLG	NG	PG	VLG	TLG*	EG
With Chipbreaker	KCGP-MY	HG-K	FLG CB	NG-K	PG-K	-	-	EG-K
Deep Grooving	KCGDP	HGD	FLGD	NGD	PGD	-	-	EGD
Positive Grooving	KCGP	HGP	FLGP	NGP	-	VLGP	TLGP*	EGP
Full Nose Radius	KCRP	HR	FLR	NR	PR	VLR	TLR*	EGR
Positive Full Nose Radius	KCRP	HRP	FLRP	NRP	PRP	VLRP	TLRP*	-
Notch Style Threading Inserts								
Inserts Style	**Kyocera**	**Horizon**	**Tool-Flo**	**Kennametal**	**RTW**	**Valentine**	**Sandvik**	**Mitsubishi**
Face Grooving	KCT	HT	FLT	NT	PT	VLT	TLT*	ET
ID or OD Grooving	KCTK	HTK	FLTK	NTK	PTK	VLTK	TLTK*	-
With Chipbreaker	KCTP	HTP	FLTP	NTP	PTP	VLTP	TLTP*	-

* Sandvik uses a different clamp system. Requires Kyocera or any other standard clamp from competitor.

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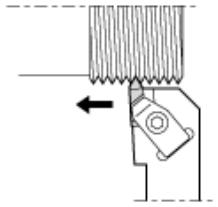
KKC



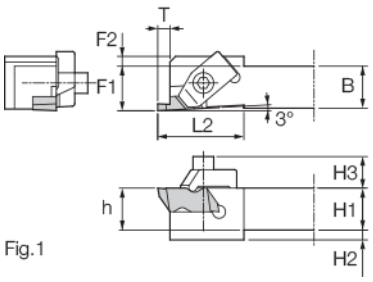


Fig.1

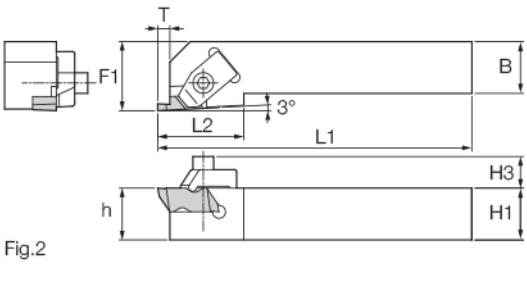


Fig.2

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

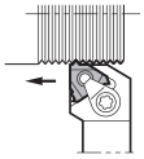
Part Number	Stock R	Stock L	Unit	Dimensions H1=h	H2	H3	B	L1	L2	F1	F2	T	Drawing	Spare Parts Clamp	Clamp Bolt	Wrench
KKC□ 1212M-2-150F	●		mm (inch)	12 (0.472)	-	9.2 (0.362)	12 (0.472)	150 (5.906)	19.05 (0.750)	12.25 (0.482)	-	3.5 (0.126)	Fig.1	CKC-2□	SKC-2	(7/64 hex)
KKC□ 6-2X	●	●	Inch	0.375	-	0.362	0.375	2.500	0.750	0.562	-	0.138	Fig. 2	CKC-2□	SKC-2	(7/64 hex)
6-2CF	●	●		0.375	0.125	0.362	0.375	5.000	0.750	0.385	0.125	0.138	Fig. 1			
8-2X	●	●		0.500	-	0.362	0.500	3.500	0.750	0.750	-	0.138	Fig. 2			
8-2DF	●	●		0.500	-	0.362	0.500	6.000	0.750	0.510	-	0.138	Fig. 1			
10-2DF	●	●		0.625	-	0.362	0.625	6.000	0.750	0.635	-	0.138	Fig. 1			

• Clamp : CKC-○R for right-hand toolholder, CKC-○L for left-hand toolholder
• Spare parts items marked in ( ) are not included with toolholder

Applicable Inserts

Part Number	Applicable Inserts	Ref. Page for Inserts
KKC□ ...2-	KCT-2□ KCTK-2□, KCTP-2□	➡ J26

KTN



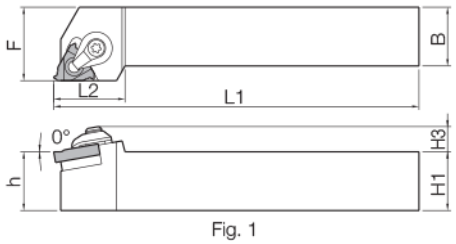
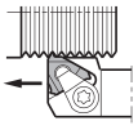


Fig. 1

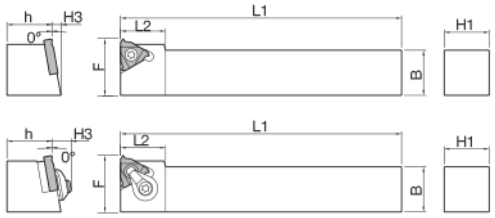
• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

KTNS (For Gang Type NC Lathe)



• Thread to shoulder



KTNSR1010H-16
1212K-16

Fig. 2

KTNSR1616K-16
2020K-16

Fig. 3

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder.

Toolholder Dimensions

Part Number		Stock		Dimensions						Drawing	Spare Parts					Applicable Inserts
											Clamp Set	Clamp Screw	Wrench	Clamp Screw	Shim Screw	
		R	L	H1=h	H3	B	L1	L2	F							
KTN	1616H-16	○	○	16	8.50	16	100	25	20.0	Fig.1	CPS-5S	-	FT-15	TN-32	SP3X8	16E
	2020H-16*	○		20	8.50	20	100	25	25.0	Fig.1	CPS-5S	-	FT-15	TN-32	SP3X8	
	2020K-16	○	○	20	8.50	20	125	25	25.0	Fig.1	CPS-5S	-	FT-15	TN-32	SP3X8	
KTNS	1010H-16	○		10	8.50	10	100	16	16.0	Fig.2	-	SB-3.5TR	FT-15	-	-	16E
	1212K-16	○		12	8.50	12	125	18	18.0	Fig.2	-	SB-3.5TR	FT-15	-	-	
	1616K-16	○		16	8.50	16	125	18	22.0	Fig.3	CPS-5S	-	FT-15	TN-32	SP3X8	
	2020K-16	○		20	8.50	20	125	20	27.4	Fig.3	CPS-5S	-	FT-15	TN-32	SP3X8	

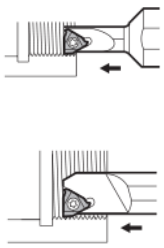
* Mark indicates short shank type.

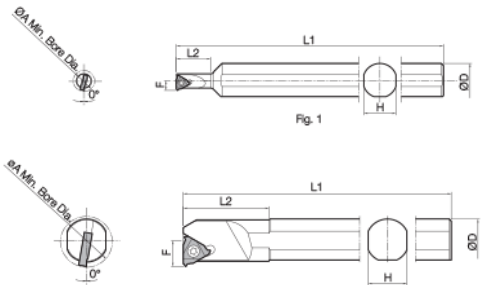
Reference page for applicable inserts

Applicable Thread	Full Profile	Partial Profile	Applicable Thread	Full Profile	Partial Profile
M: Metric	J16	J22	R (PT), (BSPT): Tapered Pipe	J20	J24
UN: Unified	J18	J22	W: Whitworth	J18	J24
UNF: Unified Fine Thread	J18	J22	NPT: American National Pipe	J20	-
G (PF): Parallel Pipe	J18	J24	Tr: 30° Trapezoidal	-	J24

NEW ITEMS!

SIN





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock		Min. Bore Dia.	Dimensions (mm)					Insert	Spare Parts		Applicable Inserts
											Clamp Screw	Wrench	
				ØA mm (inch)	ØD	H	L1	L2	F				
SIN	0612S-06E	○		6.40 (0.252)	12	11	100	10	3.80	Fig.1	SB-2040TR	FT-6	06 IR...
	0816S-08E	○		7.80 (0.307)	16	15	125	16	4.00	Fig.1	SB-2050TR	FT-6	08 IR...
NEW	1216S-11E	○	○	12.00 (0.472)	16	14	150	25	6.30	Fig.1	SB-2TR	FT-8	11 IR...
	1516S-11	○	○	15.00 (0.591)	16	14	150	30	7.50	Fig.1	SB-2TR	FT-8	11 IR...
	1616S-16	○		16.00 (0.630)	16	14	150	32	8.60	Fig.2	SB-3.5TR	FT-15	16 IR...
	2016S-16	○	○	20.00 (0.787)	16	14	150	37	10.00	Fig.2	SB-3.5TR	FT-15	16 IR...

Reference page for applicable inserts

Applicable Thread	Full Profile	Partial Profile	Applicable Thread	Full Profile	Partial Profile
M: Metric	➡ J17	➡ J23	R (PT), (BSPT): Tapered Pipe	➡ J21	➡ J25
UN: Unified	➡ J19	➡ J23	W: Whitworth	➡ J19	➡ J25
UNF: Unified Fine Thread	➡ J19	➡ J23	NPT: American National Pipe	➡ J21	-
G (PF): Parallel Pipe	➡ J19	➡ J25	Tr: 30° Trapezoidal	-	➡ J25

Guide for Internal Threading

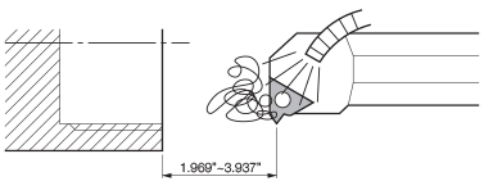
For internal threading, pay extra attention to "Stabilizing diameters of pre-drilled holes"and "chip evacuation".

1. Stabilizing diameters of pre-drilled holes
   Because small pitch internal threads have a small corner radius any variation in the diameter of pre drilled holes will greatly affect the tool life of the insert. Please minimize any variation of pre drilled holes and add an air pass to the first thread pass for safety.

2. Chip evacuation
   If the threading cycle continues whith chips tangled on the holder or in the part it may damage the insert. We suggest starting each thread pass at least 2" from the part to allow room for the coolant to remove chips from the tool on each pass.

< 1 When running the first part of a setup>
Run the program in single block to make sure coolant can remove the chips from the tool after each threading pass.

< 2 When running the second part of a setup>
Run through the full threading cycle and again check that chips are removed from the tool before going into production.



KTN / KTNS / SIN

Workpiece Material	Recommended Insert Grade (Vc sfm)			
	Cermet	PVD Coated Carbide		Carbide
	TC60	**PR930**	**PR1115**	**GW15 (KW10)**
Carbon Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Alloy Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Stainless Steel	☆ 200-260	☆ 200-260	★ 200-260	-
Initial D.O.C. (Radial)	0.0098" or less	0.0098" or less	0.0098" or less	-
Cast Iron	-	-	-	★ 330
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Aluminum	-	-	-	★ 150~400
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Brass	-	-	-	★ 150~300
Initial D.O.C. (Radial)	-	-	-	0.0118" or less

° For 06IR/08IR, please lower it to a figure under 40% of above conditions.

★ : 1st Recommendation ☆ : 2nd Recommendation
- Coolant is recommended.
- When using cermet inserts if edge chipping occurs lightly hone cutting edge with diamond file.
- For stainless steel threading, please set smaller intial D.O.C. and two or three more passes than threading for carbon steel.

Lead Angle of Thread

Thread's Lead Angle β as shown in Fig. 1 decides from the Work Diameter (Pitch Dia.) "D" and Lead "L"(in case of Single-start Thread, it is the same as Pitch "P"). Rolling a right-angled Triangle around a Cylinder and the Angle ACB in Fig. 2 becomes the Lead Angle β. The Calculation Formula is shown as follows.

$$\tan\beta = \frac{L}{DD} = \frac{nP}{\pi D}$$

[β: Lead Angle D: Pitch Dia. n: Number of Thread (such as double-start thread) P: Pitch
L: Lead (In case of single-start thread, it is equal to P. In case of n-start thread, it is equal to nxP)]

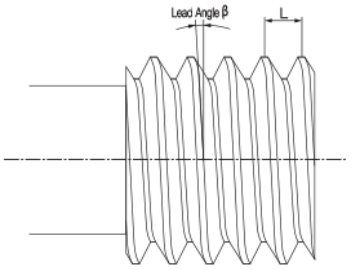


Fig. 1

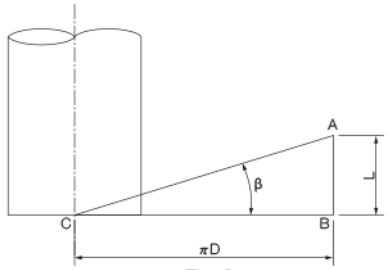


Fig. 2

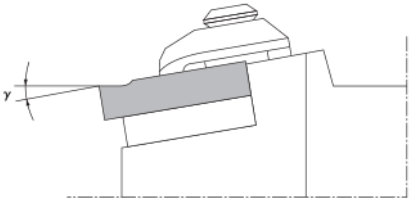


Fig. 3

Relief Angle of Thread

Against this Lead Angle, the Threading Insert needs Side Relief Angle α. TNN type Threading Insert is a negative Insert and it does not prepare the Relief Angle originally. But when installing the Insert on the Toolholder, the Edge Inclination Angle 3 is prepared as shown in Fig. 3, and it generates both the front Relief Angle and the Side Relief Angle α. This Side Relief Angle is obtained by the Formula as follows. (See Fig. 4)

$$\tan\alpha = \tan\gamma \times \tan\left(\frac{\theta}{2}\right)$$

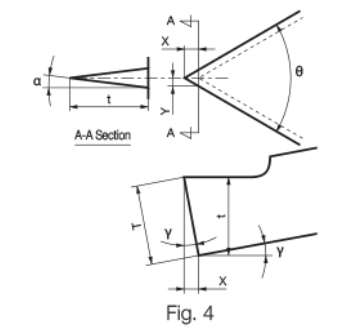


Fig. 4

Symbol	e.g.)
α: Side Relief Angle	
γ: Inclination Angle after Installing Insert	External Insert : 10° Internal Insert : 15°
θ: Insert's Thread Angle	Metric : 60° Tapered Pipe : 55° 30° Trapezoidal : 30°
T: Insert Thickness	

$$\begin{cases} X = T\sin\gamma \\ Y = X\tan(\theta/2) = t\tan\alpha \\ t = T\cos\gamma \end{cases}$$

Table 1

Inserts	Side Relief Angle α	
	External	Internal
60° Thread (M, UN, NPT)	5° 49′	8° 47′
55° Thread (W, G, PT)	5° 14′	7° 56′
30°Trapezoidal (Tr)	2° 43′	5° 7′

See table 1 for the Side Relief Angle depending on the insert.
However, the Side Relief Angle for 1°is set by the toolholder itself, and the actual Side Relief Angle becomes α + 1°.

TTX Type 60°/55° (Partial Profile)

(D.O.C. shows the value of radial ap.)

Thread Type		Pitch mm & TPI	Part Number	rε	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass
Metric	External Threading	0.50mm	TTX32R 6000	0.00	0.38	6	0.10	0.10	0.07	0.05	0.04	0.02						
		0.50mm	6000S	0.00	0.38	6	0.10	0.10	0.07	0.05	0.04	0.02						
		0.50mm	60005	0.05	0.33	5	0.10	0.10	0.07	0.04	0.02							
		0.50mm	60005S	0.05	0.33	5	0.10	0.10	0.07	0.04	0.02							
		0.70mm	TTX32R 6000	0.00	0.53	7	0.10	0.10	0.10	0.08	0.07	0.06	0.02					
		0.70mm	60005	0.05	0.48	6	0.10	0.10	0.10	0.10	0.06	0.02						
		0.75mm	TTX32R 6000	0.00	0.57	8	0.10	0.10	0.10	0.08	0.08	0.05	0.04	0.02				
		0.75mm	60005	0.05	0.52	7	0.10	0.10	0.10	0.08	0.07	0.05	0.02					
		0.80mm	TTX32R 6000	0.00	0.61	8	0.10	0.10	0.10	0.10	0.08	0.06	0.05	0.02				
		0.80mm	60005	0.05	0.56	7	0.10	0.10	0.10	0.10	0.08	0.06	0.02					
		1.00mm	TTX32R 6000	0.00	0.76	8	0.15	0.13	0.12	0.12	0.10	0.08	0.04	0.02				
		1.00mm	60005	0.05	0.71	7	0.18	0.15	0.12	0.10	0.08	0.06	0.02					
		1.00mm	6001	0.10	0.66	6	0.20	0.15	0.12	0.10	0.07	0.02						
		1.25mm	TTX32R 6001	0.10	0.85	7	0.25	0.20	0.13	0.10	0.10	0.05	0.02					
		1.50mm	6001	0.10	1.04	9	0.25	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.02			
		1.75mm	6001	0.10	1.23	10	0.25	0.23	0.20	0.13	0.10	0.10	0.08	0.07	0.05	0.02		
(60°)		2.00mm	6001	0.10	1.42	11	0.25	0.23	0.20	0.16	0.13	0.10	0.10	0.10	0.08	0.05	0.02	0.02
Parallel Pipe	External Threading	28 TPI	TTX32R 5501	0.0039	0.0240	5	0.008	0.007	0.006	0.002	0.001							
		19 TPI	TTX32R 5501	0.0039	0.0374	8	0.008	0.007	0.006	0.005	0.005	0.004	0.002	0.001				
		19 TPI	55015	0.0059	0.0354	7	0.008	0.007	0.006	0.006	0.005	0.003	0.001					
		14 TPI	TTX32R 55015	0.0059	0.0504	10	0.010	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.001		
(55°)		11 TPI	55015	0.0059	0.0657	12	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.001
Whitworth	External Threading	24 TPI	TTX32R 5501	0.0039	0.0287	6	0.008	0.007	0.006	0.005	0.002	0.001						
		20 TPI	TTX32R 5501	0.0039	0.0354	7	0.008	0.007	0.006	0.006	0.005	0.003	0.001					
		20 TPI	TTX32R 55015	0.0059	0.0331	7	0.008	0.007	0.006	0.005	0.004	0.002	0.001					
		18 TPI	TTX32R 55015	0.0059	0.0374	8	0.008	0.007	0.006	0.006	0.005	0.004	0.002	0.001				
		16 TPI	55015	0.0059	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.002	0.001			
		14 TPI	55015	0.0059	0.0504	10	0.010	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.001		
		12 TPI	55015	0.0059	0.0598	11	0.010	0.008	0.007	0.006	0.006	0.006	0.006	0.005	0.004	0.002	0.001	
(55°)		11 TPI	55015	0.0059	0.0657	12	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.001

<How to use>

1) Select the insert with suitable corner-R (rε) determined by the pitch.
2) Do not exceed 0.0118" for the 1st D.O.C.
3) Final D.O.C. for Finishing shall be 0.0008" - 0.0020".
4) Pre chamfer thread diameter to thread minor diameter to improve insert life.
5) Coolant is recommended.

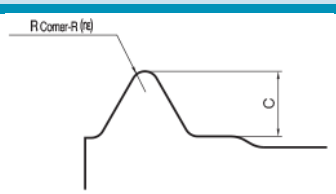
TTX Type

Suitable for threading to the shoulder.

Insert Part Number \ Thread Type		Metric (mm)	Unified TPI	Parallel Pipe TPI	Whitworth TPI
TTX32R	6000	0.5~1.0	56~32	-	-
	60005	0.5~1.0	48~32	-	-
	6001	1.0~2.0	28~14	-	-
TTX32R	6000S	0.5	56~48	-	-
	60005S	0.5	48	-	-
TTX32R	5501	-	-	28~19	24~20
	55015	-	-	19~11	20~14

◆ Usage caution for Full Profile insert.

1) Max.ap is based on the value of C+0.0020"-C+0.0031".
2) Final D.O.C. for Finishing shall be 0.0008"-0.0020".
3) Pre chamfer thread diameter to thread minor diameter to improve insert life.
4) Coolant is recommended.



(D.O.C. shows the value of radial D.O.C.)

■ 11 / 16 Type (Full Profile)

Thread Type		Pitch	Part Number		C	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass
		mm & TPI																			
Metric	External Threading	1.00mm	16E✓	100ISO-TF	0.64	0.72	5	0.23	0.19	0.15	0.10	0.05									
		1.25mm		125ISO-TF	0.80	0.88	6	0.26	0.21	0.16	0.12	0.08	0.05								
		1.50mm		150ISO-TF	0.95	1.03	6	0.26	0.24	0.21	0.16	0.11	0.05								
		1.75mm		175ISO-TF	1.11	1.19	8	0.26	0.22	0.19	0.16	0.13	0.10	0.08	0.05						
		2.00mm		200ISO-TF	1.27	1.35	10	0.26	0.21	0.18	0.16	0.14	0.12	0.10	0.08	0.05	0.05				
		2.50mm		250ISO-TF	1.57	1.65	12	0.26	0.23	0.21	0.18	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.05		
		3.00mm		300ISO-TF	1.87	1.95	14	0.26	0.24	0.22	0.20	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.05	0.02
		0.50mm	16E✓	050ISO	0.33	0.38	4	0.14	0.12	0.08	0.04										
		0.75mm		075ISO	0.48	0.53	5	0.17	0.14	0.10	0.08	0.04									
		1.00mm		100ISO	0.64	0.72	5	0.23	0.19	0.15	0.10	0.05									
		1.25mm		125ISO	0.80	0.88	6	0.26	0.21	0.16	0.12	0.08	0.05								
		1.50mm		150ISO	0.95	1.03	6	0.26	0.24	0.21	0.16	0.11	0.05								
		2.00mm		200ISO	1.27	1.35	10	0.26	0.21	0.18	0.16	0.14	0.12	0.10	0.08	0.05	0.05				
		2.50mm		250ISO	1.57	1.65	12	0.26	0.23	0.21	0.18	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.05		
	Internal Threading	1.00mm	11I✓	100ISO-TF	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04									
		1.25mm		125ISO-TF	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04							
		1.50mm		150ISO-TF	0.88	0.96	8	0.24	0.18	0.14	0.10	0.10	0.08	0.07	0.05						
		1.75mm		175ISO-TF	1.02	1.10	9	0.24	0.18	0.16	0.14	0.10	0.10	0.08	0.05	0.05					
		0.50mm	11I✓	050ISO	0.31	0.36	4	0.14	0.10	0.08	0.04										
		0.75mm		075ISO	0.45	0.50	5	0.15	0.14	0.10	0.07	0.04									
		1.00mm		100ISO	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04									
		1.25mm		125ISO	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04							
		1.50mm		150ISO	0.88	0.96	8	0.24	0.18	0.14	0.10	0.10	0.08	0.07	0.05						
		1.75mm		175ISO	1.02	1.10	9	0.24	0.18	0.16	0.14	0.10	0.10	0.08	0.05	0.05					
		2.00mm		200ISO	1.18	1.26	10	0.24	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05				
		1.00mm	16I✓	100ISO-TF	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04									
		1.25mm		125ISO-TF	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04							
		1.50mm		150ISO-TF	0.88	0.96	8	0.22	0.18	0.14	0.12	0.10	0.08	0.07	0.05						
		1.75mm		175ISO-TF	1.02	1.10	9	0.22	0.18	0.16	0.14	0.12	0.10	0.08	0.05	0.05					
		2.00mm		200ISO-TF	1.18	1.26	10	0.24	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05				
		2.50mm		250ISO-TF	1.46	1.54	12	0.26	0.22	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.05	0.05		
		3.00mm		300ISO-TF	1.76	1.84	14	0.26	0.24	0.21	0.18	0.16	0.15	0.13	0.12	0.10	0.10	0.07	0.05	0.05	0.02
		1.00mm	16I✓	100ISO	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04									
		1.25mm		125ISO	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04							
		1.50mm		150ISO	0.88	0.96	8	0.22	0.18	0.14	0.12	0.10	0.08	0.07	0.05						
		2.00mm		200ISO	1.18	1.26	10	0.24	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05				
		2.50mm		250ISO	1.46	1.54	12	0.26	0.22	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.05	0.05		
		3.00mm		300ISO	1.76	1.84	14	0.26	0.24	0.21	0.18	0.16	0.15	0.13	0.12	0.10	0.10	0.07	0.05	0.05	0.02
Unified	External Threading	24 TPI	16E✓	24UN-TF	0.0264	0.0295	5	0.009	0.008	0.006	0.004	0.002									
		20 TPI		20UN-TF	0.0315	0.0346	6	0.009	0.008	0.006	0.005	0.004	0.002								
		18 TPI		18UN-TF	0.0350	0.0382	6	0.010	0.009	0.007	0.006	0.004	0.002								
		16 TPI		16UN-TF	0.0398	0.0429	7	0.010	0.009	0.007	0.006	0.005	0.004	0.002							
		14 TPI		14UN-TF	0.0453	0.0484	8	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.002						
		13 TPI		13UN-TF	0.0488	0.0520	9	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.003	0.002					
		12 TPI		12UN-TF	0.0528	0.0559	11	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002			
		10 TPI		10UN-TF	0.0626	0.0657	12	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.002		
		8 TPI		08UN-TF	0.0780	0.0811	14	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.002
		24 TPI	16E✓	24UN	0.0264	0.0295	5	0.009	0.008	0.006	0.004	0.002									
		20 TPI		20UN	0.0315	0.0346	6	0.009	0.008	0.006	0.005	0.004	0.002								
		18 TPI		18UN	0.0350	0.0382	6	0.010	0.009	0.007	0.006	0.004	0.002								
		16 TPI		16UN	0.0398	0.0429	7	0.010	0.009	0.007	0.006	0.005	0.004	0.002							
		14 TPI		14UN	0.0453	0.0484	8	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.002						
		12 TPI		12UN	0.0528	0.0559	11	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002			
	Internal Threading	24 TPI	16I✓	24UN-TF	0.0244	0.0276	5	0.009	0.008	0.006	0.004	0.002									
		20 TPI		20UN-TF	0.0295	0.0327	6	0.009	0.008	0.006	0.005	0.003	0.002								
		18 TPI		18UN-TF	0.0327	0.0358	6	0.009	0.008	0.007	0.006	0.004	0.002								
		16 TPI		16UN-TF	0.0370	0.0402	7	0.009	0.008	0.007	0.006	0.004	0.004	0.002							
		14 TPI		14UN-TF	0.0421	0.0453	8	0.009	0.009	0.007	0.006	0.005	0.004	0.004	0.002						
		13 TPI		13UN-TF	0.0453	0.0484	9	0.009	0.009	0.007	0.006	0.005	0.004	0.004	0.003	0.002					
		12 TPI		12UN-TF	0.0488	0.0520	11	0.009	0.009	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002			
		10 TPI		10UN-TF	0.0583	0.0614	12	0.009	0.009	0.008	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.002		
		8 TPI		08UN-TF	0.0732	0.0764	14	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.002
		24 TPI	16I✓	24UN	0.0244	0.0276	5	0.009	0.008	0.006	0.004	0.002									
		20 TPI		20UN	0.0295	0.0327	6	0.009	0.008	0.006	0.005	0.003	0.002								
		18 TPI		18UN	0.0327	0.0358	6	0.009	0.007	0.006	0.006	0.004	0.002								
		16 TPI		16UN	0.0370	0.0402	7	0.009	0.008	0.007	0.006	0.004	0.004	0.002							
		14 TPI		14UN	0.0421	0.0453	8	0.009	0.009	0.007	0.006	0.005	0.004	0.004	0.002						
		12 TPI		12UN	0.0488	0.0520	11	0.009	0.009	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002			

11 / 16 Type (Full Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch TPI	Part Number		C	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass
Parallel Pipe	External Threading	19.0 TPI	16E℄	19W-TF	0.0350	0.0382	6	0.011	0.009	0.007	0.006	0.004	0.002										
		14.0 TPI		14W-TF	0.0469	0.0500	9	0.011	0.009	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11.0 TPI		11W-TF	0.0591	0.0622	12	0.011	0.009	0.007	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
	Internal Threading	19.0 TPI	16I℄	19W-TF	0.0346	0.0378	6	0.010	0.008	0.008	0.006	0.004	0.002										
		14.0 TPI		14W-TF	0.0469	0.0500	9	0.011	0.009	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11.0 TPI		11W-TF	0.0591	0.0622	12	0.011	0.009	0.007	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
Whitworth	External Threading	16.0 TPI	16E℄	16W-TF	0.0413	0.0445	8	0.010	0.008	0.007	0.006	0.005	0.003	0.003	0.002								
		14.0 TPI		14W-TF	0.0469	0.0500	9	0.011	0.009	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11.0 TPI		11W-TF	0.0591	0.0622	12	0.011	0.009	0.007	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
	Internal Threading	16.0 TPI	16I℄	16W-TF	0.0413	0.0445	8	0.010	0.008	0.007	0.006	0.005	0.003	0.003	0.002								
		14.0 TPI		14W-TF	0.0469	0.0500	9	0.011	0.009	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11.0 TPI		11W-TF	0.0591	0.0622	12	0.011	0.009	0.007	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
Tapered Pipe	External Threading	28.0 TPI	16E℄	28BSPT-TF	0.0228	0.0248	5	0.008	0.006	0.005	0.004	0.002											
		19.0 TPI		19BSPT-TF	0.0339	0.0370	6	0.010	0.008	0.007	0.006	0.004	0.002										
		14.0 TPI		14BSPT-TF	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11.0 TPI		11BSPT-TF	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002				
		28.0 TPI	16E℄	28BSPT	0.0228	0.0248	5	0.008	0.006	0.005	0.004	0.002											
		19.0 TPI		19BSPT	0.0339	0.0370	6	0.010	0.008	0.007	0.006	0.004	0.002										
		14.0 TPI		14BSPT	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11.0 TPI		11BSPT	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002				
	Internal Threading	28.0 TPI	11I℄	28BSPT-TF	0.0228	0.0248	5	0.008	0.006	0.005	0.004	0.002											
		19.0 TPI		19BSPT-TF	0.0339	0.0370	7	0.009	0.008	0.007	0.006	0.004	0.002	0.002									
		14.0 TPI		14BSPT-TF	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		28.0 TPI	11I℄	28BSPT	0.0228	0.0248	5	0.008	0.006	0.005	0.004	0.002											
		19.0 TPI		19BSPT	0.0339	0.0370	7	0.009	0.008	0.007	0.006	0.004	0.002	0.002									
		14.0 TPI		14BSPT	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		14.0 TPI	16I℄	14BSPT-TF	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11.0 TPI		11BSPT-TF	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002				
		14.0 TPI	16I℄	14BSPT	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11.0 TPI		11BSPT	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002				
American National Pipe	External Threading	18.0 TPI	16E℄	18NPT	0.0449	0.0480	13	0.008	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.001			
		14.0 TPI		14NPT	0.0575	0.0606	15	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.002	0.001	
		11.5 TPI		11.5NPT	0.0697	0.0728	16	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.001
	Internal Threading	18.0 TPI	16I℄	18NPT	0.0449	0.0480	13	0.008	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.001			
		14.0 TPI		14NPT	0.0575	0.0606	15	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.002	0.001	
		11.5 TPI		11.5NPT	0.0697	0.0728	16	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.001

60° • 55° (Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch mm	Part Number		rε	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass
Metric	External Threading	0.50mm	16ER	A60-TF	0.06	0.33	5	0.10	0.08	0.07	0.05	0.03										
		0.50mm		AG60-TF	0.06	0.33	5	0.10	0.08	0.07	0.05	0.03										
		0.75mm	16ER	A60-TF	0.06	0.51	6	0.14	0.11	0.09	0.07	0.06	0.04									
		0.75mm		AG60-TF	0.06	0.51	6	0.14	0.11	0.09	0.07	0.06	0.04									
		1.00mm	16ER	A60-TF	0.06	0.70	7	0.18	0.13	0.12	0.09	0.08	0.06	0.04								
		1.00mm		AG60-TF	0.06	0.70	7	0.18	0.13	0.12	0.09	0.08	0.06	0.04								
		1.25mm	16ER	A60-TF	0.06	0.89	8	0.18	0.15	0.14	0.12	0.10	0.08	0.07	0.05							
		1.25mm		AG60-TF	0.06	0.89	8	0.18	0.15	0.14	0.12	0.10	0.08	0.07	0.05							
		1.50mm	16ER	A60-TF	0.06	1.08	9	0.21	0.17	0.16	0.14	0.11	0.09	0.08	0.07	0.05						
		1.50mm		AG60-TF	0.06	1.08	9	0.21	0.17	0.16	0.14	0.11	0.09	0.08	0.07	0.05						
		1.75mm	16ER	G60-TF	0.22	1.11	8	0.24	0.20	0.18	0.16	0.13	0.10	0.06	0.04							
		1.75mm		AG60-TF	0.06	1.27	11	0.22	0.20	0.18	0.13	0.11	0.09	0.09	0.08	0.07	0.06	0.04				
		2.00mm	16ER	G60-TF	0.22	1.30	10	0.24	0.20	0.18	0.16	0.14	0.12	0.09	0.07	0.06	0.04					
		2.00mm		AG60-TF	0.06	1.46	11	0.25	0.22	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.06	0.04				
		2.50mm	16ER	G60-TF	0.22	1.67	12	0.25	0.22	0.20	0.18	0.16	0.14	0.12	0.12	0.10	0.08	0.06	0.04			
		2.50mm		AG60-TF	0.06	1.84	13	0.25	0.22	0.20	0.19	0.17	0.16	0.14	0.11	0.10	0.09	0.09	0.07	0.05		
		3.00mm	16ER	G60-TF	0.22	2.05	14	0.25	0.23	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.09	0.07	0.05	
		3.00mm		AG60-TF	0.06	2.22	15	0.27	0.25	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.12	0.11	0.10	0.09	0.08	0.05
		0.50mm	16ER	A60	0.06	0.33	5	0.10	0.08	0.07	0.05	0.03										
		0.50mm		AG60	0.06	0.33	5	0.10	0.08	0.07	0.05	0.03										
		0.75mm	16ER	A60	0.06	0.51	6	0.14	0.11	0.09	0.07	0.06	0.04									
		0.75mm		AG60	0.06	0.51	6	0.14	0.11	0.09	0.07	0.06	0.04									
		1.00mm	16ER	A60	0.06	0.70	7	0.18	0.13	0.12	0.09	0.08	0.06	0.04								
		1.00mm		AG60	0.06	0.70	7	0.18	0.13	0.12	0.09	0.08	0.06	0.04								
		1.25mm	16ER	A60	0.06	0.89	8	0.18	0.15	0.14	0.12	0.10	0.08	0.07	0.05							
		1.25mm		AG60	0.06	0.89	8	0.18	0.15	0.14	0.12	0.10	0.08	0.07	0.05							
		1.50mm	16ER	A60	0.06	1.08	9	0.21	0.17	0.16	0.14	0.11	0.09	0.08	0.07	0.05						
		1.50mm		AG60	0.06	1.08	9	0.21	0.17	0.16	0.14	0.11	0.09	0.08	0.07	0.05						
		1.75mm	16ER	G60	0.22	1.11	8	0.24	0.20	0.18	0.16	0.13	0.10	0.06	0.04							
		1.75mm		AG60	0.06	1.27	11	0.22	0.20	0.18	0.13	0.11	0.09	0.09	0.08	0.07	0.06	0.04				
		2.00mm	16ER	G60	0.22	1.30	10	0.24	0.20	0.18	0.16	0.14	0.12	0.09	0.07	0.06	0.04					
		2.00mm		AG60	0.06	1.46	11	0.25	0.22	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.06	0.04				
		2.50mm	16ER	G60	0.22	1.67	12	0.25	0.22	0.20	0.18	0.16	0.14	0.12	0.12	0.10	0.08	0.06	0.04			
		2.50mm		AG60	0.06	1.84	13	0.25	0.22	0.20	0.19	0.17	0.16	0.14	0.11	0.10	0.09	0.09	0.07	0.05		
		3.00mm	16ER	G60	0.22	2.05	14	0.25	0.23	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.09	0.07	0.05	
		3.00mm		AG60	0.06	2.22	15	0.27	0.25	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.12	0.11	0.10	0.09	0.08	0.05

60° • 55° (Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch mm & TPI	Part Number		rε	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass
Metric	Internal Threading	0.75mm	06IR	60005	0.05	0.44	10	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.03										
		1.00mm	06IR	60005	0.05	0.60	12	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.03								
		1.00mm	08IR	60007	0.07	0.58	12	0.07	0.06	0.06	0.06	0.06	0.05	0.04	0.04	0.04	0.04	0.03	0.03								
		1.25mm	06IR	60005	0.05	0.76	14	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.03						
		1.25mm	08IR	60007	0.07	0.74	14	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03						
		1.50mm	08IR	60007	0.07	0.90	17	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03			
		1.75mm		60007	0.07	1.07	19	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	0.04	0.03
		0.50mm	11IR	A60	0.02	0.30	5	0.08	0.07	0.06	0.05	0.04														
		1.00mm		A60	0.02	0.63	6	0.16	0.14	0.12	0.10	0.07	0.04													
		1.50mm		A60	0.02	0.95	9	0.18	0.16	0.13	0.12	0.10	0.08	0.08	0.06	0.04										
		0.50mm	16IR	A60	0.02	0.30	5	0.08	0.07	0.06	0.05	0.04														
		0.50mm		AG60	0.02	0.30	5	0.08	0.07	0.06	0.05	0.04														
		0.75mm	16IR	A60	0.02	0.47	6	0.12	0.10	0.08	0.07	0.06	0.04													
		0.75mm		AG60	0.02	0.47	6	0.12	0.10	0.08	0.07	0.06	0.04													
		1.00mm	16IR	A60	0.02	0.63	6	0.16	0.14	0.12	0.10	0.07	0.04													
		1.00mm		AG60	0.02	0.63	6	0.16	0.14	0.12	0.10	0.07	0.04													
		1.25mm	16IR	A60	0.02	0.79	7	0.16	0.15	0.14	0.13	0.10	0.07	0.04												
		1.25mm		AG60	0.02	0.79	7	0.16	0.15	0.14	0.13	0.10	0.07	0.04												
		1.50mm	16IR	A60	0.02	0.95	9	0.18	0.16	0.13	0.12	0.10	0.08	0.08	0.06	0.04										
		1.50mm		AG60	0.02	0.95	9	0.18	0.16	0.13	0.12	0.10	0.08	0.08	0.06	0.04										
		1.75mm	16IR	G60	0.11	1.03	9	0.20	0.17	0.15	0.13	0.11	0.10	0.08	0.05	0.04										
		1.75mm		AG60	0.02	1.12	10	0.20	0.18	0.16	0.13	0.12	0.10	0.08	0.06	0.05	0.04									
		2.00mm	16IR	G60	0.11	1.19	10	0.20	0.18	0.17	0.15	0.13	0.11	0.08	0.07	0.06	0.04									
		2.00mm		AG60	0.02	1.28	12	0.20	0.17	0.15	0.13	0.12	0.11	0.10	0.09	0.07	0.06	0.04	0.04							
		2.50mm	16IR	G60	0.11	1.51	14	0.20	0.18	0.16	0.14	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.05	0.04	0.02					
		2.50mm		AG60	0.02	1.6	16	0.20	0.18	0.16	0.14	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.05	0.05	0.04	0.04	0.02			
		3.00mm	16IR	G60	0.11	1.84	16	0.20	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.12	0.10	0.10	0.08	0.07	0.06	0.04	0.02			
		3.00mm		AG60	0.02	1.93	18	0.20	0.18	0.17	0.16	0.15	0.14	0.13	0.13	0.12	0.10	0.10	0.08	0.07	0.06	0.05	0.04	0.03	0.02	
Unified	External Threading	48 TPI	16ER	A60-TF	0.0024	0.0138	5	0.004	0.003	0.003	0.002	0.002														
		48 TPI		AG60-TF	0.0024	0.0138	5	0.004	0.003	0.003	0.002	0.002														
		24 TPI	16ER	A60-TF	0.0024	0.0295	7	0.007	0.006	0.005	0.004	0.003	0.003	0.002												
		24 TPI		AG60-TF	0.0024	0.0295	7	0.007	0.006	0.005	0.004	0.003	0.003	0.002												
		20 TPI	16ER	A60-TF	0.0024	0.0358	8	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002											
		20 TPI		AG60-TF	0.0024	0.0358	8	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002											
		18 TPI	16ER	A60-TF	0.0024	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002											
		18 TPI		AG60-TF	0.0024	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002											
		16 TPI	16ER	A60-TF	0.0024	0.0453	10	0.009	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002									
		16 TPI		AG60-TF	0.0024	0.0453	10	0.009	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002									
		14 TPI	16ER	G60-TF	0.0087	0.0453	9	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002										
		14 TPI		AG60-TF	0.0024	0.0520	11	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002								
		13 TPI	16ER	G60-TF	0.0087	0.0496	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002										
		13 TPI		AG60-TF	0.0024	0.0563	11	0.010	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		12 TPI	16ER	G60-TF	0.0087	0.0543	10	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002									
		12 TPI		AG60-TF	0.0024	0.0610	12	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002							
		10 TPI	16ER	G60-TF	0.0087	0.0673	12	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002							
		10 TPI		AG60-TF	0.0024	0.0736	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002						
		9 TPI	16ER	G60-TF	0.0087	0.0756	13	0.011	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002						
		9 TPI		AG60-TF	0.0024	0.0819	14	0.011	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002					
		8 TPI	16ER	G60-TF	0.0087	0.0862	15	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.002				
		8 TPI		AG60-TF	0.0024	0.0925	16	0.012	0.010	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002			
		48 TPI	16ER	A60	0.0024	0.0138	5	0.004	0.003	0.003	0.002	0.002														
		48 TPI		AG60	0.0024	0.0138	5	0.004	0.003	0.003	0.002	0.002														
		24 TPI	16ER	A60	0.0024	0.0295	7	0.007	0.006	0.005	0.004	0.003	0.003	0.002												
		24 TPI		AG60	0.0024	0.0295	7	0.007	0.006	0.005	0.004	0.003	0.003	0.002												
		20 TPI	16ER	A60	0.0024	0.0358	8	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002											
		20 TPI		AG60	0.0024	0.0358	8	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002											
		18 TPI	16ER	A60	0.0024	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002											
		18 TPI		AG60	0.0024	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002											
		16 TPI	16ER	A60	0.0024	0.0453	10	0.009	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002									
		16 TPI		AG60	0.0024	0.0453	10	0.009	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002									
		14 TPI	16ER	G60	0.0087	0.0453	9	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002										
		14 TPI		AG60	0.0024	0.0520	11	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002								
		13 TPI	16ER	G60	0.0087	0.0496	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002										
		13 TPI		AG60	0.0024	0.0563	11	0.010	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		12 TPI	16ER	G60	0.0087	0.0543	10	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002									
		12 TPI		AG60	0.0024	0.0610	12	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002							
		10 TPI	16ER	G60	0.0087	0.0673	12	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002							
		10 TPI		AG60	0.0024	0.0736	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002						
		9 TPI	16ER	G60	0.0087	0.0756	13	0.011	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002						
		9 TPI		AG60	0.0024	0.0819	14	0.011	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002					
		8 TPI	16ER	G60	0.0087	0.0862	15	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.002				
		8 TPI		AG60	0.0024	0.0925	16	0.012	0.010	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002			
	Internal Threading	28 TPI	06IR	60005	0.0020	0.0213	12	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001							
		24 TPI		60005	0.0020	0.0252	12	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001							
		20 TPI	06IR	60005	0.0020	0.0303	14	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001					
		20 TPI	08IR	60007	0.0028	0.0295	14	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001					

60° • 55° (Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch TPI	Part Number	rε	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass
Unified	Internal Threading	18 TPI	08IR 60007	0.0028	0.0335	17	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001		
		16 TPI	08IR 60007	0.0028	0.0378	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	
		48 TPI	11IR A60	0.0008	0.0126	5	0.003	0.003	0.003	0.002	0.002														
		24 TPI	A60	0.0008	0.0264	7	0.006	0.005	0.005	0.004	0.003	0.002	0.002												
		20 TPI	A60	0.0008	0.0315	8	0.006	0.005	0.005	0.005	0.004	0.003	0.002	0.002											
		18 TPI	A60	0.0008	0.0354	9	0.006	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002										
		16 TPI	A60	0.0008	0.0398	10	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	0.002	0.002									
		48 TPI	16IR A60	0.0008	0.0126	5	0.003	0.003	0.003	0.002	0.002														
		48 TPI	AG60	0.0008	0.0126	5	0.003	0.003	0.003	0.002	0.002														
		24 TPI	16IR A60	0.0008	0.0264	7	0.006	0.005	0.005	0.004	0.003	0.002	0.002												
		24 TPI	AG60	0.0008	0.0264	7	0.006	0.005	0.005	0.004	0.003	0.002	0.002												
		20 TPI	16IR A60	0.0008	0.0315	8	0.006	0.005	0.005	0.005	0.004	0.003	0.002	0.002											
		20 TPI	AG60	0.0008	0.0315	8	0.006	0.005	0.005	0.005	0.004	0.003	0.002	0.002											
		18 TPI	16IR A60	0.0008	0.0354	9	0.006	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002										
		18 TPI	AG60	0.0008	0.0354	9	0.006	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002										
		16 TPI	16IR A60	0.0008	0.0398	10	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	0.002	0.002									
		16 TPI	AG60	0.0008	0.0398	10	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	0.002	0.002									
		14 TPI	16IR G60	0.0043	0.0421	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002										
		14 TPI	AG60	0.0008	0.0457	11	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002								
		13 TPI	16IR G60	0.0043	0.0457	10	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002	0.002									
		13 TPI	AG60	0.0008	0.0492	12	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002	0.002							
		12 TPI	16IR G60	0.0043	0.0496	11	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.002	0.002								
		12 TPI	AG60	0.0008	0.0531	13	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002	0.002	0.002						
		10 TPI	16IR G60	0.0043	0.0606	14	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.002	0.002	0.001					
		10 TPI	AG60	0.0008	0.0642	16	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.002	0.002	0.002	0.002	0.001			
		9 TPI	16IR G60	0.0043	0.0677	16	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.001			
		9 TPI	AG60	0.0008	0.0713	17	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.001		
		8 TPI	16IR G60	0.0043	0.0768	17	0.009	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.001		
		8 TPI	AG60	0.0008	0.0803	19	0.008	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002	0.002	0.002	0.001	0.001
Parallel Pipe /Tapered Pipe	External Threading	28 TPI	16ER A55-TF	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
		28 TPI	AG55-TF	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
		19 TPI	16ER A55-TF	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
		19 TPI	AG55-TF	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
		14 TPI	16ER G55-TF	0.0087	0.0472	9	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002										
		14 TPI	AG55-TF	0.0024	0.0551	11	0.009	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		11 TPI	16ER G55-TF	0.0087	0.0630	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002							
		11 TPI	AG55-TF	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001						
		28 TPI	16ER A55	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
		28 TPI	AG55	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
		19 TPI	16ER A55	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
		19 TPI	AG55	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
		14 TPI	16ER G55	0.0087	0.0472	9	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002										
		14 TPI	AG55	0.0024	0.0551	11	0.009	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		11 TPI	16ER G55	0.0087	0.0630	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002							
		11 TPI	AG55	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001						
	Internal Threading	28 TPI	06IR 5501	0.0039	0.0240	12	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001							
		28 TPI	08IR 5501	0.0039	0.0240	12	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001							
		19 TPI	08IR 5501	0.0039	0.0374	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	
		28 TPI	11IR A55	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
		19 TPI	11IR A55	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
		28 TPI	16IR A55	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
		28 TPI	AG55	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
		19 TPI	16IR A55	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
		19 TPI	AG55	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
		14 TPI	16IR G55	0.0087	0.0472	9	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002										
		14 TPI	AG55	0.0024	0.0551	11	0.009	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		11 TPI	16IR G55	0.0087	0.0630	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002							
		11 TPI	AG55	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001						
Whitworth	External Threading	48 TPI	16ER A55-TF	0.0024	0.0146	5	0.005	0.004	0.003	0.002	0.002														
		48 TPI	AG55-TF	0.0024	0.0146	5	0.005	0.004	0.003	0.002	0.002														
		24 TPI	16ER A55-TF	0.0024	0.0311	7	0.007	0.006	0.006	0.004	0.003	0.003	0.002												
		24 TPI	AG55-TF	0.0024	0.0311	7	0.007	0.006	0.006	0.004	0.003	0.003	0.002												
		20 TPI	16ER A55-TF	0.0024	0.0378	8	0.008	0.007	0.006	0.005	0.004	0.003	0.003	0.002											
		20 TPI	AG55-TF	0.0024	0.0378	8	0.008	0.007	0.006	0.005	0.004	0.003	0.003	0.002											
		18 TPI	16ER A55-TF	0.0024	0.0421	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002										
		18 TPI	AG55-TF	0.0024	0.0421	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002										
		16 TPI	16ER A55-TF	0.0024	0.0480	11	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002								
		16 TPI	AG55-TF	0.0024	0.0480	11	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002								
		14 TPI	16ER G55-TF	0.0087	0.0472	9	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002										
		14 TPI	AG55-TF	0.0024	0.0551	11	0.009	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		12 TPI	16ER G55-TF	0.0087	0.0567	10	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002									
		12 TPI	AG55-TF	0.0024	0.0646	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002							
		11 TPI	16ER G55-TF	0.0087	0.0630	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002							
		11 TPI	AG55-TF	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001						
		10 TPI	16ER G55-TF	0.0087	0.0701	12	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002							
		10 TPI	AG55-TF	0.0024	0.0780	14	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002					
		9 TPI	16ER G55-TF	0.0087	0.0791	14	0.009	0.009	0.008	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002					
		9 TPI	AG55-TF	0.0024	0.0866	15	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.002				
		8 TPI	16ER G55-TF	0.0087	0.0902	15	0.011	0.010	0.009	0.009	0.008	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.002				
		8 TPI	AG55-TF	0.0024	0.0980	16	0.012	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002			
		48 TPI	16ER A55	0.0024	0.0146	5	0.005	0.004	0.003	0.002	0.002														
		48 TPI	AG55	0.0024	0.0146	5	0.005	0.004	0.003	0.002	0.002														

60° • 55° (Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch mm & TPI	Part Number	rε	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass
Whitworth	External Threading	24 TPI	16ER A55	0.0024	0.0311	7	0.007	0.006	0.006	0.004	0.003	0.003	0.002									
		24 TPI	AG55	0.0024	0.0311	7	0.007	0.006	0.006	0.004	0.003	0.003	0.002									
		20 TPI	16ER A55	0.0024	0.0378	8	0.008	0.007	0.006	0.005	0.004	0.003	0.003	0.002								
		20 TPI	AG55	0.0024	0.0378	8	0.008	0.007	0.006	0.005	0.004	0.003	0.003	0.002								
		18 TPI	16ER A55	0.0024	0.0421	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002							
		18 TPI	AG55	0.0024	0.0421	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002							
		16 TPI	16ER A55	0.0024	0.0480	11	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002					
		16 TPI	AG55	0.0024	0.0480	11	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002					
		14 TPI	16ER G55	0.0087	0.0472	9	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002							
		14 TPI	AG55	0.0024	0.0551	11	0.009	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002					
		12 TPI	16ER G55	0.0087	0.0567	10	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002						
		12 TPI	AG55	0.0024	0.0646	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002				
		11 TPI	16ER G55	0.0087	0.0630	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002				
		11 TPI	AG55	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001			
		10 TPI	16ER G55	0.0087	0.0701	12	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002				
		10 TPI	AG55	0.0024	0.0780	14	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002		
		9 TPI	16ER G55	0.0087	0.0791	14	0.009	0.009	0.008	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002		
		9 TPI	AG55	0.0024	0.0866	15	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.002	
		8 TPI	16ER G55	0.0087	0.0902	15	0.011	0.010	0.009	0.009	0.008	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.002	
		8 TPI	AG55	0.0024	0.0980	16	0.012	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002
	Internal Threading	28 TPI	06IR 5501	0.0039	0.0256	13	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001			
		28 TPI	08IR 5501	0.0039	0.0256	13	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001			
		19 TPI	08IR 5501	0.0039	0.0319	15	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	
		24 TPI	11IR A55	0.0024	0.0283	7	0.006	0.006	0.005	0.004	0.003	0.003	0.002									
		20 TPI	A55	0.0024	0.0343	8	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002								
		18 TPI	A55	0.0024	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002								
		16 TPI	A55	0.0024	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002							
		24 TPI	16IR A55	0.0024	0.0283	7	0.006	0.006	0.005	0.004	0.003	0.003	0.002									
		24 TPI	AG55	0.0024	0.0283	7	0.006	0.006	0.005	0.004	0.003	0.003	0.002									
		20 TPI	16IR A55	0.0024	0.0343	8	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002								
		20 TPI	AG55	0.0024	0.0343	8	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002								
		18 TPI	16IR A55	0.0024	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002								
		18 TPI	AG55	0.0024	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002								
		16 TPI	16IR A55	0.0024	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002							
		16 TPI	AG55	0.0024	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002							
		14 TPI	16IR G55	0.0087	0.0417	8	0.008	0.008	0.007	0.006	0.005	0.004	0.003	0.002								
		14 TPI	AG55	0.0024	0.0500	11	0.008	0.007	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002					
		12 TPI	16IR G55	0.0087	0.0504	9	0.009	0.008	0.008	0.007	0.006	0.005	0.004	0.003	0.002							
		12 TPI	AG55	0.0024	0.0583	11	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.002	0.002	0.002					
		11 TPI	16IR G55	0.0087	0.0559	10	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002						
		11 TPI	AG55	0.0024	0.0638	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002	0.002				
		10 TPI	16IR G55	0.0087	0.0626	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002				
		10 TPI	AG55	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001			
		9 TPI	16IR G55	0.0087	0.0705	12	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002				
		9 TPI	AG55	0.0024	0.0783	14	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002		
		8 TPI	16IR G55	0.0087	0.0807	14	0.009	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002		
		8 TPI	AG55	0.0024	0.0886	15	0.011	0.01	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.002	
30° Trapezoidal	External Threading	2.00mm	16ER 200TR	-	1.25	10	0.22	0.20	0.17	0.16	0.13	0.12	0.10	0.07	0.05	0.03						
		3.00mm	16ER 300TR	-	1.75	14	0.24	0.20	0.18	0.16	0.15	0.14	0.12	0.11	0.10	0.10	0.10	0.07	0.05	0.03		
	Internal Threading	2.00mm	16IR 200TR	-	1.25	10	0.22	0.20	0.17	0.16	0.13	0.12	0.10	0.07	0.05	0.03						
		3.00mm	16IR 300TR	-	1.75	14	0.24	0.20	0.18	0.16	0.15	0.14	0.12	0.11	0.10	0.10	0.10	0.07	0.05	0.03		

Corner-R (rε) Selection for Partial Profiling Inserts

	External Threading	Internal Threading
Metric Unified	rε ≦0.1443P	rε ≦0.0720P
Parallel Pipe Whitworth Tapered Pipe	For Both External and Internal Thread rε ≦0.1373P	

• Metric, Unified Thread

Corner-R (rε) at Internal Threading is almost half of that of External.

• Parallel Pipe, Tapered Pipe, Whitworth Thread

Same Corner-R (rε) for both External and Internal Threading.

rε : Corner-R P : Pitch ($= \frac{25.4}{n}$) n : TPI

11 / 16 Type 60°/ 55° (Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch mm & TPI	Part Number	Part Number	rε	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass
Metric (60°)	External Threading	1.00mm	16E®% 6001	TNN32E®% 6001	0.10	0.66	5	0.20	0.18	0.12	0.09	0.05									
		1.25mm	16E®% 6001	TNN32E®% 6001	0.10	0.85	6	0.23	0.20	0.14	0.12	0.07	0.05								
		1.50mm	16E®% 6001	TNN32E®% 6001	0.10	1.04	8	0.23	0.21	0.19	0.15	0.11	0.06	0.05	0.04						
		1.50mm	6002	6002	0.20	0.94	7	0.23	0.20	0.18	0.14	0.10	0.05	0.04							
		1.75mm	16E®% 6001	TNN32E®% 6001	0.10	1.23	9	0.25	0.22	0.20	0.17	0.14	0.09	0.07	0.05	0.04					
		1.75mm	6002	6002	0.20	1.13	8	0.25	0.22	0.20	0.16	0.14	0.07	0.05	0.04						
		2.00mm	16E®% 6001	TNN32E®% 6001	0.10	1.42	11	0.25	0.22	0.20	0.16	0.14	0.12	0.10	0.08	0.06	0.05	0.04			
		2.00mm	6002	6002	0.20	1.32	10	0.25	0.22	0.20	0.16	0.14	0.12	0.08	0.07	0.04	0.04				
		2.50mm	16E®% 6001	TNN32E®% 6001	0.10	1.79	13	0.25	0.22	0.20	0.18	0.16	0.16	0.14	0.12	0.10	0.09	0.08	0.05	0.04	
		2.50mm	6002	6002	0.20	1.69	12	0.25	0.22	0.20	0.18	0.16	0.16	0.12	0.12	0.10	0.08	0.06	0.04		
	Internal Threading	0.75mm	11I®% 60005	TNN22I®% 60005	0.05	0.44	5	0.14	0.12	0.10	0.06	0.02									
		1.00mm	11I®% 60005	TNN22I®% 60005	0.05	0.60	6	0.18	0.15	0.10	0.08	0.05	0.04								
		1.25mm	11I®% 60005	TNN22I®% 60005	0.05	0.76	7	0.18	0.15	0.12	0.10	0.10	0.07	0.04							
		1.50mm	11I®% 60005	TNN22I®% 60005	0.05	0.92	9	0.18	0.16	0.12	0.10	0.10	0.08	0.08	0.06	0.04					
		1.50mm	16I®% 6001	TNN32I®% 6001	0.10	0.87	8	0.18	0.16	0.12	0.10	0.10	0.08	0.08	0.05						
		1.75mm	16I®% 6001	TNN32I®% 6001	0.10	1.04	9	0.20	0.18	0.15	0.12	0.12	0.10	0.08	0.05	0.04					
		2.00mm	16I®% 6001	TNN32I®% 6001	0.10	1.20	11	0.20	0.18	0.15	0.12	0.12	0.10	0.10	0.08	0.06	0.05	0.04			
		2.50mm	16I®% 6001	TNN32I®% 6001	0.10	1.52	14	0.20	0.18	0.16	0.14	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.06	0.04	0.02
		2.50mm	60015	60015	0.15	1.47	13	0.20	0.18	0.16	0.15	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.04	0.02	
Parallel Pipe /Tapered Pipe (55°)	External Threading	28 TPI	16E®% 5501	TNN32E®% 5501	0.0039	0.0240	5	0.008	0.006	0.005	0.003	0.002									
		19 TPI	16E®% 5501	TNN32E®% 5501	0.0039	0.0374	7	0.009	0.008	0.006	0.006	0.004	0.003	0.002							
		14 TPI	16E®% 5501	TNN32E®% 5501	0.0039	0.0528	10	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.002				
		14 TPI	5502	5502	0.0079	0.0480	9	0.009	0.008	0.007	0.006	0.004	0.004	0.004	0.003	0.002					
		11 TPI	16E®% 5501	TNN32E®% 5501	0.0039	0.0681	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002	0.002	0.001	
		11 TPI	5502	5502	0.0079	0.0638	12	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002	0.001		
	Internal Threading	28 TPI	11I®% 55005	TNN22I®% 55005	0.0020	0.0264	7	0.007	0.006	0.005	0.003	0.002	0.002	0.001							
		28 TPI	16I®% 5501	TNN32I®% 5501	0.0039	0.0240	6	0.007	0.006	0.005	0.003	0.002	0.001								
		19 TPI	11I®% 55005	TNN22I®% 55005	0.0020	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002						
		19 TPI	16I®% 5501	TNN32I®% 5501	0.0039	0.0374	7	0.008	0.007	0.006	0.006	0.005	0.004	0.002							
		14 TPI	11I®% 55005	TNN22I®% 55005	0.0020	0.0547	11	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002			
		14 TPI	16I®% 5501	TNN32I®% 5501	0.0039	0.0528	10	0.008	0.007	0.007	0.006	0.006	0.006	0.004	0.004	0.003	0.002				
		14 TPI	5502	5502	0.0079	0.0480	9	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002					
		11 TPI	16I®% 5501	TNN32I®% 5501	0.0039	0.0681	12	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002		
		11 TPI	5502	5502	0.0079	0.0638	11	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.003	0.002			
Whitworth (55°)	External Threading	24 TPI	16E®% 5501	TNN32E®% 5501	0.0039	0.0287	6	0.009	0.007	0.005	0.004	0.003	0.002								
		20 TPI	16E®% 5501	TNN32E®% 5501	0.0039	0.0354	6	0.009	0.007	0.007	0.006	0.005	0.002								
		18 TPI	16E®% 5501	TNN32E®% 5501	0.0039	0.0398	7	0.009	0.008	0.007	0.006	0.004	0.003	0.002							
		16 TPI	16E®% 5501	TNN32E®% 5501	0.0039	0.0453	9	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002					
		16 TPI	5502	5502	0.0079	0.0409	8	0.009	0.008	0.006	0.006	0.004	0.003	0.003	0.002						
		14 TPI	16E®% 5501	TNN32E®% 5501	0.0039	0.0528	10	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.002				
		14 TPI	5502	5502	0.0079	0.0480	9	0.009	0.008	0.007	0.006	0.004	0.004	0.004	0.003	0.002					
		12 TPI	16E®% 5501	TNN32E®% 5501	0.0039	0.0622	12	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.003	0.003	0.002		
		12 TPI	5502	5502	0.0079	0.0575	11	0.010	0.008	0.007	0.006	0.006	0.006	0.004	0.003	0.003	0.003	0.002			
		11 TPI	16E®% 5501	TNN32E®% 5501	0.0039	0.0681	12	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002		
		11 TPI	5502	5502	0.0079	0.0638	11	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002			
		10 TPI	16E®% 5501	TNN32E®% 5501	0.0039	0.0756	14	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002	0.001
		10 TPI	5502	5502	0.0079	0.0709	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.001	
		9 TPI	16E®% 5502	TNN32E®% 5502	0.0079	0.0799	14	0.010	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.001
	Internal Threading	24 TPI	11I®% 55005	TNN22I®% 55005	0.0020	0.0280	7	0.007	0.006	0.005	0.004	0.003	0.002	0.001							
		24 TPI	16I®% 5501	TNN32I®% 5501	0.0039	0.0256	6	0.007	0.006	0.005	0.004	0.003	0.001								
		20 TPI	11I®% 55005	TNN22I®% 55005	0.0020	0.0343	8	0.007	0.006	0.006	0.005	0.004	0.002	0.002	0.002						
		20 TPI	16I®% 5501	TNN32I®% 5501	0.0039	0.0319	7	0.007	0.006	0.006	0.005	0.004	0.002	0.002							
		18 TPI	11I®% 55005	TNN22I®% 55005	0.0020	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002						
		18 TPI	16I®% 5501	TNN32I®% 5501	0.0039	0.0358	7	0.008	0.007	0.006	0.006	0.004	0.003	0.002							
		16 TPI	11I®% 55005	TNN22I®% 55005	0.0020	0.0429	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002					
		16 TPI	16I®% 5501	TNN32I®% 5501	0.0039	0.0409	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002						
		16 TPI	5502	5502	0.0079	0.0362	7	0.008	0.007	0.006	0.006	0.004	0.003	0.002							
		14 TPI	11I®% 55005	TNN22I®% 55005	0.0020	0.0496	10	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002				
		14 TPI	16I®% 5501	TNN32I®% 5501	0.0039	0.0472	9	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002					
		14 TPI	5502	5502	0.0079	0.0425	8	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002						
		12 TPI	16I®% 5501	TNN32I®% 5501	0.0039	0.0559	10	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002				
		12 TPI	5502	5502	0.0079	0.0512	9	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.003	0.002					
		11 TPI	16I®% 5501	TNN32I®% 5501	0.0039	0.0614	11	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002			
		11 TPI	5502	5502	0.0079	0.0567	10	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002				

<How to use>

1) Select the insert with suitable corner-R(rε) determined by the pitch.
2) Do not exceed 0.0118" for the 1st D.O.C.
3) Final D.O.C. for Finishing shall be 0.0008" - 0.0020".
4) Pre chamfer thread diameter to thread minor diameter to improve insert life.
5) Coolant is recommended.

The standard specification of the inch size thread is based on the dimension of 1/8".

In Applicable Toolholders and Inserts Lists on J34~J37, Right-hand Insert / Right-hand Toolholder descriptions are listed based on the previous TNN type inserts.
For other applicable inserts / toolholders or stock availability of Left-hand, see each relevant page and J40.

Parallel Pipe: G (PF), Rp (PS)

Nominal Thread		TPI	Male Thread (G)			Internal Threading (G,Rp)				Root's Radius Male/Female (mm)
Inch	Symbol (Previous Symbol)		Toolholder	Insert		Toolholder	Insert		Min. Bore Dia.(mm)	
				Partial Profile	Full Profile		Partial Profile	Full Profile		
-	G 1/16 (-)	28	KTNR○○○○□-16 KTNSR○○○○□-16	16ERA55-TF 16ERAG55-TF 16ERA55 16ERAG55	-	SINR0612S-06E (HPT J14)	06IR5501	-	6.56	0.12
'1/8	G 1/8 (PF 1/8)	28						-	8.57	
'2/8	G 1/4 (PF 1/4)	19	KTNR○○○○□-16 KTNSR○○○○□-16	16ERA55-TF 16ERAG55-TF 16ERA55 16ERAG55	16ER19W-TF 16ER19W	SINR0816S-08E (HPT J14)	08IR5501	-	11.45	0.18
'3/8	G 3/8 (PF 3/8)	19				SINR1216S-11E (HPT J14)	11IRA55 11IR55005	-	14.95	
'4/8	G 1/2 (PF 1/2)	14	KTNR○○○○□-16 KTNSR○○○○□-16	16ERAG55-TF 16ERG55-TF 16ERAG55 16ERG55	16ER14W-TF 16ER14W	SINR1516S-11	11IR55005	-	18.63	0.25
						SINR1616S-16	16IRAG55 16IRG55 16IR5501 16IR5502	16IR14W-TF 16IR14W		
'5/8	G 5/8 (PF 5/8)	14				SINR2016S-16			20.59	
'6/8	G 3/4 (PF 3/4)	14							24.12	
'7/8	G 7/8 (PF 7/8)	14							27.88	

Tapered Pipe [R, Rc(PT), (BSPT)]

Nominal Thread		TPI	Male Thread (G)			Female Thread (Rc)			Root's Radius Male/Female (mm)
Inch	Symbol (Previous Symbol)		Toolholder	Insert		Toolholder	Insert		
				Partial Profile	Full Profile		Partial Profile	Full Profile	
-	R 1/16, Rc 1/16 (-)	28	KTNR○○○○□-16 KTNSR○○○○□-16	(16ERA55-TF) (16ERAG55-TF) (16ERA55) (16ERAG55)	16ER28BSPT-TF 16ER28BSPT	SINR0612S-06E (HPT J14)	06IR5501	-	0.12
'1/8	R 1/8, Rc 1/8 (PT 1/8)	28							
'2/8	R 1/4, Rc 1/4 (PT 1/4)	19	KTNR○○○○□-16 KTNSR○○○○□-16	(16ERA55-TF) (16ERAG55-TF) (16ERA55) (16ERAG55)	16ER19BSPT-TF 16ER19BSPT	SINR0816S-08E (HPT J14)	08IR5501	-	0.18
'3/8	R 3/8, Rc 3/8 (PT 3/8)	19				SINR1216S-11E (HPT J14)	(11IRA55) (11IR55005)	11IR19BSPT-TF 11IR19BSPT	
'4/8	R 1/2, Rc 1/2 (PT 1/2)	14	KTNR○○○○□-16 KTNSR○○○○□-16	(16ERAG55-TF) (16ERG55-TF) (16ERAG55) (16ERG55)	16ER14BSPT-TF 16ER14BSPT	SINR1516S-11	(11IR55005)	11IR14BSPT-TF 11IR14BSPT	0.25
						SINR1616S-16	(16IRAG55) (16IRG55) (16IR5501) (16IR5502)	16IR14BSPT-TF 16IR14BSPT	
'6/8	R 3/4, Rc 3/4 (PT 3/4)	14				SINR2016S-16			

1) The largest toolholder available for the minimum bore dia. is recommended for the female threading in these tables.
Then, the toolholder whose min. bore dia. is smaller than the recommended toolholder can be used for threading
2) When using "Partial Profile" for Tapered Pipe threading, thread's corners become sharp edged, and the shape will not be the same as the standard shape for Tapered Pipe.

American National Pipe [NPT]

Applicable Thread	TPI	External Threading			Internal Threading		
		Toolholder	Insert		Toolholder	Insert	
			Partial Profile	Full Profile		Partial Profile	Full Profile
1/16 NPT 1/8 NPT	27	KTTR○○○○□-16 KTTXR○○○○□-16F	TT32R6000 TTX32R6000	-	No Tools Available		
1/4 NPT 3/8 NPT	18	KTNR○○○○□-16 KTNSR○○○○□-16	-	16ER18NPT	EZH Sleeve See ➡ J11	EZTR060050-60-004 EZTR070060-60-004 HPTR06005-60-005 HPTR07507-60-005	-
1/2 NPT 3/4 NPT	14	KTNR○○○○□-16 KTNSR○○○○□-16	-	16ER14NPT	EZH Sleeve See ➡ J11	EZTR070060-60-004 HPTR07507-60-005	-
1/2 NPT	14	KTNR○○○○□-16 KTNSR○○○○□-16	-	16ER14NPT	SINR1616S-16	-	16IR14NPT
3/4 NPT					SINR2016S-16		

• Application of NPTF Thread
NPTF is the thread for sealing pipes without using any sealing material.
Thread symbol is similar to NPT but the Tolerance is different from that of NPT and the above Inserts are not available to NPTF.

30° Trapezoidal

The JIS Standard Trapezoidal Size to be machined by TNN Insert are shown.

Applicable Thread	Pitch (mm)	External Threading			Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		Toolholder	Insert		
			Partial Profile	Full Profile		Partial Profile	Full Profile	
Tr 16X2	2	No Tools Available			No Tools Available	-	-	14.00
Tr 18X2 Tr 20X2		KTNR○○○○□-16 KTNSR○○○○□-16	16ER200TR	-	SINR1616S-16	16IR200TR	-	16.00 18.00
Tr 22X3	3	KTNR○○○○□-16 KTNSR○○○○□-16	16ER300TR	-	SINR1616S-16	16IR300TR	-	19.00
Tr 24X3 Tr 26X3	3				SINR2016S-16		-	21.00 23.00

TM Thread: TM Thread of old JIS 30°Trapezoidal Thread has been discontinued. But if the Nominal Dia. X Pitch is the same, the above Tr Thread can be used.
TW Thread: TW Thread is 29° Trapezoidal Thread and the above Inserts are not available.

Metric Coarse Thread: M

Applicable Thread	Pitch (mm)	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
M1 • • • M3	0.25 0.50	No Tools Available	-	-	0.73 • • • 2.46
M4	0.70	No Tools Available	EZTR030025-60-002	-	3.24
M5	0.80	No Tools Available	EZTR040035-60-004	-	4.13
M6	1.00	-	HPTR04504-60 / VNTR045-11		4.92
M7	1.00	-	EZTR050040-60-004	-	5.92
		-	HPTR04504-60 / VNTR045-11		
M8	1.25	-	EZTR060050-60-004	-	6.65
		-	HPTR06005-60 / VNTR060-11		
		SINR0612S-06E	06IR60005	-	
M9	1.25	-	EZTR070060-60-004	-	7.65
		SINR0612S-06E	06IR60005	-	
M10	1.50	SINR0816S-08E	08IR60007	-	8.38
M11	1.50	SINR0816S-08E	08IR60007	-	9.38
M12	1.75	SINR0816S-08E	08IR60007	-	10.11
M16	2.00	SINR1216S-11E	-	11IR200ISO	13.84
M18	2.50	No Tools Available			15.29
M20	2.50	SINR1616S-16	Table 5	16IR250ISO-□□	17.29
M22	2.50	SINR1616S-16	Table 5	16IR250ISO-□□	19.29
M24	3.00	SINR2016S-16	Table 4	16IR300ISO-□□	20.75
M27	3.00	SINR2016S-16	Table 4	16IR300ISO-□□	23.75

Metric Fine Thread: M

Part 1

Applicable Thread	Pitch (mm)	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
M1.0×0.20 • • • M3.0×0.35	0.20 0.35	No Tools Available	-	-	0.78 • • • 4.96
M3.5×0.35	0.35	-	EZTR030025-60-002	-	5.19
M4.5×0.50	0.50	-	EZTR035030-60-002	-	5.19
M5.0×0.50	0.50	-	EZTR040035-60-004	-	
M6.0×0.75	0.75	-	HPTR04504-60 / VNTR045-11		5.19
M7.0×0.75	0.75	-	EZTR050040-60-004	-	6.20
		-	HPTR06005-60 / VNTR045-11		
M8.0×1.00	1.00	-	EZTR060050-60-004	-	6.92
		-	HPTR06005-60 / VNTR060-11		
		SINR0612S-06E	06IR60005	-	
M8.0×0.75	0.75	-	EZTR060050-60-004	-	7.19
		-	HPTR06005-60 / VNTR060-11		
		SINR0612S-06E	06IR60005	-	
M9.0×1.00	1.00	-	EZTR070060-60-004	-	7.92
		-	HPTR07507-60 / VNTR060-11		
		SINR0612S-06E	06IR60005	-	
		SINR0816S-08E	08IR60007	-	
M9.0×0.75	0.75	-	EZTR070060-60-004	-	8.19
		-	HPTR07507-60 / VNTR060-11		
		SINR0612S-06E	06IR60005	-	
M10.0×1.25	1.25	-	HPTR07507-60 / VNTR060-11		8.65
		SINR0816S-08E	08IR60007	-	
M10.0×1.00	1.00	-	HPTR07507-60 / VNTR060-11		8.92
		SINR0816S-08E	08IR60007	-	
M10.0×0.75	0.75	-	HPTR07507-60 / VNTR060-11		9.19
		SINR0612S-06E	06IR600005	-	
M11.0×1.00	1.00	-	HPTR07507-60 / VNTR060-11		9.92
		SINR0816S-08E	08IR60007	-	
M11.0×0.75	0.75	-	HPTR07507-60 / VNTR060-11		10.19
		SINR0612S-06E	06IR60005	-	
M12.0×1.50	1.50	SINR0816S-08E	08IR60007	-	10.38
M12.0×1.25	1.25	SINR0816S-08E	08IR60007	-	10.65
M12.0×1.00	1.00	SINR0816S-08E	08IR60007	-	10.92
M14.0×1.50	1.50	SINR1216S-11E	11IRA60 11IR60005	11IR150ISO-□□	12.38
M14.0×1.25	1.25	SINR1216S-11E		11IR125ISO-□□	12.65
M14.0×1.00	1.00	SINR1216S-11E		11IR100ISO-□□	12.92

Metric Fine Thread: M

Part 2

Applicable Thread	Pitch (mm)	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
M15.0×1.50	1.50	SINR1216S-11E	11IRA60 11IR60005	11IR150ISO-□□	13.38
M15.0×1.00	1.00	SINR1216S-11E		11IR100ISO-□□	13.92
M16.0×1.50	1.50	SINR1216S-11E	11IRA60 11IR60005	11IR150ISO-□□	14.38
M16.0×1.00	1.00	SINR1216S-11E		11IR100ISO-□□	14.92
M17.0×1.50	1.50	SINR1516S-11E	11IRA60 11IR60005	11IR150ISO-□□	15.38
M17.0×1.00	1.00	SINR1516S-11E		11IR100ISO-□□	15.92
M18.0×2.00	2.00	SINR1516S-11E	-	11IR200ISO	15.84
M18.0×1.50	1.50	SINR1616S-16	Table 2	16IR150ISO-□□	16.38
M18.0×1.00	1.00	SINR1616S-16	Table 3	16IR100ISO-□□	16.92
M20.0×2.00	2.00	SINR1616S-16	Table 1	16IR200ISO-□□	17.84
M20.0×1.50	1.50	SINR1616S-16	Table 2	16IR150ISO-□□	18.38
M20.0×1.00	1.00	SINR1616S-16	Table 3	16IR100ISO-□□	18.92
M22.0×2.00	2.00	SINR1616S-16	Table 1	16IR200ISO-□□	19.84
M22.0×1.50	1.50	SINR2016S-16	Table 2	16IR150ISO-□□	20.38
M22.0×1.00	1.00	SINR2016S-16	Table 3	16IR100ISO-□□	20.92
M24.0×2.00	2.00	SINR2016S-16	Table 1	16IR200ISO-□□	21.84
M24.0×1.50	1.50	SINR2016S-16	Table 2	16IR150ISO-□□	22.38
M24.0×1.00	1.00	SINR2016S-16	Table 3	16IR100ISO-□□	22.92
M25.0×2.00	2.00	SINR2016S-16	Table 1	16IR200ISO-□□	22.84
M25.0×1.50	1.50	SINR2016S-16	Table 2	16IR150ISO-□□	23.38
M25.0×1.00	1.00	SINR2016S-16	Table 3	16IR100ISO-□□	23.92
M26.0×1.50	1.50	SINR2420S-16	Table 2	16IR150ISO-□□	24.38
M27.0×2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	24.84
M27.0×1.50	1.50	SINR2420S-16	Table 2	16IR150ISO-□□	25.38
M27.0×1.00	1.00	SINR2420S-16	Table 3	16IR100ISO-□□	25.92
M28.0×2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	25.84
M28.0×1.50	1.50	SINR2420S-16	Table 2	16IR150ISO-□□	26.38
M28.0×1.00	1.00	SINR2420S-16	Table 3	16IR100ISO-□□	26.92
M30.0×3.00	3.00	SINR2420S-22	-	22IR300ISO	26.75
		SINR2420S-16	Table 4	16IR300ISO-□□	
M30.0×2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	27.84
M30.0×1.50	1.50	SINR2420S-16	Table 2	16IR150ISO-□□	28.38
M30.0×1.00	1.00	SINR2420S-16	Table 3	16IR100ISO-□□	28.92
M32.0×2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	29.84
M32.0×1.50	1.50	CINR3025S-16	Table 2	16IR150ISO-□□	30.38

Table 1 (P=2.0mm)

16IRG60
16IRAG60
16IR6001

Table 2 (P=1.5mm)

16IRA60
16IRAG60
16IR6001

Table 3 (P=1.0mm)

16IRA60
16IRAG60

Table 4 (P=3.0mm)

16IRG60
16IRAG60

Table 5 (P=2.5mm)

16IRG60
16IRAG60
16IR6001
16IR60015

• Above shows the usage example of applicable Toolholders / Inserts.

Unified Coarse Thread: UNC

Applicable Thread	TPI	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
2-56 UNC • • • 6-32 UNC	56 32	No Tools Available	-	-	1.69 • • • 2.65
8-32 UNC	32	-	EZTR030025-60-002	-	3.31
10-24 UNC	24	-	EZTR035030-60-002	-	3.68
1/4-20 UNC	20	-	EZTR050040-60-004	-	4.98
		-	HPTR04504-60 / VNTR045-11		
5/16-18 UNC	18	-	EZTR060050-60-004	-	6.41
		-	HPTR06005-60 / VNTR060-11		
3/8-16 UNC	16	-	EZTR070060-60-004	-	7.81
		-	HPTR07507-60-005	-	
7/16-14 UNC	14	No Tools Available			9.15
1/2-13 UNC	13				10.58
9/16-12 UNC	12				12.00
5/8-11 UNC	11				13.38
3/4-10 UNC	10	SINR1616S-16	16IRG60 16IRAG60	16IR10UN-TF	16.30
7/8- 9 UNC	9			-	19.17
1-8 UNC	8	SINR2016S-16		16IR08UN-TF	21.96
1 1/8-7 UNC	7	SINR2420S-22	22IRN60	-	24.65

Unified Fine Thread: UNF

Applicable Thread	TPI	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
0-80 UNF • • • 6-40 UNF	80 40	No Tools Available	-	-	1.18 • • • 2.82
8-36 UNF	36	-	EZTR030025-60-002	-	3.4
10-32 UNF	32	-	EZTR030025-60-002	-	3.97
1/4-28 UNF	28	-	EZTR050040-60-004	-	5.37
		-	HPTR04504-60 / VNTR045-11		
5/16-24 UNF	24	-	HPTR06005-60 / VNTR060-11		6.79
		SINR0612S-06E	06IR60005	-	
3/8-24 UNF	24	-	EZTR070060-60-004	-	8.38
		-	HPTR07507-60-005	-	
		SINR0612S-06E	06IR60005	-	
7/16-20 UNF	20	SINR0816S-08E	08IR60007	-	9.74
1/2-20 UNF	20	SINR0816S-08E	08IR60007	-	11.33
9/16-18 UNF	18	SINR1216S-11E	11IRA60 11IR60005	-	12.76
5/8-18 UNF	18	SINR1216S-11E		-	14.35
3/4-16 UNF	16	SINR1516S-11	11IRA60 11IR60005	-	17.33
		SINR1616S-16	16IRAG60 16IRG60 16IR6001	16IR16UN(-TF)	
7/8-14 UNF	14	SINR2016S-16		16IR14UN(-TF)	20.26
1-12 UNF	12	SINR2016S-16		16IR12UN(-TF)	23.10
1 1/8-12 UNF	12	SINR2420S-16			26.28
1 1/4-12 UNF		SINR2420S-16			29.46
1 3/8-12 UNF	12	CINR3025S-16			32.63
1 1/2-12 UNF		CINR3025S-16			36.81

Whitworth Coarse Thread: W

Applicable Thread	TPI	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
W 1/4	20	No Tools Available	-	-	4.91
W 5/16	18				6.34
W 3/8	16	No Tools Available			7.73
W 7/16	14				9.06
W 1/2	12				10.30
W 9/16	12				11.89
W 5/8	11				13.26
W 3/4	10	SINR1616S-16	16IRAG55 16IRG55	-	16.17
W 7/8	9	SINR1616S-16		-	19.03
W 1	8	SINR2016S-16		-	21.08

Whitworth Coarse Thread: W

Applicable Thread	TPI	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
W9.5 - 24	24	SINR0816S-08E	08IR5501	-	8.30
W10.0 - 24		-	EZTR060050-55-008	-	8.80
W10.5 - 24		-	HPTR06005-55	-	9.30
W9.5 - 20	20	SINR0816S-08E	08IR5501	-	8.06
W10.0 - 20		-	EZTR060050-55-008 EZTR080070-55-008 HPTR06005-55 HPTR08007-55	-	8.56
W10.5 - 20		-		-	9.06
W11.0 - 20		-		-	9.56
W11.5 - 20		-		-	10.06
W12.0 - 20		-		-	10.56
W12.5 - 20		-		-	11.06
W13.0 - 20		-		-	11.56
W13.5 - 20	20	SINR1216S-11E	11IRA55 11IR55005	-	12.06
W11.0 - 18	18	No Tools Available			9.40
W11.5 - 18					9.90
W12.0 - 18					10.40
W12.5 - 18					10.90
W14.0 - 18	18	SINR1216S-11E	11IRA55 11IR55005	-	12.40
W14.5 - 18		SINR1216S-11E		-	12.90
W15.0 - 18		SINR1216S-11E		-	13.40
W16.0 - 18		SINR1516S-11		-	14.40
W13.0 - 16	16	No Tools Available			11.20
W13.5 - 16					11.70
W14.0 - 16	16	SINR1216S-11E	11IRA55 11IR55005	-	12.20
W14.5 - 16		SINR1216S-11E		-	12.70
W15.0 - 16		SINR1216S-11E		-	13.20
W17.0 - 16		SINR1516S-11E		-	15.20
W18.0 - 16	16	SINR1616S-16	16IRAG55 16IRG55 16IR5501 16IR5502	(16IR16W-TF)	16.20
W19.0 - 16		SINR1616S-16		(16IR16W-TF)	17.20
W20.0 - 16		SINR1616S-16		(16IR16W-TF)	18.20
W16.0 - 14	14	SINR1216S-11E	11IRA55 11IR55005	-	13.94
W17.0 - 14		SINR1216S-11E		-	14.94
W18.0 - 14	14	SINR1516S-11		-	15.94
W21.0 - 14	14	SINR1616S-16	16IRAG55 16IRG55 16IR5501 16IR5502	(16IR14W-TF) (16IR14W)	18.94
W22.0 - 14		SINR1616S-16			19.94
W23.0 - 14	14	SINR2016S-16			20.94
W24.0 - 14		SINR2016S-16			21.94
W25.0 - 14		SINR2016S-16			22.94
W26.0 - 14		SINR2016S-16			23.94
W19.0 - 12	12	SINR1616S-16	16IRAG55 16IRG55 16IR5501 16IR5502	-	16.60
W20.0 - 12		SINR1616S-16		-	17.60
W21.0 - 12		SINR1616S-16		-	18.60
W22.0 - 12		SINR1616S-16		-	19.60
W28.0 - 12	12	SINR2420S-16		-	25.60
W30.0 - 12		SINR2420S-16		-	27.60
W32.0 - 12		SINR2420S-16		-	29.60
W34.0 - 12	12	CINR3025S-16		-	31.60
W35.0 - 12		CINR3025S-16		-	32.60
W36.0 - 12		CINR3025S-16		-	33.60
W38.0 - 12		CINR3025S-16		-	35.60
W40.0 - 12	12	CINR3732S-16		-	37.60
W42.0 - 12		CINR3732S-16		-	39.60
W44.0 - 12	12	CINR3732S-16		-	41.60
W45.0 - 12		CINR3732S-16		-	42.60
W46.0 - 12		CINR3732S-16		-	43.60
W48.0 - 12	12	Hereafter, 12 TPI Whitworth Fine Thread can be machined by the same tool as above.			45.60
W50.0 - 12					47.60
•					•
•					•
•					•
W23.0 - 10	10	SINR2016S-16	16IRAG55 16IRG55	-	20.12
W24.0 - 10		SINR2016S-16		-	21.12
W25.0 - 10		SINR2016S-16		-	22.12
W26.0 - 10		SINR2016S-16		-	23.12
W28.0 - 9	9	SINR2420S-16		-	24.80
W30.0 - 9		SINR2420S-16		-	26.80
W32.0 - 9		SINR2420S-16		-	28.80

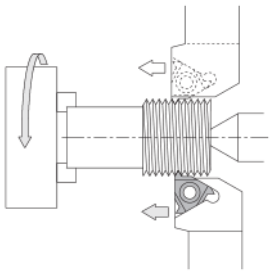
• Above shows the usage example of applicable Toolholders / Inserts.

External Threading (R-hand Thread / L-hand Thread)

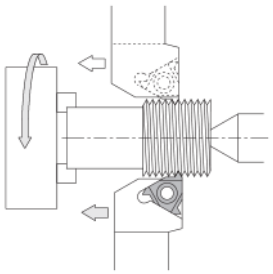
External Threading

Right-Hand Thread

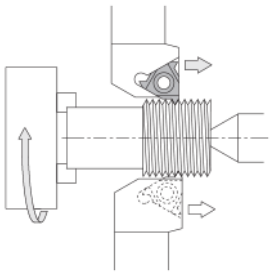
Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M03



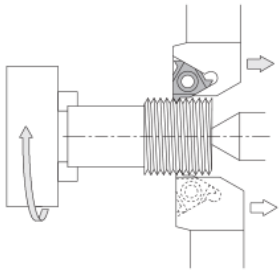
Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M03



Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M04

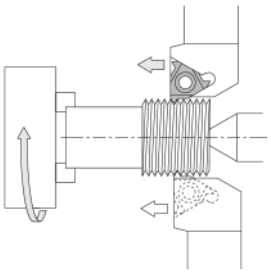


Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M04

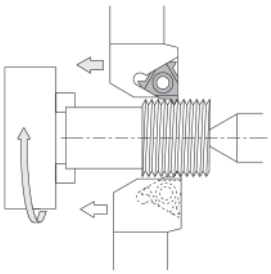


Left-Hand Thread

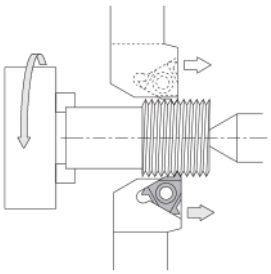
Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M04



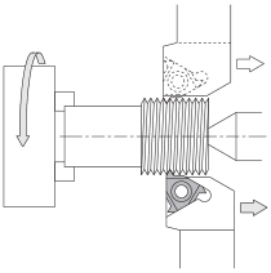
Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M04



Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M03



Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M03

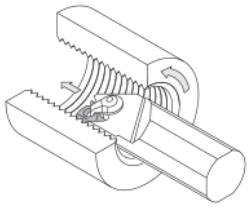


※ These tables are based on KTN/KTNS/KTTX Toolholder.

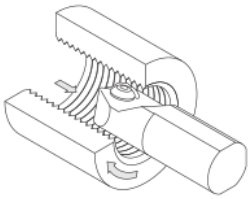
Internal Threading (R-hand Thread / L-hand Thread)

Internal Threading

Right-Hand Thread

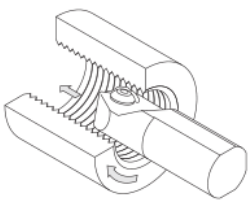


Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M03

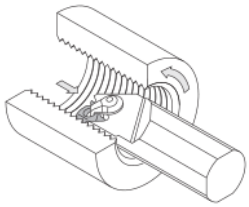


Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M04

Left-Hand Thread



Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M04



Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M03

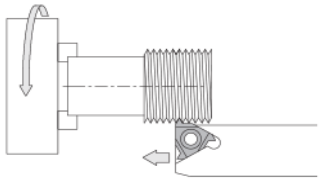
※ These tables are based on SIN type Toolholder.

Internal threading tool holder and the method of cutting "External Thread"

External Threading

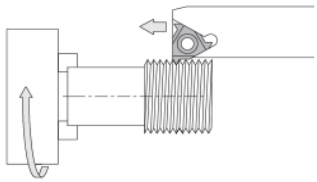
Right-Hand Thread

Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M03

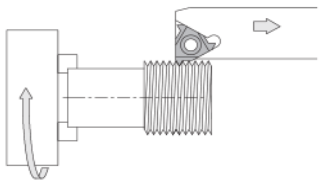


Left-Hand Thread

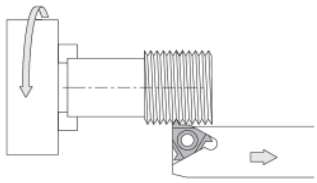
Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M04



Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M04

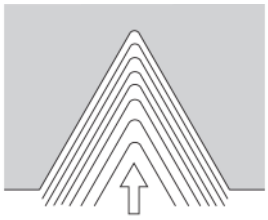
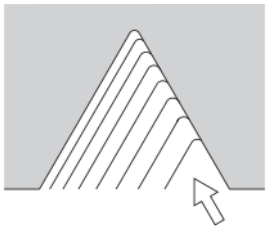
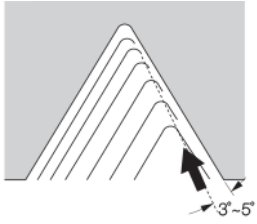


Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M03

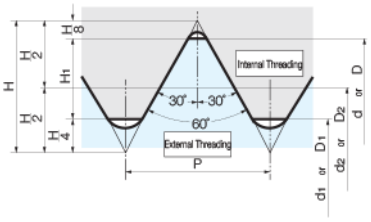
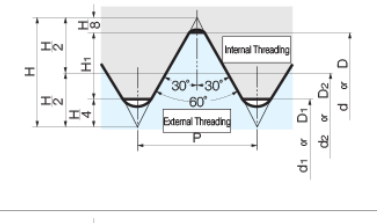
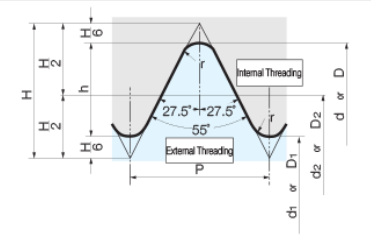
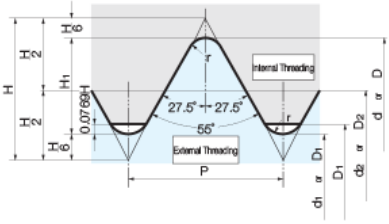
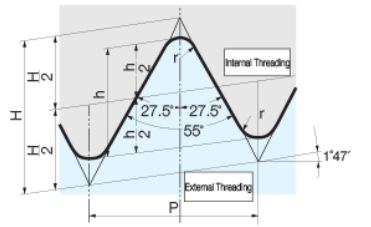
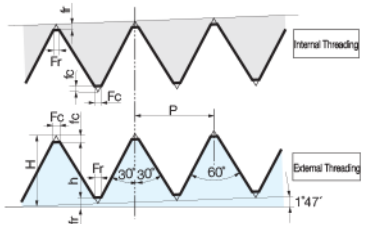
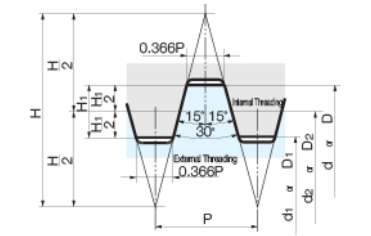


• Use Inserts with Partial Profile.

Infeed Methods

Infeed Methods	Features
 Radial Infeed	• The cutting edge moves toward the center of the workpiece every pass. • Suitable for relatively small pitch size threading. • V-shape chips are generated and chip control may be difficult depending on workpiece material. • Chips prevent coolant from reaching tool tip causing poor tool life.
 Flank Infeed	• Used for large pitch size threading. • No DOC on right side of the figure causes insert wear and on materials that work harden will cause hardening of this surface. • Chips flow to one side.
 Flank Compound Infeed	• Recommended method to reduce work hardening and improve insert life. • 3-5 degrees for steel and up to 12 degrees for stainless materials. • Chips flow to one side allowing coolant to reach insert tip. • This method is recommended to threading by 2-thread insert.

Thread Types & Basic Profile/Applicable Toolholders & Inserts

	Basic Profile	Symbol (Previous Symbol)	Thread Type	Applicable Insert	Applicable Toolholder
Metric		M e.g.) M30	External Threading	16E㎜○○○ISO 16E㎜○○○ISO-TF 16E㎜60○○	KTN㎜○○○○□-16 KTNSR○○○○□-16
				TTX32㎜60○○	KTTX㎜○○○○□-16F, S○○□-KTTX㎜16
			Internal Threading	○○I㎜○○○ISO ○○I㎜○○○ISO-TF ○○I㎜60○○(○)	SIN㎜○○○○S-○○(E)
Unified		UN UNC UNF UNEF e.g.) 3/4 -16 UNF	External Threading	KCT(K/P)○㎜	KKC㎜○○-○
				16E㎜○○UN-TF 16E㎜60○○	KTN㎜○○○○□-16 KTNS㎜○○○○□-16
				TTX32㎜60○○	KTTX㎜○○○○□-16F, S○○□-KTTX㎜16
			Internal Threading	○○I㎜○○○UN-TF ○○I㎜60○○(○)	SIN㎜○○○○S-○○(E)
				KCT(K/P)○㎜	S○○□-KKC㎜
Parallel Pipe		External Threading: G(PF) Internal Threading: G(PF) Rp(PS) e.g.) G3/4 (PF3/4)	External Threading	16E㎜○○○W 16E㎜○○○W-TF 16E㎜55○○	KTN㎜○○○○□-16 KTNSR○○○○□-16
				TTX32㎜55○○	KTTX㎜○○○○□-16F, S○○□-KTTX㎜16
			Internal Threading	○○I㎜○○W ○○I㎜○○W-TF ○○I㎜55○○(○)	SIN㎜○○○○S-○○(E)
Whitworth		W e.g.) W3/8	External Threading	16E㎜○○W 16E㎜○○W-TF 16E㎜55○○	KTN㎜○○○○□-16 KTNS㎜○○○○□-16
				TTX32㎜55○○	KTTX㎜○○○○□-16F, S○○□-KTTX㎜16
			Internal Threading	○○I㎜○○W ○○I㎜○○W-TF ○○I㎜55○○(○)	SIN㎜○○○○S-○○(E)
Tapered Pipe		External Threading: R(PT) (BSPT) Internal Threading: Rc(PT) (BSPT) e.g.) R1/2 (PT1/2)	External Threading	16E㎜○○○PT	KTN㎜○○○○□-16 KTNS㎜○○○○□-16
				TTX32㎜55○○*	KTTX㎜○○○○□-16F, S○○□-KTTX㎜16
			Internal Threading	○○I㎜○○○PT ○○I㎜○○○PT-TF	SIN㎜○○○○S-○○□(E)
American National Pipe		NPT e.g.) 3/8 -18 NPT	External Threading	16E㎜○○○NPT	KTN㎜○○○○□-16 KTNS㎜○○○○□-16
			Internal Threading	16I㎜○○○NPT	SIN㎜○○○○S-16
30° Trapezoidal		Tr e.g.) Tr 26×3	External Threading	16E㎜○○○Tr	KTN㎜○○○○□-16 KTNS㎜○○○○□-16
			Internal Threading	16I㎜○○○Tr	SIN㎜○○○○S-16

• Above shows the usage example of applicable Toolholders / Inserts.

✻…For the case when the thread root's corner-R can be smaller than the standard.

SOLID END MILLS

L1 - L16

See our large selection of solid end mills in our Solid Round Tools Catalog

Application and selection

Ref. Page	Applications	Part Number	Features	Shape	Coating	No. of Flutes	Helix Angle	Outside Dia. ØDc (mm)
L5	Surface finish oriented	2FESS	2 flutes, sharp corner edge		MEGACOAT	2	30°	Ø1.0~Ø16.0
L5, L6		2FESM				2		Ø0.2~Ø16.0
L6		2FESL				2		Ø1.0~Ø16.0
L7		2FEKS	2 flutes, tough corner edge			2		Ø3.0~Ø16.0
		2FEKM				2		
L8		4FESM	4 flutes, sharp corner edge			4		Ø1.0~Ø16.0
		4FEKM	4 flutes, tough corner edge			4		Ø3.0~Ø16.0
L9		2FESW	For Automatic Lathe			2	35°	Ø3.0~Ø13.0
		3FESW				3		
		4FESW				4		
L11	High efficiency chip evacuation	3ZFKS	Multi-functional, high efficiency		MEGACOAT	3	40°	Ø6.0~Ø12.0
		3ZFKM				3		Ø3.0~Ø12.0

Solid Endmill Identification System

2	F	E	S	M	020	-	060	-	04	XXXXXXXX
①	②	③	④	⑤	⑥		⑦		⑧	⑨

① No. of Flutes	② Applications	③ Helix Angle	④ Series	⑤ Length of cut	⑥ Outside Dia.	⑦ Length of cut	⑧ Shank Dia.	⑨ Others
2 3 4	F : Surface finish oriented Z : Multi-functional, high efficiency	E : 30-39° F : 40-49°	S : Square K :Tough corner edge	S : Short M : Medium L : Long W: For Automatic Lathe	020 ↓ 2.0mm	060 ↓ 6.0mm	04 ↓ 4.0mm	Corner Radius C width etc...

Icon Glossary

Coating

MEGACOAT — MEGACOAT

Corner Form

Sharp — Sharp corner edge

Land — With corner land

Flutes

3 — 3-edge design

Helix Angle

30° — Helix Angle 30°

Shank Diameter Tolerance

h5 Shank Dia. — Shank Diameter Tolerance is h5.

h6 Shank Dia. — Shank Diameter Tolerance is h6.

Super Micro-Grain Carbide

The products made from super micro-grain cemented carbide

See our large selection of solid end mills in our Solid Round Tools Catalog

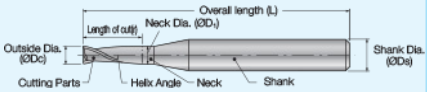
Substrate of all solid end mills is carbide **Carbide Material**

Ref. Page	Part Number	Workpiece Material								
		Steel		Hardened Steel		Stainless Steel	Titanium Alloys	Heat-Resistant Alloys	Cast Iron	Aluminum & Non-Ferrous Metals
		~30HRC	~40HRC	~55HRC	~68HRC					
		P ~30HRC	P 30~40HRC	H ~55HRC	H ~68HRC	M Stainless steel	S Titanium Alloy	S Heat-resistant Alloy	K Cast Iron	N Aluminum & Non Ferrous Material
L5	2FESS	★	☆	☆		★			☆	☆
L5, L6	2FESM									
L6	2FESL									
L7	2FEKS									
	2FEKM									
L8	4FESM									
	4FEKM									
L9	2FESW									
	3FESW									
	4FESW									
L11	3ZFKS	★	☆			★	☆		☆	☆
	3ZFKM									

★ : 1st Recommendation ☆ : 2nd Recommendation

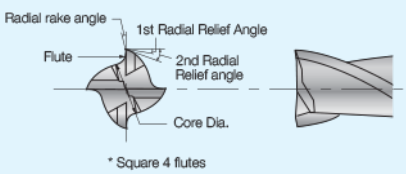
Name of parts

● Square Type

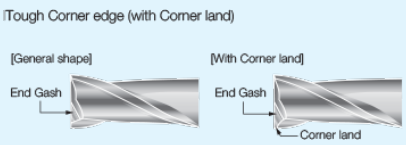


Cutting parts shape

● Edge Shape



● with Chamfered Edge



Core Diameter Ratio (%)=(Core Diameter / Outside Diameter)X100

Introduction

Surface finish oriented

L5~L9

F Series — MEGACOAT is applied

(FES)

The MEGACOAT coating and a sharp cutting edge enable high precision finishing due to excellent wear resistance and heat-resistance.
Total lengths of 35mm and 45mm are available for automatic lathes.

L5~L9

High efficiency chip evacuation

L10~L11

Z Series — MEGACOAT is applied

(3ZEKS)

Multi-functional, high efficiency endmill
Applicable for plunge milling, slotting and finishing with one end mill.
Smooth chip evacuation resulting from the sub-groove on the gash breaks chips during plunge milling

L10-L11

New PVD technology, MEGACOAT

MEGACOAT for High Precision Finishing

MEGACOAT enables high precision finishing with a sharp cutting edge.

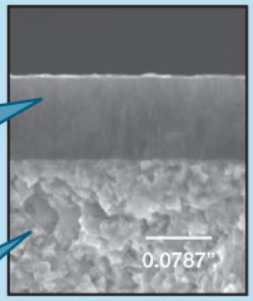
F Series
L10~L14

● Wear and high heat resistance

MEGACOAT
Nitride solid solution metal with a high melting point
High hardness with oxidation resistance
Smooth surface

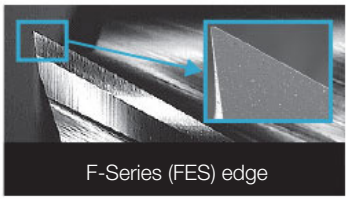
● Fracture resistance with stable cutting

Super Micro-grain cemented carbide



High Quality, Sharp Edge

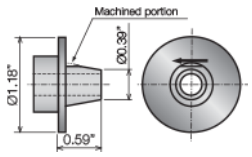
●Smooth surface quality



Case Studies

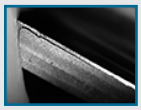
Free Cutting Carbon Steel

· OA parts
· Vc=289 sfm (n=3,500min⁻¹)
· ap=0.0197"
· fz=0.0091 ipt (Vf=126.0 ipm)
· Wet
· 4FESM080-190-08

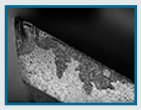


MEGACOAT	230 pcs/edge	
Competitor Coated Carbide E		100 pcs/edge

· Kyocera showed 2.3 times longer tool life than Competitor E.
· Kyocera's new coating technology resolved edge fracturing and provided stability compared with Competitor E.
· Kyocera showed superior finished surface compared with Competitor E.



MEGACOAT
(Number of workpiece processed: 230 pcs/edge)

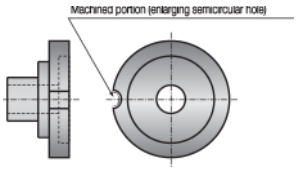


Competitor Coated Carbide E
(Number of workpiece processed: 100 pcs/edge)

(Customer Evaluation)

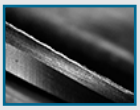
Chromium Steel

· Automotive parts
· Vc=131 sfm (n=3,200min⁻¹)
· ap=0.0039"
· fz=0.0004 ipt (Vf=2.8 ipm)
· Wet
· 2FESM040-110-06



MEGACOAT	700 pcs/edge	
Competitor Coated Carbide F		350 pcs/edge

· Kyocera processed twice as many workpieces compared to Competitor F.
· Competitor F is limited to 350 workpieces due to excessive wear.
· Kyocera prevents chipping there by enabling long-life and stabilized machining.



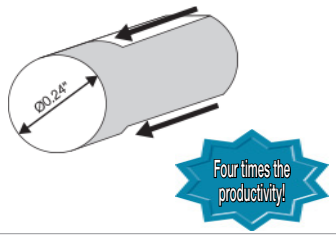
MEGACOAT
(Number of workpiece processed: 700 pcs/edge)

Competitor Coated Carbide F
(Number of workpiece processed: 350 pcs/edge)

(Customer Evaluation)

Carbon Steel

· Machine parts
· Vc=328 sfm (n=3,980min⁻¹)
· ap=0.0177"
· fz=0.0020 ipt (Vf=31.5 ipm)
· Wet
· 4 flutes
· Tool life 4000 pcs/edge
· 4FESW080-080-08



4FESW080-080-08	Table feed	Vf=31.5 ipm
Competitor Coated Carbide G	Table feed Vf=7.9 ipm	

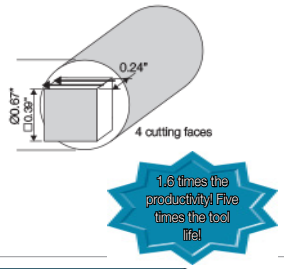
[Competitor Coated Carbide G]
Ø8·4 flutes
Vc=207 sfm (n=2508min⁻¹)
ap=0.0177"
Tool life 4000 pcs/edge
fz=0.0008 ipt (Vf=7.9 ipm)

User comments:
· Was able to increase both cutting speed and table feed rate.
· Despite the increase in machining conditions, burr formation decreased.

(Customer Evaluation)

Free Cutting Carbon Steel

· Machine parts
· Vc=328 sfm (n=3,200min⁻¹)
· ap x ae=0.1378" × 0.1181"
· fz=0.0020 ipt (Vf=25.2 ipm)
· Wet
· 4 flutes
· 4FESW100-080-10



4FESW100-080-10	Table feed	Vf=25.2 ipm
Competitor Coated Carbide H	Table feed Vf=15.7 ipm	

[Competitor Coated Carbide H]
Ø7·4 flutes
Vc=144 sfm (n=2000min⁻¹)
ap × ae=0.1378" × 0.1181"
fz=0.0020 ipt (Vf=15.7 ipm)

User comments:
· Automatic general purpose end mills have a shorter edge length with improved rigidity, which enabled an increase from conventional Ø7 to Ø10, thus improving machining conditions.
· Compared to conventional tools, tool life improved five times.

(Customer Evaluation)

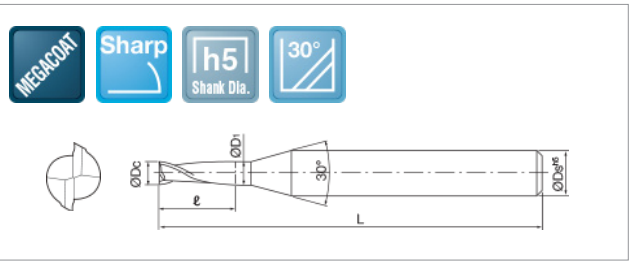
No. of Flutes: 2

2FESS, 2FESM, 2FESL

MEGACOAT is applied

Super Micro-Grain Carbide

Workpiece Materials ★: 1st Recommendation



2FESS (Short)

Shouldering Slotting

(Unit : mm)

Part Number	Stock	Outside Dia.	Mill Dia. tolerance	Length of cut	Neck Dia.	Shank Dia.	Overall length	No. of Flutes
		ØDc		ℓ	ØD1	ØDs	L	Z
2FESS010-015-04	○	1.0	0 -0.015	1.5	1.1	4	45	2
2FESS015-023-04	○	1.5	0 -0.015	2.3	1.6	4	45	2
2FESS020-030-04	○	2.0	0 -0.015	3.0	2.1	4	45	2
2FESS025-037-04	○	2.5	0 -0.015	3.7	2.6	4	45	2
2FESS030-045-06	○	3.0	0 -0.015	4.5	3.2	6	50	2
2FESS035-052-06	○	3.5	0 -0.015	5.2	3.7	6	50	2
2FESS040-060-06	○	4.0	0 -0.015	6.0	4.2	6	50	2
2FESS045-067-06	○	4.5	0 -0.015	6.7	4.7	6	50	2
2FESS050-075-06	○	5.0	0 -0.015	7.5	5.2	6	50	2
2FESS055-082-06	○	5.5	0 -0.015	8.2	5.7	6	50	2
2FESS060-090-06	○	6.0	0 -0.020	9.0	-	6	50	2
2FESS080-120-08	○	8.0	-0.005 -0.025	12.0	-	8	60	2
2FESS100-150-10	○	10.0	-0.005 -0.025	15.0	-	10	70	2
2FESS120-180-12	○	12.0	-0.010 -0.030	18.0	-	12	75	2
2FESS140-210-16	○	14.0	-0.010 -0.030	21.0	14.2	16	75	2
2FESS150-230-16	○	15.0	-0.010 -0.030	23.0	15.2	16	90	2
2FESS160-240-16	○	16.0	-0.010 -0.030	24.0	-	16	90	2

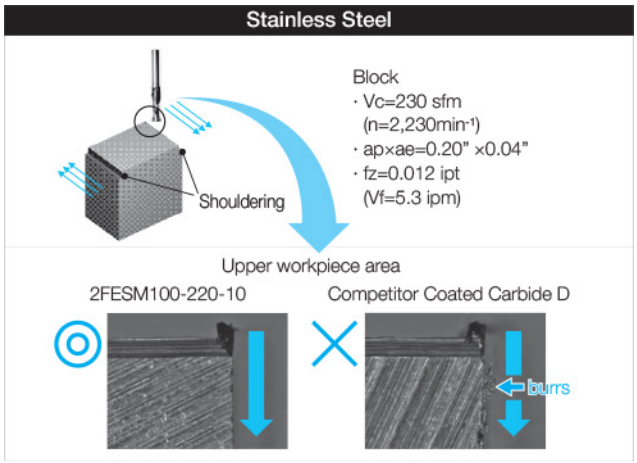
2FESM (Medium)

Shouldering Slotting

(Unit : mm)

Part Number	Stock	Outside Dia.	Mill Dia. tolerance	Length of cut	Neck Dia.	Shank Dia.	Overall length	No. of Flutes
		ØDc		ℓ	ØD1	ØDs	L	Z
2FESM002-004-04	○	0.2	0 -0.015	0.4	0.22	4	45	2
2FESM003-006-04	○	0.3	0 -0.015	0.6	0.32	4	45	2
2FESM004-008-04	○	0.4	0 -0.015	0.8	0.42	4	45	2
2FESM005-010-04	○	0.5	0 -0.015	1.0	0.53	4	45	2
2FESM006-012-04	○	0.6	0 -0.015	1.2	0.63	4	45	2
2FESM007-014-04	○	0.7	0 -0.015	1.4	0.74	4	45	2
2FESM008-016-04	○	0.8	0 -0.015	1.6	0.84	4	45	2
2FESM009-020-04	○	0.9	0 -0.015	2.0	0.95	4	45	2
2FESM010-025-04	○	1.0	0 -0.015	2.5	1.10	4	45	2
2FESM011-025-04	○	1.1	0 -0.015	2.5	1.20	4	45	2
2FESM012-040-04	○	1.2	0 -0.015	4.0	1.30	4	45	2
2FESM013-040-04	○	1.3	0 -0.015	4.0	1.40	4	45	2
2FESM014-040-04	○	1.4	0 -0.015	4.0	1.50	4	45	2
2FESM015-040-04	○	1.5	0 -0.015	4.0	1.60	4	45	2
2FESM016-050-04	○	1.6	0 -0.015	5.0	1.70	4	45	2
2FESM017-050-04	○	1.7	0 -0.015	5.0	1.80	4	45	2
2FESM018-050-04	○	1.8	0 -0.015	5.0	1.90	4	45	2
2FESM019-050-04	○	1.9	0 -0.015	5.0	2.00	4	45	2
2FESM020-060-04	○	2.0	0 -0.015	6.0	2.10	4	45	2
2FESM021-060-04	○	2.1	0 -0.015	6.0	2.20	4	45	2
2FESM022-060-04	○	2.2	0 -0.015	6.0	2.30	4	45	2
2FESM023-060-04	○	2.3	0 -0.015	6.0	2.40	4	45	2
2FESM024-080-04	○	2.4	0 -0.015	8.0	2.50	4	45	2
2FESM025-080-04	○	2.5	0 -0.015	8.0	2.60	4	45	2
2FESM026-080-04	○	2.6	0 -0.015	8.0	2.70	4	45	2
2FESM027-080-04	○	2.7	0 -0.015	8.0	2.80	4	45	2
2FESM028-080-04	○	2.8	0 -0.015	8.0	2.90	4	45	2
2FESM029-080-04	○	2.9	0 -0.015	8.0	3.10	4	45	2
2FESM030-100-06	○	3.0	0 -0.015	10.0	3.20	6	50	2
2FESM031-100-06	○	3.1	0 -0.015	10.0	3.30	6	50	2
2FESM032-100-06	○	3.2	0 -0.015	10.0	3.40	6	50	2
2FESM033-100-06	○	3.3	0 -0.015	10.0	3.50	6	50	2

Sharp Cutting Edge Reduced Burrs



Recommended Cutting Conditions ➔ L12

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

2FESM (Medium)

Shouldering Slotting

(Unit : mm)

Part Number	Stock	Outside Dia.	Mill Dia. tolerance	Length of cut	Neck Dia.	Shank Dia.	Overall length	No. of Flutes
		ØDc		ℓ	ØD1	ØDs	L	Z
2FESM034-100-06	○	3.4	0 -0.015	10.0	3.6	6	50	2
2FESM035-100-06	○	3.5	0 -0.015	10.0	3.7	6	50	2
2FESM036-100-06	○	3.6	0 -0.015	10.0	3.8	6	50	2
2FESM037-100-06	○	3.7	0 -0.015	10.0	3.9	6	50	2
2FESM038-110-06	○	3.8	0 -0.015	11.0	4.0	6	50	2
2FESM039-110-06	○	3.9	0 -0.015	11.0	4.1	6	50	2
2FESM040-110-06	○	4.0	0 -0.015	11.0	4.2	6	50	2
2FESM041-110-06	○	4.1	0 -0.015	11.0	4.3	6	50	2
2FESM042-110-06	○	4.2	0 -0.015	11.0	4.4	6	50	2
2FESM043-110-06	○	4.3	0 -0.015	11.0	4.5	6	50	2
2FESM044-110-06	○	4.4	0 -0.015	11.0	4.6	6	50	2
2FESM045-110-06	○	4.5	0 -0.015	11.0	4.7	6	50	2
2FESM046-110-06	○	4.6	0 -0.015	11.0	4.8	6	50	2
2FESM047-110-06	○	4.7	0 -0.015	11.0	4.9	6	50	2
2FESM048-130-06	○	4.8	0 -0.015	13.0	5.0	6	50	2
2FESM049-130-06	○	4.9	0 -0.015	13.0	5.1	6	50	2
2FESM050-130-06	○	5.0	0 -0.015	13.0	5.2	6	50	2
2FESM051-130-06	○	5.1	0 -0.015	13.0	5.3	6	50	2
2FESM052-130-06	○	5.2	0 -0.015	13.0	5.4	6	50	2
2FESM053-130-06	○	5.3	0 -0.015	13.0	5.5	6	50	2
2FESM054-130-06	○	5.4	0 -0.015	13.0	5.6	6	50	2
2FESM055-130-06	○	5.5	0 -0.015	13.0	5.7	6	50	2
2FESM056-130-06	○	5.6	0 -0.015	13.0	5.8	6	50	2
2FESM057-130-06	○	5.7	0 -0.015	13.0	-	6	50	2
2FESM058-130-06	○	5.8	0 -0.015	13.0	-	6	50	2
2FESM059-130-06	○	5.9	0 -0.015	13.0	-	6	50	2
2FESM060-130-06	○	6.0	0 -0.020	13.0	-	6	50	2
2FESM061-160-08	○	6.1	0 -0.020	16.0	6.3	8	60	2
2FESM062-160-08	○	6.2	0 -0.020	16.0	6.4	8	60	2
2FESM063-160-08	○	6.3	0 -0.020	16.0	6.5	8	60	2
2FESM064-160-08	○	6.4	0 -0.020	16.0	6.6	8	60	2
2FESM065-160-08	○	6.5	0 -0.020	16.0	6.7	8	60	2
2FESM066-160-08	○	6.6	0 -0.020	16.0	6.8	8	60	2
2FESM067-160-08	○	6.7	0 -0.020	16.0	6.9	8	60	2
2FESM068-160-08	○	6.8	0 -0.020	16.0	7.0	8	60	2
2FESM069-160-08	○	6.9	0 -0.020	16.0	7.1	8	60	2
2FESM070-160-08	○	7.0	0 -0.020	16.0	7.2	8	60	2
2FESM071-160-08	○	7.1	0 -0.020	16.0	7.3	8	60	2
2FESM072-160-08	○	7.2	0 -0.020	16.0	7.4	8	60	2
2FESM073-160-08	○	7.3	0 -0.020	16.0	7.5	8	60	2
2FESM074-160-08	○	7.4	0 -0.020	16.0	7.6	8	60	2
2FESM075-190-08	○	7.5	0 -0.020	19.0	7.7	8	60	2
2FESM076-190-08	○	7.6	0 -0.020	19.0	-	8	60	2
2FESM077-190-08	○	7.7	0 -0.020	19.0	-	8	60	2
2FESM078-190-08	○	7.8	0 -0.020	19.0	-	8	60	2
2FESM079-190-08	○	7.9	0 -0.020	19.0	-	8	60	2

(Unit : mm)

Part Number	Stock	Outside Dia.	Mill Dia. tolerance	Length of cut	Neck Dia.	Shank Dia.	Overall length	No. of Flutes
		ØDc		ℓ	ØD1	ØDs	L	Z
2FESM080-190-08	○	8.0	-0.005 -0.025	19.0	-	8	60	2
2FESM081-190-10	○	8.1	-0.005 -0.025	19.0	8.3	10	70	2
2FESM082-190-10	○	8.2	-0.005 -0.025	19.0	8.4	10	70	2
2FESM083-190-10	○	8.3	-0.005 -0.025	19.0	8.5	10	70	2
2FESM084-190-10	○	8.4	-0.005 -0.025	19.0	8.6	10	70	2
2FESM085-190-10	○	8.5	-0.005 -0.025	19.0	8.7	10	70	2
2FESM086-190-10	○	8.6	-0.005 -0.025	19.0	8.8	10	70	2
2FESM087-190-10	○	8.7	-0.005 -0.025	19.0	8.9	10	70	2
2FESM088-190-10	○	8.8	-0.005 -0.025	19.0	9.0	10	70	2
2FESM089-190-10	○	8.9	-0.005 -0.025	19.0	9.1	10	70	2
2FESM090-190-10	○	9.0	-0.005 -0.025	19.0	9.2	10	70	2
2FESM091-190-10	○	9.1	-0.005 -0.025	19.0	9.3	10	70	2
2FESM092-190-10	○	9.2	-0.005 -0.025	19.0	9.4	10	70	2
2FESM093-190-10	○	9.3	-0.005 -0.025	19.0	9.5	10	70	2
2FESM094-190-10	○	9.4	-0.005 -0.025	19.0	9.6	10	70	2
2FESM095-190-10	○	9.5	-0.005 -0.025	19.0	9.7	10	70	2
2FESM096-220-10	○	9.6	-0.005 -0.025	22.0	-	10	70	2
2FESM097-220-10	○	9.7	-0.005 -0.025	22.0	-	10	70	2
2FESM098-220-10	○	9.8	-0.005 -0.025	22.0	-	10	70	2
2FESM099-220-10	○	9.9	-0.005 -0.025	22.0	-	10	70	2
2FESM100-220-10	○	10.0	-0.005 -0.025	22.0	-	10	70	2
2FESM105-220-12	○	10.5	-0.005 -0.025	22.0	10.7	12	75	2
2FESM110-220-12	○	11.0	-0.005 -0.025	22.0	11.2	12	75	2
2FESM115-220-12	○	11.5	-0.005 -0.025	22.0	11.7	12	75	2
2FESM120-260-12	○	12.0	-0.010 -0.030	26.0	-	12	75	2
2FESM130-260-16	○	13.0	-0.010 -0.030	26.0	13.2	16	75	2
2FESM140-260-16	○	14.0	-0.010 -0.030	26.0	14.2	16	75	2
2FESM150-300-16	○	15.0	-0.010 -0.030	30.0	15.2	16	90	2
2FESM160-320-16	○	16.0	-0.010 -0.030	32.0	-	16	90	2

2FESL (Long)

Shouldering

(Unit : mm)

Part Number	Stock	Outside Dia.	Mill Dia. tolerance	Length of cut	Neck Dia.	Shank Dia.	Overall length	No. of Flutes
		ØDc		ℓ	ØD1	ØDs	L	Z
2FESL010-040-04	○	1.0	0 -0.015	4.0	1.1	4	45	2
2FESL015-060-04	○	1.5	0 -0.015	6.0	1.6	4	45	2
2FESL020-090-04	○	2.0	0 -0.015	9.0	2.1	4	45	2
2FESL025-120-04	○	2.5	0 -0.015	12.0	2.6	4	45	2
2FESL030-140-06	○	3.0	0 -0.015	14.0	3.2	6	50	2
2FESL040-170-06	○	4.0	0 -0.015	17.0	4.2	6	50	2
2FESL050-200-06	○	5.0	0 -0.015	20.0	5.2	6	60	2
2FESL060-240-06	○	6.0	-0.005 -0.025	24.0	-	6	60	2
2FESL080-280-08	○	8.0	-0.005 -0.025	28.0	-	8	70	2
2FESL100-340-10	○	10.0	-0.005 -0.025	34.0	-	10	90	2
2FESL120-400-12	○	12.0	-0.010 -0.030	40.0	-	12	90	2
2FESL160-480-16	○	16.0	-0.010 -0.030	48.0	-	16	115	2

Recommended Cutting Conditions ➡ L12~ ➡ L13

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
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U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

No. of Flutes: 2

2FEKS, 2FEKM

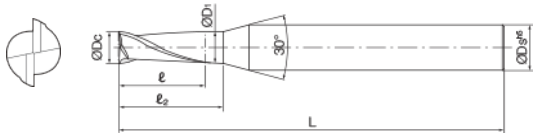
MEGACOAT is applied

Super Micro-Grain Carbide

Workpiece Materials ★: 1st Recommendation

P ~30HRC ★ | P 30~40HRC | H ~55HRC | M Stainless steel ★ | K Cast Iron | N Aluminum & Non Ferrous Material

MEGACOAT | Land | h5 Shank Dia. | 30°



2FEKS (Short)

Shouldering | Slotting

(Unit : mm)

Part Number	Stock	Outside Dia.	Mill Dia. tolerance	Length of cut	Neck Dia.	Under Neck Length	Shank Dia.	Overall length	No. of Flutes
		ØDc		ℓ	ØD1	ℓ2	ØDs	L	Z
2FEKS030-045-06	○	3.0	0 -0.015	4.5	3.15	6.5	6	50	2
2FEKS035-052-06	○	3.5	0 -0.015	5.2	3.68	7.2	6	50	2
2FEKS040-060-06	○	4.0	0 -0.015	6.0	4.2	8.2	6	50	2
2FEKS045-067-06	○	4.5	0 -0.015	6.7	4.7	8.9	6	50	2
2FEKS050-075-06	○	5.0	0 -0.015	7.5	5.2	10.1	6	50	2
2FEKS055-082-06	○	5.5	0 -0.015	8.2	5.7	10.8	6	50	2
2FEKS060-090-06	○	6.0	0 -0.020	9.0	-	-	6	50	2
2FEKS080-120-08	○	8.0	-0.005 -0.025	12.0	-	-	8	60	2
2FEKS100-150-10	○	10.0	-0.005 -0.025	15.0	-	-	10	70	2
2FEKS120-180-12	○	12.0	-0.010 -0.030	18.0	-	-	12	75	2
2FEKS140-210-16	○	14.0	-0.010 -0.030	21.0	14.2	31.4	16	75	2
2FEKS150-230-16	○	15.0	-0.010 -0.030	23.0	15.2	35.0	16	90	2
2FEKS160-240-16	○	16.0	-0.010 -0.030	24.0	-	-	16	90	2

2FEKM (Medium)

Shouldering | Slotting

(Unit : mm)

Part Number	Stock	Outside Dia.	Mill Dia. tolerance	Length of cut	Neck Dia.	Under Neck Length	Shank Dia.	Overall length	No. of Flutes
		ØDc		ℓ	ØD1	ℓ2	ØDs	L	Z
2FEKM030-100-06	○	3.0	0 -0.015	10.0	3.15	12.0	6	50	2
2FEKM035-100-06	○	3.5	0 -0.015	10.0	3.68	12.0	6	50	2
2FEKM040-110-06	○	4.0	0 -0.015	11.0	4.2	13.2	6	50	2
2FEKM045-110-06	○	4.5	0 -0.015	11.0	4.7	13.2	6	50	2
2FEKM050-130-06	○	5.0	0 -0.015	13.0	5.2	15.6	6	50	2
2FEKM055-130-06	○	5.5	0 -0.015	13.0	5.7	15.6	6	50	2
2FEKM060-130-06	○	6.0	0 -0.020	13.0	-	-	6	50	2
2FEKM065-160-08	○	6.5	0 -0.020	16.0	6.7	22.4	8	60	2
2FEKM070-160-08	○	7.0	0 -0.020	16.0	7.2	22.4	8	60	2
2FEKM075-190-08	○	7.5	0 -0.020	19.0	7.7	26.6	8	60	2
2FEKM080-190-08	○	8.0	-0.005 -0.025	19.0	-	-	8	60	2
2FEKM085-190-10	○	8.5	-0.005 -0.025	19.0	8.7	26.6	10	70	2
2FEKM090-190-10	○	9.0	-0.005 -0.025	19.0	9.2	26.6	10	70	2
2FEKM095-190-10	○	9.5	-0.005 -0.025	19.0	9.7	26.6	10	70	2
2FEKM100-220-10	○	10.0	-0.005 -0.025	22.0	-	-	10	70	2
2FEKM110-220-12	○	11.0	-0.005 -0.025	22.0	11.2	30.8	12	75	2
2FEKM120-260-12	○	12.0	-0.010 -0.030	26.0	-	-	12	75	2
2FEKM130-260-16	○	13.0	-0.010 -0.030	26.0	13.2	36.4	16	75	2
2FEKM140-260-16	○	14.0	-0.010 -0.030	26.0	14.2	36.4	16	75	2
2FEKM150-300-16	○	15.0	-0.010 -0.030	30.0	15.2	42.0	16	90	2
2FEKM160-320-16	○	16.0	-0.010 -0.030	32.0	-	-	16	90	2

● MEGACOAT and sharp cutting edge enable high precision finishing due to excellent wear and heat resistance.

Recommended Cutting Conditions ➔ L13

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
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No. of Flutes: 4

4 flutes, Sharp corner edge

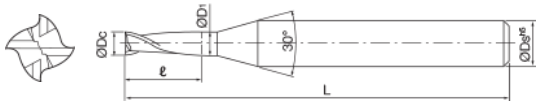
4FESM

Workpiece Materials ★: 1st Recommendation

4

MEGACOAT is applied

Super Micro-Grain Carbide



4 flutes, Tough corner edge

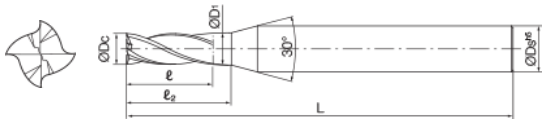
4FEKM

Workpiece Materials ★: 1st Recommendation

4

MEGACOAT is applied

Super Micro-Grain Carbide



4FESM

Shouldering

(Unit : mm)

Part Number	Stock	Outside Dia. ØDc	Mill Dia. tolerance	Length of cut ℓ	Neck Dia. ØD1	Shank Dia. ØDs	Overall length L	No. of Flutes Z
4FESM010-025-04	○	1.0	0 -0.015	2.5	1.1	4	45	4
4FESM015-040-04	○	1.5	0 -0.015	4.0	1.6	4	45	4
4FESM020-060-04	○	2.0	0 -0.015	6.0	2.1	4	45	4
4FESM025-080-04	○	2.5	0 -0.015	8.0	2.6	4	45	4
4FESM030-100-06	○	3.0	0 -0.015	10.0	3.2	6	50	4
4FESM035-100-06	○	3.5	0 -0.015	10.0	3.7	6	50	4
4FESM040-110-06	○	4.0	0 -0.015	11.0	4.2	6	50	4
4FESM045-110-06	○	4.5	0 -0.015	11.0	4.7	6	50	4
4FESM050-130-06	○	5.0	0 -0.015	13.0	5.2	6	50	4
4FESM055-130-06	○	5.5	0 -0.015	13.0	5.7	6	50	4
4FESM060-130-06	○	6.0	0 -0.020	13.0	-	6	50	4
4FESM080-190-08	○	8.0	-0.005 -0.025	19.0	-	8	60	4
4FESM100-220-10	○	10.0	-0.005 -0.025	22.0	-	10	70	4
4FESM120-260-12	○	12.0	-0.010 -0.030	26.0	-	12	75	4
4FESM140-260-16	○	14.0	-0.010 -0.030	26.0	14.2	16	75	4
4FESM150-300-16	○	15.0	-0.010 -0.030	30.0	15.2	16	90	4
4FESM160-320-16	○	16.0	-0.010 -0.030	32.0	-	16	90	4

4FEKM

Shouldering

(Unit : mm)

Part Number	Stock	Outside Dia. ØDc	Mill Dia. tolerance	Length of cut ℓ	Neck Dia. ØD1	Under Neck Length ℓ2	Shank Dia. ØDs	Overall length L	No. of Flutes Z
4FEKM030-100-06	○	3.0	0 -0.015	10.0	3.15	12.0	6	50	4
4FEKM035-100-06	○	3.5	0 -0.015	10.0	3.68	12.0	6	50	4
4FEKM040-110-06	○	4.0	0 -0.015	11.0	4.20	13.2	6	50	4
4FEKM045-110-06	○	4.5	0 -0.015	11.0	4.70	13.2	6	50	4
4FEKM050-130-06	○	5.0	0 -0.015	13.0	5.20	15.6	6	50	4
4FEKM055-130-06	○	5.5	0 -0.015	13.0	5.70	15.6	6	50	4
4FEKM060-130-06	○	6.0	0 -0.020	13.0	-	-	6	50	4
4FEKM080-190-08	○	8.0	-0.005 -0.025	19.0	-	-	8	60	4
4FEKM100-220-10	○	10.0	-0.005 -0.025	22.0	-	-	10	70	4
4FEKM120-260-12	○	12.0	-0.010 -0.030	26.0	-	-	12	75	4
4FEKM140-260-16	○	14.0	-0.010 -0.030	26.0	14.20	36.4	16	75	4
4FEKM150-300-16	○	15.0	-0.010 -0.030	30.0	15.20	42.0	16	90	4
4FEKM160-320-16	○	16.0	-0.010 -0.030	32.0	-	-	16	90	4

Recommended Cutting Conditions ➔ L14

KYOCERA

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
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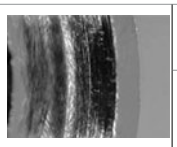
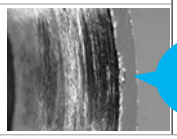
U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

No. of Flutes: 2,3,4

2FESW, 3FESW, 4FESW

(2FESW)

Workpiece Material: Kovar alloy

2FES (Ø3·2flutes) ○Smooth surface of shoulder wall		Facing of machine component · Vc=66 sfm (n=2150min⁻¹) · fz=0.001 ipt (Vf= 3.9 ipm)
Competitor C (Ø3·2flutes) ×Large burrs	 Large burrs	

Comparison with competitor's endmill after 600 passes

2 3 4

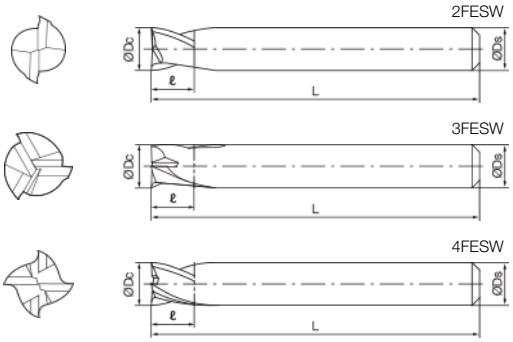
MEGACOAT is applied

Super Micro-Grain Carbide

Workpiece Materials ★: 1st Recommendation

P ~30HRC ★ | P 30~40HRC | H ~55HRC | M Stainless steel ★ | K Cast Iron | N Aluminum & Non Ferrous Material

MEGACOAT | Sharp | h6 Shank Dia. | 35°



Sharp Cutting Edge Reduced Burrs

2FESW

Shouldering | Slotting

(Unit : mm)

Part Number	Stock	Outside Dia. ØDc	Mill Dia. tolerance	Length of cut ℓ	Shank Dia. ØDs	Overall length L	No. of Flutes Z
2FESW050-050-05A	○	5.0	0 -0.020	5.0	5	35	2
2FESW060-060-05A	○	6.0	0 -0.020	6.0	5	35	2
2FESW030-030-04	○	3.0	0 -0.020	3.0	4	45	2
2FESW035-035-04	○	3.5	0 -0.020	3.5	4	45	2
2FESW040-040-04	○	4.0	0 -0.020	4.0	4	45	2
2FESW050-050-06	○	5.0	0 -0.020	5.0	6	45	2
2FESW060-060-06	○	6.0	0 -0.020	6.0	6	45	2
2FESW070-070-07	○	7.0	0 -0.025	7.0	7	45	2
2FESW080-080-07	○	8.0	0 -0.025	8.0	7	45	2
2FESW080-080-08	○	8.0	0 -0.025	8.0	8	45	2
2FESW100-080-07	○	10.0	0 -0.025	8.0	7	45	2
2FESW100-080-10	○	10.0	0 -0.025	8.0	10	45	2
2FESW120-080-10	○	12.0	0 -0.025	8.0	10	45	2
2FESW120-080-12	○	12.0	0 -0.030	8.0	12	45	2
2FESW130-080-13	○	13.0	0 -0.030	8.0	13	45	2

4FESW

Shouldering | Slotting

(Unit : mm)

Part Number	Stock	Outside Dia. ØDc	Mill Dia. tolerance	Length of cut ℓ	Shank Dia. ØDs	Overall length L	No. of Flutes Z
4FESW030-030-04	○	3.0	0 -0.020	3.0	4	45	4
4FESW035-035-04	○	3.5	0 -0.020	3.5	4	45	4
4FESW040-040-04	○	4.0	0 -0.020	4.0	4	45	4
4FESW050-050-06	○	5.0	0 -0.020	5.0	6	45	4
4FESW060-060-06	○	6.0	0 -0.020	6.0	6	45	4
4FESW070-070-07	○	7.0	0 -0.025	7.0	7	45	4
4FESW080-080-07	○	8.0	0 -0.025	8.0	7	45	4

3FESW

Shouldering | Slotting

(Unit : mm)

Part Number	Stock	Outside Dia. ØDc	Mill Dia. tolerance	Length of cut ℓ	Shank Dia. ØDs	Overall length L	No. of Flutes Z
3FESW050-050-05A	○	5.0	0 -0.020	5.0	5	35	3
3FESW060-060-05A	○	6.0	0 -0.020	6.0	5	35	3
3FESW030-030-04	○	3.0	0 -0.020	3.0	4	45	3
3FESW035-035-04	○	3.5	0 -0.020	3.5	4	45	3
3FESW040-040-04	○	4.0	0 -0.020	4.0	4	45	3
3FESW050-050-06	○	5.0	0 -0.020	5.0	6	45	3
3FESW060-060-06	○	6.0	0 -0.020	6.0	6	45	3
3FESW070-070-07	○	7.0	0 -0.025	7.0	7	45	3
3FESW080-080-07	○	8.0	0 -0.025	8.0	7	45	3
3FESW080-080-08	○	8.0	0 -0.025	8.0	8	45	3
3FESW100-080-07	○	10.0	0 -0.025	8.0	7	45	3
3FESW100-080-10	○	10.0	0 -0.025	8.0	10	45	3
3FESW120-080-10	○	12.0	0 -0.025	8.0	10	45	3
3FESW120-080-12	○	12.0	0 -0.030	8.0	12	45	3
3FESW130-080-13	○	13.0	0 -0.030	8.0	13	45	3

Part Number	Stock	Outside Dia. ØDc	Mill Dia. tolerance	Length of cut ℓ	Shank Dia. ØDs	Overall length L	No. of Flutes Z
4FESW080-080-08	○	8.0	0 -0.025	8.0	8	45	4
4FESW100-080-07	○	10.0	0 -0.025	8.0	7	45	4
4FESW100-080-10	○	10.0	0 -0.025	8.0	10	45	4
4FESW120-080-10	○	12.0	0 -0.025	8.0	10	45	4
4FESW120-080-12	○	12.0	0 -0.030	8.0	12	45	4
4FESW130-080-13	○	13.0	0 -0.030	8.0	13	45	4

Recommended Cutting Conditions ➔ L15~ ➔ L16

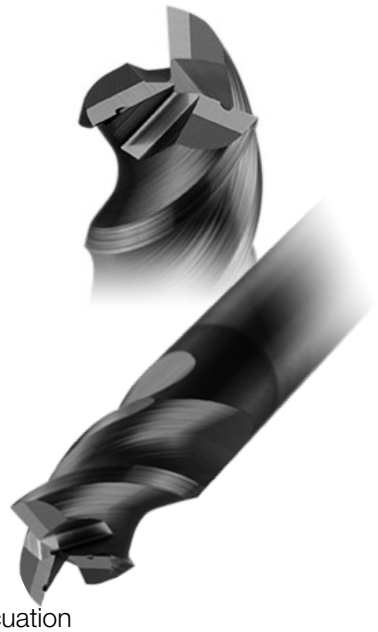
● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

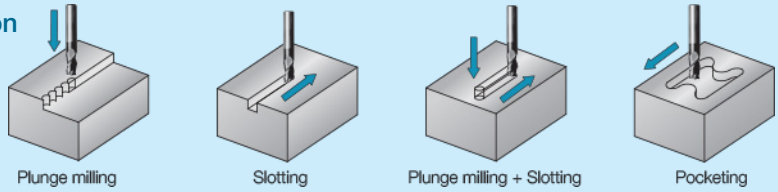
3ZFK

Triple Function

Plunge milling, slotting, and finishing with one end mill



●Application

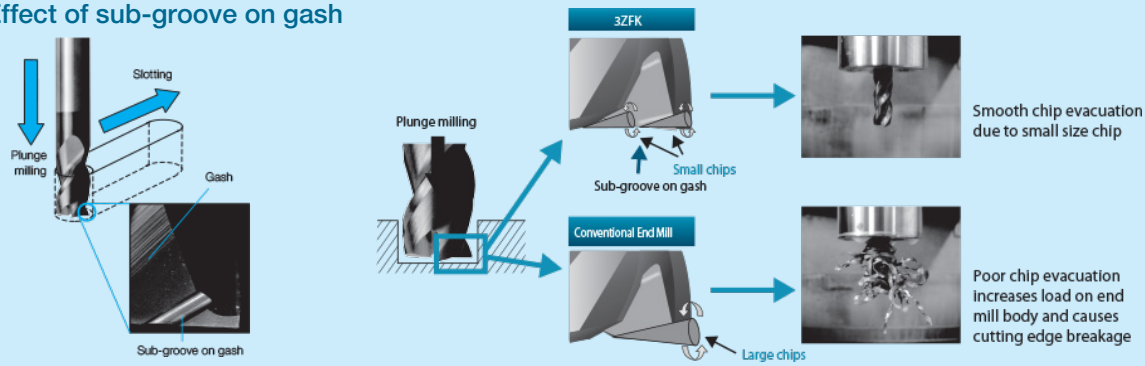


Triple Performance

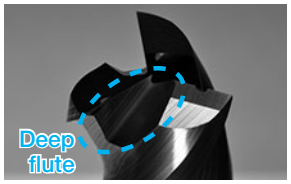
1. New design promotes high efficiency cutting

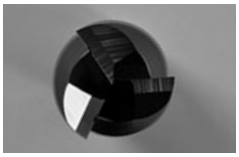
· Sub-groove on gash breaks chips during plunge milling resulting in smooth chip evacuation

●Effect of sub-groove on gash



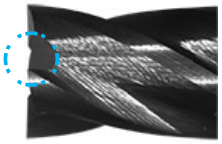
· Prevents **chip clogging** due to deep flute and gash design.





Bottom surface of 3ZFK cutting edge

3ZFK

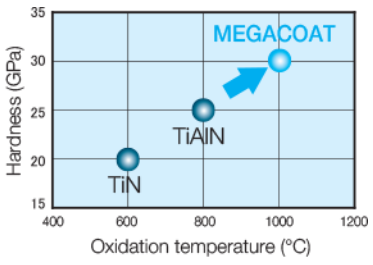


Conventional Endmill

2. Longer tool life due to MEGACOAT

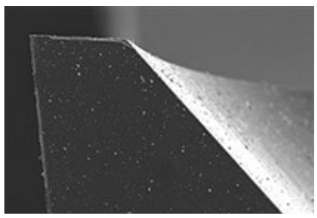
· Excellent wear resistance and heat-resistance

MEGACOAT (New PVD coat)



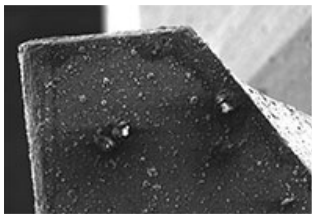
3. Better surface finish due to sharp cutting edge quality

· Smooth and sharp to the tip of the cutting edge
· Controls burr formation. Better surface roughness



MEGACOAT

Smooth and sharp to the tip of the cutting edge
Longer tool life and improved surface finish.



Competitor Coating A

Rough coating surface and round blunt cutting edge

No. of Flutes: 3

3ZFKS, 3ZFKM

3

MEGACOAT is applied

Super Micro-Grain Carbide

Workpiece Materials ★: 1st Recommendation

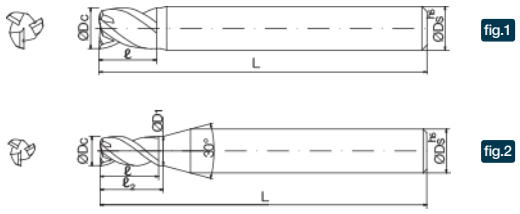


fig.1 fig.2

3ZFKS (Short)

Shouldering Slotting Plunge milling

(Unit : mm)

Part Number	Stock	Outside Dia.	Mill Dia. tolerance	Length of cut	Neck Dia.	Under Neck Length	Shank Dia.	Overall length	No. of Flutes
		ØDc		ℓ	ØD1	ℓ2	ØDs	L	Z
3ZFKS060-090-06 fig.1	○	6.0	0 -0.020	9.0	-	-	6	50	3
3ZFKS070-105-08 fig.2	○	7.0	0 -0.020	10.5	7.2	11.3	8	60	3
3ZFKS080-120-08 fig.1	○	8.0	-0.005 -0.025	12.0	-	-	8	60	3
3ZFKS100-150-10 fig.1	○	10.0	-0.005 -0.025	15.0	-	-	10	70	3
3ZFKS120-180-12 fig.1	○	12.0	-0.010 -0.030	18.0	-	-	12	75	3

3ZFKM (Medium)

Shouldering Slotting Plunge milling

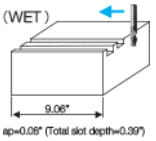
(Unit : mm)

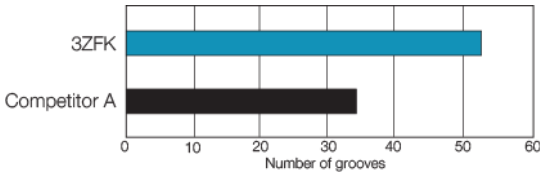
Part Number	Stock	Outside Dia.	Mill Dia. tolerance	Length of cut	Neck Dia.	Under Neck Length	Shank Dia.	Overall length	No. of Flutes
		ØDc		ℓ	ØD1	ℓ2	ØDs	L	Z
3ZFKM030-060-06 fig.2	○	3.0	0 -0.015	6.0	3.2	6.5	6	50	3
3ZFKM040-080-06 fig.2	○	4.0	0 -0.015	8.0	4.2	8.6	6	50	3
3ZFKM050-100-06 fig.2	○	5.0	0 -0.015	10.0	5.2	10.8	6	50	3
3ZFKM060-130-06 fig.1	○	6.0	0 -0.020	13.0	-	-	6	50	3
3ZFKM070-160-08 fig.2	○	7.0	0 -0.020	16.0	7.2	17.3	8	60	3
3ZFKM080-190-08 fig.1	○	8.0	-0.005 -0.025	19.0	-	-	8	60	3
3ZFKM100-220-10 fig.1	○	10.0	-0.005 -0.025	22.0	-	-	10	70	3
3ZFKM120-260-12 fig.1	○	12.0	-0.010 -0.030	26.0	-	-	12	75	3

Case Studies

●Slotting of Titanium Alloy

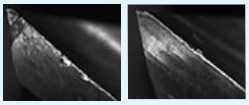
Outside Dia.	Ø10
Workpiece Material	Ti-6Al-4V
Spindle Revolution	3ZFK:n=1700min^{-1}
	Competitor A: n=1300min^{-1}
Feed Rate	Vf=18.1 ipm
Depth of Cut	ap×ae=0.08"×0.39"

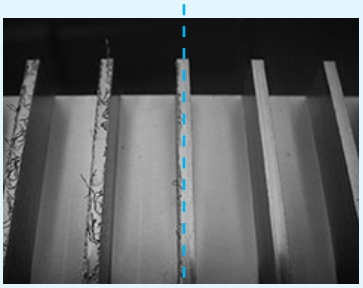




- Better surface finish and longer tool life with 3ZFK.
- Compared to competitor's coated products, the 3ZFK has a 1.4 times longer tool life.
- 3ZFK prevents burr formation due to sharp cutting edge.

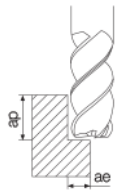
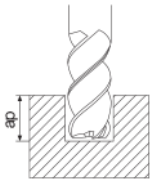
◆Cutting edge after 35 passes





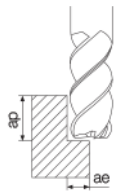
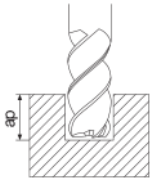
Competitor A	3ZFK	Competitor A	3ZFK

2FESS

Applications	Workpiece Material	Application	Outside Dia. Dc (mm)	Ø1	Ø2	Ø4	Ø6	Ø8	Ø12	Ø16
 Shouldering (ap×ae) (inch) 0.0472Dc×0.0020Dc (Dc<Ø3) 0.0472Dc×0.0039Dc (Dc≥Ø3)  Slotting (ae) (inch) 0.0039Dc (Dc<Ø1) 0.0118Dc (Ø1≤Dc<Ø3) 0.0197Dc (Dc≥Ø3)	Carbon Steel	Shouldering	Spindle RPM	25,500	13,200	6,600	4,500	3,300	2,200	1,700
			Feed Rate (IPM)	8.858	9.055	14.764	16.339	16.535	16.142	16.142
		Slotting	Spindle RPM	15,300	8,000	4,000	2,700	2,000	1,300	1,000
			Feed Rate (IPM)	5.315	5.512	8.858	9.843	9.843	9.646	9.646
	Alloy Steel	Shouldering	Spindle RPM	22,000	11,000	5,600	3,700	2,800	1,900	1,400
			Feed Rate (IPM)	7.677	8.661	11.220	12.402	12.205	12.205	12.205
		Slotting	Spindle RPM	13,000	6,600	3,400	2,200	1,700	1,200	900
			Feed Rate (IPM)	4.528	5.118	6.693	7.480	7.283	7.283	7.283
	Pre-hardened steel (30~45HRC)	Shouldering	Spindle RPM	12,700	7,200	4,200	3,000	2,200	1,500	1,100
			Feed Rate (IPM)	2.165	3.150	3.937	4.134	4.134	4.331	4.331
		Slotting	Spindle RPM	7,600	4,300	2,500	1,800	1,300	900	700
			Feed Rate (IPM)	1.378	1.969	2.362	2.480	2.480	2.559	2.559
	Stainless Steel	Shouldering	Spindle RPM	22,000	11,000	5,600	3,700	2,800	1,900	1,400
			Feed Rate (IPM)	3.740	3.740	4.331	4.528	4.528	4.528	4.528
		Slotting	Spindle RPM	13,000	6,600	3,400	2,200	1,700	1,200	900
			Feed Rate (IPM)	2.362	2.362	2.559	2.756	2.756	2.756	2.756

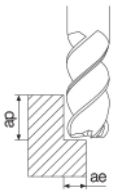
* Cutting with coolant is recommended for stainless steel.

2FESM

Applications	Workpiece Material	Application	Outside Dia. Dc (mm)	Ø0.5	Ø1	Ø2	Ø4	Ø6	Ø8	Ø12	Ø16
 Shouldering (ap×ae) (inch) 0.0591Dc×0.0020Dc (Dc<Ø3) 0.0591Dc×0.0039Dc (Dc≥Ø3)  Slotting (ae) (inch) 0.0039Dc (Dc<Ø1) 0.0118Dc (Ø1≤Dc<Ø3) 0.0197Dc (Dc≥Ø3)	Carbon Steel	Shouldering	Spindle RPM	32,000	25,500	13,200	6,600	4,500	3,300	2,200	1,700
			Feed Rate (IPM)	8.268	8.858	9.055	14.764	16.339	16.535	16.142	16.142
		Slotting	Spindle RPM	19,000	15,300	8,000	4,000	2,700	2,000	1,300	1,000
			Feed Rate (IPM)	5.118	5.315	5.512	8.858	9.843	9.843	9.646	9.646
	Alloy Steel	Shouldering	Spindle RPM	27,000	22,000	11,000	5,600	3,700	2,800	1,900	1,400
			Feed Rate (IPM)	7.087	7.677	8.661	11.220	12.402	12.205	12.205	12.205
		Slotting	Spindle RPM	16,000	13,000	6,600	3,400	2,200	1,700	1,200	900
			Feed Rate (IPM)	4.134	4.528	5.118	6.693	7.480	7.283	7.283	7.283
	Pre-hardened Steel (30~45HRC)	Shouldering	Spindle RPM	22,500	12,700	7,200	4,200	3,000	2,200	1,500	1,100
			Feed Rate (IPM)	1.969	2.165	3.150	3.937	4.134	4.134	4.331	4.331
		Slotting	Spindle RPM	13,500	7,600	4,300	2,500	1,800	1,300	900	700
			Feed Rate (IPM)	1.181	1.378	1.969	2.362	2.480	2.480	2.559	2.559
	Stainless Steel	Shouldering	Spindle RPM	27,000	22,000	11,000	5,600	3,700	2,800	1,900	1,400
			Feed Rate (IPM)	2.362	3.740	3.740	4.331	4.528	4.528	4.528	4.528
		Slotting	Spindle RPM	16,000	13,000	6,600	3,400	2,200	1,700	1,200	900
			Feed Rate (IPM)	1.378	2.362	2.362	2.559	2.756	2.756	2.756	2.756

* Cutting with coolant is recommended for stainless steel.

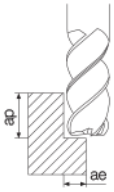
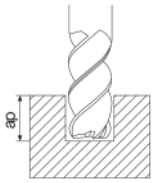
2FESL (Shouldering)

Applications	Workpiece Material	Outside Dia. Dc (mm)	Ø1	Ø2	Ø4	Ø6	Ø8	Ø12	Ø16
 Shouldering (ap×ae) (inch) 0.0984Dc×0.0020Dc (Dc<Ø3) 0.0984Dc×0.0039Dc (Dc³Ø3)	Carbon Steel	Spindle RPM	19,000	9,500	4,800	3,200	2,400	1,600	1,200
		Feed Rate (IPM)	8.268	8.268	8.268	8.268	8.268	8.268	8.268
	Alloy Steel	Spindle RPM	14,300	7,200	3,600	2,400	2,000	1,300	1,000
		Feed Rate (IPM)	6.102	6.299	6.299	6.299	6.693	6.693	5.906
	Pre-hardened Steel (30~45HRC)	Spindle RPM	11,200	5,600	2,800	1,900	1,600	1,000	800
		Feed Rate (IPM)	3.346	3.346	3.543	3.543	3.937	3.740	3.150
	Stainless Steel	Spindle RPM	14,300	7,200	3,600	2,400	2,000	1,300	1,000
		Feed Rate (IPM)	3.740	3.740	3.740	3.740	4.134	4.134	3.150

* Cutting with coolant is recommended for stainless steel.

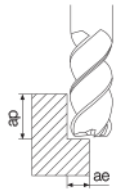
Slotting is not recommended.

2FEKS, 2FEKM

Applications	Workpiece Material	Application	Outside Dia. Dc (mm)	Ø3	Ø4	Ø6	Ø8	Ø10	Ø12	Ø16
 Shouldering (ap×ae) (inch) 0.0472Dc× 0.0039Dc	Carbon Steel	Shouldering	Spindle RPM	9,300	7,000	4,600	3,500	3,000	2,700	2,200
			Feed Rate (IPM)	17.717	17.717	18.504	18.504	18.504	18.504	17.323
		Slotting	Spindle RPM	7,500	6,000	4,400	3,300	2,700	2,300	1,900
			Feed Rate (IPM)	9.449	10.236	13.386	13.386	13.386	13.386	12.598
	Alloy Steel	Shouldering	Spindle RPM	8,800	6,600	4,400	3,300	2,600	2,200	1,800
			Feed Rate (IPM)	14.567	14.567	14.961	14.961	14.961	14.961	14.173
		Slotting	Spindle RPM	7,200	5,400	3,600	2,700	2,200	1,800	1,500
			Feed Rate (IPM)	10.630	10.630	10.630	10.630	10.630	10.630	10.630
 Slotting (ae) (inch) 0.0197Dc	Pre-hardened Steel (30~45HRC)	Shouldering	Spindle RPM	6,400	4,800	3,200	2,400	1,900	1,600	1,200
			Feed Rate (IPM)	5.118	5.118	5.118	5.512	5.512	5.512	5.512
		Slotting	Spindle RPM	5,300	4,000	2,600	2,000	1,600	1,300	1,000
			Feed Rate (IPM)	4.724	4.724	4.724	4.724	4.724	4.724	4.724
	Stainless Steel	Shouldering	Spindle RPM	8,000	6,000	4,000	3,000	2,400	2,000	1,500
			Feed Rate (IPM)	5.512	5.512	5.512	5.512	5.512	5.512	5.512
		Slotting	Spindle RPM	5,300	4,000	2,600	2,000	1,600	1,300	1,000
			Feed Rate (IPM)	3.150	3.543	3.937	3.937	3.937	3.543	3.543

* Cutting with coolant is recommended for stainless steel.

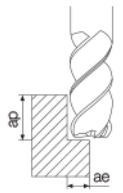
4FESM (Shouldering)

Applications	Workpiece Material	Outside Dia. Dc (mm)	Ø1	Ø2	Ø4	Ø6	Ø8	Ø12	Ø16
 Shouldering (ap×ae) (inch): 0.0591Dc×0.0020Dc (Dc<Ø3); 0.0591Dc×0.0039Dc (Dc≥Ø3)	Carbon Steel	Spindle RPM	25,500	13,000	6,600	4,400	3,300	2,200	1,700
		Feed Rate (IPM)	13.189	13.583	22.835	24.409	24.606	24.803	23.622
	Alloy Steel	Spindle RPM	22,000	11,000	5,600	3,700	2,800	1,900	1,400
		Feed Rate (IPM)	11.417	11.417	15.551	17.913	17.913	18.504	18.110
	Pre-hardened Steel (30~45HRC)	Spindle RPM	12,000	7,200	4,200	3,000	2,200	1,500	1,100
		Feed Rate (IPM)	4.134	4.921	5.906	6.299	6.299	6.496	5.512
	Stainless Steel	Spindle RPM	22,000	11,000	5,600	3,700	2,800	1,900	1,400
		Feed Rate (IPM)	5.118	5.709	6.496	6.496	6.693	6.890	6.102

* Cutting with coolant is recommended for stainless steel.

Slotting is not recommended.

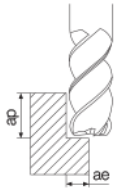
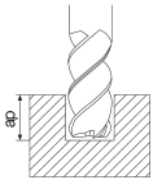
4FEKM (Tough corner edge) (Shouldering)

Applications	Workpiece Material	Outside Dia. Dc (mm)	Ø3	Ø4	Ø6	Ø8	Ø10	Ø12	Ø16
 Shouldering (ap×ae) (inch): 0.0591Dc×0.0039Dc	Carbon Steel	Spindle RPM	10,600	8,000	5,300	4,000	3,200	2,700	2,100
		Feed Rate (IPM)	26.772	27.165	30.315	30.315	30.315	30.315	30.315
	Alloy Steel	Spindle RPM	8,800	6,600	4,400	3,300	2,600	2,200	2,000
		Feed Rate (IPM)	19.685	21.654	24.409	24.803	24.803	24.803	24.016
	Pre-hardened Steel (30~45HRC)	Spindle RPM	6,400	4,800	3,200	2,400	1,900	1,600	1,200
		Feed Rate (IPM)	7.087	7.087	7.087	7.480	7.480	7.480	7.480
	Stainless Steel	Spindle RPM	8,000	6,000	4,000	3,000	2,300	2,000	1,500
		Feed Rate (IPM)	7.480	7.874	7.874	7.874	8.268	8.268	8.268

* Cutting with coolant is recommended for stainless steel.

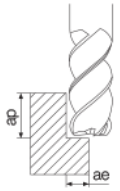
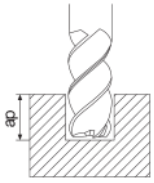
Slotting is not recommended.

2FESW

Applications	Workpiece Material	Application	Outside Dia. Dc (mm)	Ø3	Ø4	Ø5	Ø6	Ø8	Ø10	Ø12	Ø13
 Shouldering (ap×ae) (inch) 0.0394Dc×0.0079Dc  Slotting (ae) (inch) 0.0079Dc	Carbon Steel	Shouldering	Spindle RPM	11,000	8,000	6,400	5,300	4,000	3,200	2,700	2,500
			Feed Rate (IPM)	25.984	25.197	25.197	25.197	20.472	17.717	16.142	13.780
		Slotting	Spindle RPM	11,000	8,000	6,400	5,300	4,000	3,200	2,700	2,500
			Feed Rate (IPM)	25.984	25.197	25.197	25.197	20.472	17.717	16.142	13.780
	Alloy Steel	Shouldering	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	16.535	16.929	16.929	16.929	13.780	11.811	10.630	9.055
		Slotting	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	16.535	16.929	16.929	16.929	13.780	11.811	10.630	9.055
	Pre-hardened Steel (30~45HRC)	Shouldering	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	16.535	16.929	16.929	16.929	13.780	11.811	10.630	9.055
		Slotting	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	16.535	16.929	16.929	16.929	13.780	11.811	10.630	9.055
	Stainless Steel	Shouldering	Spindle RPM	6,400	4,800	3,800	3,200	2,400	1,900	1,600	1,500
			Feed Rate (IPM)	12.598	12.598	12.598	12.598	10.236	9.055	8.268	7.087
		Slotting	Spindle RPM	6,400	4,800	3,800	3,200	2,400	1,900	1,600	1,500
			Feed Rate (IPM)	12.598	12.598	12.598	12.598	10.236	9.055	8.268	7.087

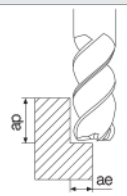
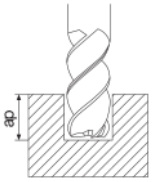
* Cutting with coolant is recommended for stainless steel.

3FESW

Applications	Workpiece Material	Application	Outside Dia. Dc (mm)	Ø3	Ø4	Ø5	Ø6	Ø8	Ø10	Ø12	Ø13
 Shouldering (ap×ae) (inch) 0.0394Dc×0.0079Dc  Slotting (ae) (inch) 0.0079Dc	Carbon Steel	Shouldering	Spindle RPM	11,000	8,000	6,400	5,300	4,000	3,200	2,700	2,500
			Feed Rate (IPM)	31.890	31.496	31.496	31.496	25.591	22.047	20.079	17.717
		Slotting	Spindle RPM	11,000	8,000	6,400	5,300	4,000	3,200	2,700	2,500
			Feed Rate (IPM)	31.890	31.496	31.496	31.496	25.591	22.047	20.079	17.717
	Alloy Steel	Shouldering	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	20.866	20.866	20.866	20.866	16.929	14.567	13.386	11.811
		Slotting	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	20.866	20.866	20.866	20.866	16.929	14.567	13.386	11.811
	Pre-hardened Steel (30~45HRC)	Shouldering	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	20.866	20.866	20.866	20.866	16.929	14.567	13.386	11.811
		Slotting	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	20.866	20.866	20.866	20.866	16.929	14.567	13.386	11.811
	Stainless Steel	Shouldering	Spindle RPM	6,400	4,800	3,800	3,200	2,400	1,900	1,600	1,500
			Feed Rate (IPM)	15.748	15.748	15.748	15.748	12.598	11.024	10.236	9.055
		Slotting	Spindle RPM	6,400	4,800	3,800	3,200	2,400	1,900	1,600	1,500
			Feed Rate (IPM)	15.748	15.748	15.748	15.748	12.598	11.024	10.236	9.055

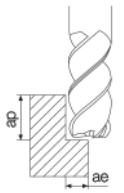
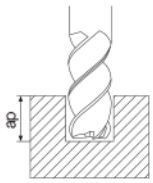
* Cutting with coolant is recommended for stainless steel.

4FESW

Applications	Workpiece Material	Application	Outside Dia. Dc (mm)	Ø3	Ø4	Ø5	Ø6	Ø8	Ø10	Ø12	Ø13
 Shouldering (ap×ae) (inch) 0.0394Dc×0.0079Dc  Slotting (ae) (inch) 0.0079Dc	Carbon Steel	Shouldering	Spindle RPM	11,000	8,000	6,400	5,300	4,000	3,200	2,700	2,500
			Feed Rate (IPM)	37.795	37.795	37.795	37.795	30.709	26.772	24.409	22.441
		Slotting	Spindle RPM	11,000	8,000	6,400	5,300	4,000	3,200	2,700	2,500
			Feed Rate (IPM)	37.795	37.795	37.795	37.795	30.709	26.772	24.409	22.441
	Alloy Steel	Shouldering	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	25.197	25.197	25.197	25.197	20.472	17.717	16.142	14.567
		Slotting	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	25.197	25.197	25.197	25.197	20.472	17.717	16.142	14.567
	Pre-hardened Steel (30~45HRC)	Shouldering	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	25.197	25.197	25.197	25.197	20.472	17.717	16.142	14.567
		Slotting	Spindle RPM	7,400	5,600	4,500	3,700	2,800	2,200	1,900	1,700
			Feed Rate (IPM)	25.197	25.197	25.197	25.197	20.472	17.717	16.142	14.567
	Stainless Steel	Shouldering	Spindle RPM	6,400	4,800	3,800	3,200	2,400	1,900	1,600	1,500
			Feed Rate (IPM)	18.898	18.898	18.898	18.898	15.354	13.386	12.205	11.417
		Slotting	Spindle RPM	6,400	4,800	3,800	3,200	2,400	1,900	1,600	1,500
			Feed Rate (IPM)	18.898	18.898	18.898	18.898	15.354	13.386	12.205	11.417

* Cutting with coolant is recommended for stainless steel.

3ZFKS (Short), 3ZFKM (Medium)

Applications	Workpiece Material	Depth of Cut (ap×ae) (inch)	Outside Dia. Dc (mm)		Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø10	Ø12
 Shouldering  Plunge milling Slotting	Carbon Steel	Shouldering Short 0.0472Dc×0.0118Dc Medium 0.0591Dc×0.0118Dc Plunge milling / Slotting 1Dc	Spindle RPM		13,800	10,700	8,800	7,500	6,600	6,000	4,800	4,000
			Feed Rate (mm/min)	Shouldering	33.465	37.402	43.307	47.244	43.307	39.370	35.827	33.465
				Plunge milling	7.087	6.693	6.693	6.693	6.299	5.906	4.724	3.937
				Slotting	22.441	25.591	27.559	28.740	29.528	30.709	31.496	29.528
	Alloy Steel	Shouldering Short 0.0472Dc×0.0118Dc Medium 0.0591Dc×0.0118Dc Plunge milling / Slotting 0.5Dc	Spindle RPM		10,600	9,300	8,300	7,400	6,500	6,000	4,700	3,500
			Feed Rate (mm/min)	Shouldering	27.559	30.709	35.433	38.583	35.433	33.465	29.528	27.559
				Plunge milling	4.724	4.724	5.118	5.512	5.118	5.118	4.724	3.937
				Slotting	19.685	21.260	22.441	23.228	24.016	23.622	22.835	19.685
	Pre-hardened Steel (30~45HRC)		Spindle RPM		5,200	4,000	3,200	2,600	2,300	2,000	1,600	1,400
			Feed Rate (mm/min)	Shouldering	17.323	17.323	19.291	19.291	19.291	17.323	15.748	14.567
				Plunge milling	3.543	4.331	4.331	5.118	4.331	3.937	3.150	2.756
				Slotting	8.661	10.630	10.630	12.598	12.992	12.992	9.055	7.874
	Stainless Steel	Shouldering Short 0.0472Dc×0.0079Dc Medium 0.0591Dc×0.0079Dc Plunge milling / Slotting 0.5Dc	Spindle RPM		3,300	2,500	2,000	1,700	1,400	1,300	1,100	900
			Feed Rate (mm/min)	Shouldering	11.024	10.630	12.992	13.386	12.992	12.992	13.780	12.598
				Plunge milling	0.787	1.181	1.575	1.575	1.575	1.181	0.787	0.787
				Slotting	4.331	4.331	5.118	5.512	5.118	5.118	4.724	4.724
	Titanium Alloys		Spindle RPM		3,300	2,500	2,000	1,700	1,400	1,300	1,100	900
			Feed Rate (mm/min)	Shouldering	11.024	10.630	12.992	13.386	12.992	12.992	13.780	12.598
				Plunge milling	0.787	1.181	1.575	1.575	1.575	1.181	0.787	0.787
				Slotting	4.331	4.331	5.118	5.512	5.118	5.118	4.724	4.724

· Compressed air is recommended for cutting steel.
· Water soluble coolant is recommended for machining stainless steel and titanium alloys.
· Adjust depth of cut (ap) to suit machine rigidity

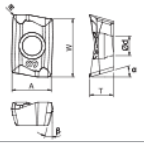
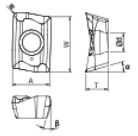
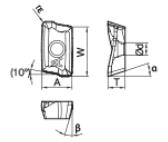
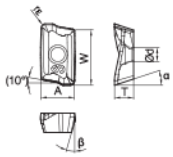
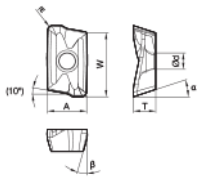
M1 - M12

INDEXABLE END MILLS	M3 - M12
MEC	M3
MECX	M6
MEW	M9

Milling Inserts

Classification of Usage
★ : Roughing / 1st Choice
☆ : Roughing / 2nd Choice
■ : Finishing / 1st Choice
□ : Finishing / 2nd Choice
● : Profiling / 1st Choice
○ : Profiling / 2nd Choice
In case hardness is under 45HRC

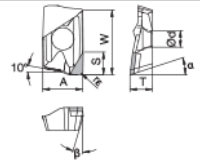
		Cermet	CVD	MN※	MEGA COAT		PVD Coated Carbide	Carbide
		TN100M	CA6535	PR1535	PR1225	PR1210	PR830	GW25
P	Carbon Steel / Alloy Steel	■			★		☆	
	Mold Steel	■			★		☆	
M	Austenitic Stainless Steel			★	☆		☆	
	Martensitic Stainless Steel		★	☆				
	Precipitation Hardened Stainless Steel			★				
K	Gray Cast Iron					★		
	Nodular Cast Iron					★		
N	Non-Ferrous Metal							★
S	Heat-resistant Alloy		★		★			
	Titanium Alloy			★		★		☆
H	Hard Materials				□		□	

Insert (Handed Insert shows Right-hand)	Part Number		Dimensions (inch) A	T	Ød	W	rε	Angle α	β	γ	Cermet TN100M	CVD CA6535	MN※ PR1535	MEGA COAT PR1225	MEGA COAT PR1210	PVD Coated Carbide PR830	Carbide GW25	Ref. Page for Toolholder
 	BDMT	070302ER-JS	0.181	0.102	0.091	0.264	0.008	16°	15°	-		○	○	●		●		M6
		070304ER-JS	0.181	0.102	0.091	0.264	0.016	16°	15°	-		○	○	●		●		
		070308ER-JS	0.181	0.102	0.091	0.264	0.031	16°	15°	-		○	○	●		●		
 	BDMT	070302ER-JT	0.181	0.102	0.091	0.264	0.008	16°	15°	-		○	○	●	●	●		
		070304ER-JT	0.181	0.102	0.091	0.264	0.016	16°	15°	-		○	○	●	●	●		
		070308ER-JT	0.181	0.102	0.091	0.264	0.031	16°	15°	-		○	○	●	●	●		
 Non-ferrous Metals 	BDGT	11T302FR-JA	0.264	0.150	0.110	0.433	0.008	18°	13°	-							○	M3
		11T304FR-JA	0.264	0.150	0.110	0.433	0.016	18°	13°	-							●	
		11T308FR-JA	0.264	0.150	0.110	0.433	0.031	18°	13°	-							●	
 Stainless Steel Low Cutting Force 	BDMT	110302ER-JS	0.248	0.118	0.110	0.433	0.008	18°	15°	-		○	○	●		○		
		110304ER-JS	0.248	0.118	0.110	0.433	0.016	18°	15°	-		○	○	●		●		
		110308ER-JS	0.248	0.118	0.110	0.433	0.031	18°	15°	-		○	○	●		●		
	BDMT	11T302ER-JS	0.264	0.150	0.110	0.433	0.008	18°	13°	-		○	○	●		●		
		11T304ER-JS	0.264	0.150	0.110	0.433	0.016	18°	13°	-		●	●	●		●		
		11T308ER-JS	0.264	0.150	0.110	0.433	0.031	18°	13°	-		●	●	●		●		
 	BDMT	110302ER-JT	0.248	0.118	0.110	0.433	0.008	18°	15°	-		○	○	●	●	○		
		110304ER-JT	0.248	0.118	0.110	0.433	0.016	18°	15°	-		○	○	●	●	●		
		110308ER-JT	0.248	0.118	0.110	0.433	0.031	18°	15°	-		○	○	●	●	●		
	BDMT	11T302ER-JT	0.264	0.150	0.110	0.433	0.008	18°	13°	-		○	○	●	●	●		
		11T304ER-JT	0.264	0.150	0.110	0.433	0.016	18°	13°	-	●	●	●	●	●	●		
		11T308ER-JT	0.264	0.150	0.110	0.433	0.031	18°	13°	-		●	●	●	●	●		
		11T312ER-JT	0.264	0.150	0.110	0.433	0.047	18°	13°	-		○	○	●	●	●		
		11T316ER-JT	0.264	0.150	0.110	0.433	0.063	18°	13°	-		●	●	●	●	●		
		11T320ER-JT	0.264	0.150	0.110	0.433	0.079	18°	13°	-		○	○	●	●	●		
		11T324ER-JT	0.264	0.150	0.110	0.433	0.094	18°	13°	-		○	○	●	●	●		
		11T331ER-JT	0.264	0.150	0.110	0.433	0.122	18°	13°	-		○	○	●	●	●		

※ MN = MEGACOAT NANO

Classification of Usage
■ : Finishing / 1st Choice
□ : Finishing / 2nd Choice

N	Non-Ferrous Metal	□		■
S	Heat-resistant Alloy			
	Titanium Alloy	□		■

Insert (Handed Insert shows Right-hand)	Part Number		Dimensions (inch) A	T	Ød	W	rε	S	Angle α	β	PCD KPD001	KPD010	KPD230	Ref. Page for Toolholder
 	BDMT	11T302FR	0.264	0.150	0.110	0.433	0.008	0.142	18°	13°	●		○	M3
		11T304FR	0.264	0.150	0.110	0.433	0.016	0.142	18°	13°	●		○	

Inserts are sold in 10 piece boxes *PCD Inserts are sold in 1 piece boxes*

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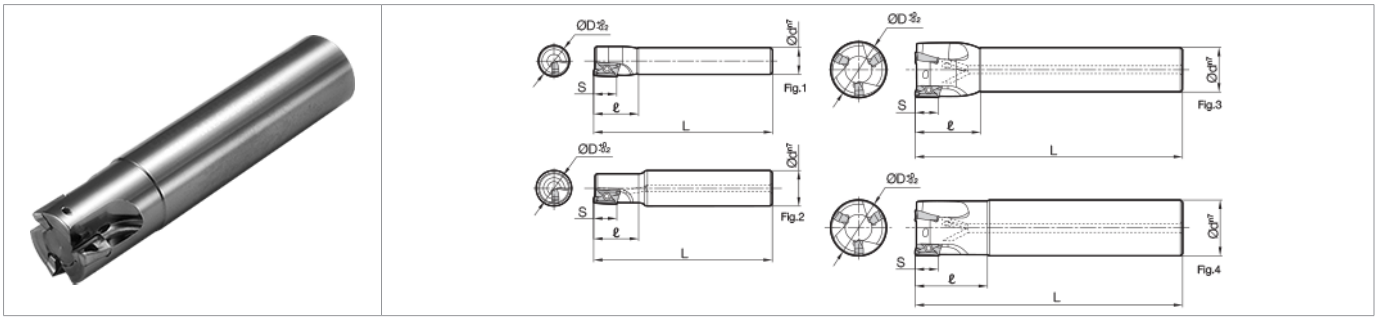
MEC End Mill



Toolholder Dimensions

Part Number			Stock	Unit	No. of Inserts	Dimensions ØD	Dimensions Ød	Dimensions L	Dimensions ℓ	Dimensions S	Rake Angle (°) A.R. (MAX)	Rake Angle (°) R.R.	Coolant Hole	Drawing	Spare Parts: Insert Screw	Spare Parts: Wrench	Pre-set Torque Wrench* NEW	Max. Revolution (min⁻¹)
Cylindrical	Standard Shank	MEC 0500-S500-11	●	inch	1	0.500	0.500	2.650	0.787	0.400	12°	-21°	No	Fig.1	SB-2545TR	DTM-8	PST-T8	50,800
		MEC 0625-S500-11T	●		2	0.625	0.500	2.750	0.906	0.400	18°	-14°	Yes	Fig.3	SB-2555TRG	DTM-8	PST-T8	43,750
		0625-S625-11T	●		2	0.625	0.625	3.000	1.024	0.400	18°	-14°	Yes	Fig.4	SB-2555TRG	DTM-8	PST-T8	43,750
		0750-S625-11T	●		3	0.750	0.625	3.050	1.024	0.400	20°	-10°	Yes	Fig.3	SB-2555TRG	DTM-8	PST-T8	41,000
		0750-S750-11T	●		3	0.750	0.750	3.250	1.142	0.400	20°	-10°	Yes	Fig.4	SB-2555TRG	DTM-8	PST-T8	41,000
		MEC 10-S10-11	○	mm	1	10	10	80	17	10	+10°	-24°	No	Fig.1	SB-2545TR	DTM-8	PST-T8	54,800
		10-S16-11	○		1	10	16	80	17	10	+10°	-24°	Yes	Fig.2	SB-2545TR	DTM-8	PST-T8	54,800
		12-S10-11	○		1	12	10	80	20	10	+12°	-21°	No	Fig.1	SB-2545TR	DTM-8	PST-T8	50,800
		12-S12-11	○		1	12	12	80	20	10	+12°	-21°	No	Fig.1	SB-2545TR	DTM-8	PST-T8	50,800
		12-S16-11	○		1	12	16	80	20	10	+12°	-21°	Yes	Fig.2	SB-2545TR	DTM-8	PST-T8	50,800
		13-S12-11	○		1	13	12	80	20	10	+12°	-19°	No	Fig.1	SB-2545TR	DTM-8	PST-T8	49,200
		14-S12-11	○		1	14	12	80	20	10	+12°	-19°	No	Fig.1	SB-2545TR	DTM-8	PST-T8	47,700
		14-S16-11	○		1	14	16	80	20	10	+12°	-19°	Yes	Fig.2	SB-2545TR	DTM-8	PST-T8	47,700
		MEC 16-S12-11T	○		2	16	12	100	23	10	+18°	-14°	No	Fig.1	SB-2555TRG	DTM-8	PST-T8	43,750
		17-S16-11T	○		2	17	16	100	23	10	+18°	-13°	Yes	Fig.3	SB-2555TRG	DTM-8	PST-T8	43,500
		18-S16-11T	○		2	18	16	100	23	10	+19°	-13°	Yes	Fig.3	SB-2555TRG	DTM-8	PST-T8	43,000
		19-S16-11T	○		3	19	16	100	26	10	+20°	-10°	Yes	Fig.3	SB-2555TRG	DTM-8	PST-T8	42,000
		20-S16-11T	○		3	20	16	110	26	10	+20°	-10°	Yes	Fig.3	SB-2555TRG	DTM-8	PST-T8	41,000
	Same Shank Size	MEC 16-S16-11T	○		2	16	16	100	30	10	+18°	-14°	Yes	Fig.4	SB-2555TRG	DTM-8	PST-T8	43,750
		20-S20-11T	○		3	20	20	110	30	10	+20°	-10°	Yes	Fig.4	SB-2555TRG	DTM-8	PST-T8	41,000

***Pre-set Torque Wrench sold separately**

■ **Max. Revolution**

When running the end mill and inserts at the maximum revolution, the insert or toolholder may be damaged by centrifugal force. For more details, see "Warning" on page M8.

Applicable Inserts

Toolholders	Applicable Inserts M2			
				
MEC...-11	BDMT1103○○ER-JT	BDMT1103○○ER-JS	-	-
MEC...-11T	BDMT11T3○○ER-JT	BDMT11T3○○ER-JS	BDGT11T3○○FR-JA	BDMT11T3○○FR

Chipbreaker

Recommended Cutting Conditions M4

JT Chipbreaker (General Purpose)

JS Chipbreaker (Low Cutting Force)

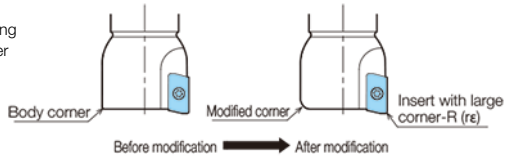
Machining cutting reduced by 20%

JA Chipbreaker (For Alminum)

■ **When using inserts with corner radius R0.0630" or larger, additional modifications of the cutter body will be necessary. See the chart below for the recommended modifications. (Additional grind off is not necessary when corner-R is 0.0472" or less.)**

Insert Corner-R(rε)	Additional modifications of the cutter body corner
0.0630	R0.0394
0.0787	R0.0394
0.0945	R0.0472

* Rounded shape is recommended when modifying the cutter corner. When chamfering cutter corner to modify, please make sure not to cut away too much.



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Recommended Cutting Conditions

Chipbreaker	Workpiece Material	Toolholder fz (ipt) MEC0500~MEC0750 MEC10~MEC19	Toolholder fz (ipt) MEC20	Recommended Insert Grade Vc (sfm) Cermet TN100M	MEGACOAT NANO PR1535	MEGACOAT PR1225	MEGACOAT PR1210	PVD Coated Carbide PR830	CVD Coated Carbide CA6535
JT	Carbon Steel	0.002~**0.004**~0.006	0.003~**0.006**~0.010	☆390~**530**~660	☆390~**590**~820	★390~**590**~820	-	☆390~**520**~660	-
	Alloy Steel	0.002~**0.004**~0.005	0.003~**0.006**~0.008	☆330~**460**~590	☆330~**520**~720	★330~**520**~720	-	☆330~**460**~590	-
	Mold Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.008	☆260~**390**~490	☆260~**460**~590	★260~**460**~590	-	☆260~**390**~490	-
	Austenitic Stainless Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.006	-	☆330~**520**~660	☆330~**520**~660	-	☆330~**460**~590	-
	Martensitic Stainless Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.008	-	☆490~**660**~820	-	-	-	★590~**790**~980
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.008	-	★300~**390**~490	-	-	-	-
	Gray Cast Iron	0.002~**0.004**~0.006	0.003~**0.007**~0.010	-	-	-	★390~**590**~820	-	-
	Nodular Cast Iron	0.002~**0.003**~0.004	0.003~**0.006**~0.008	-	-	-	★330~**490**~660	-	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.004	0.003~**0.005**~0.006	-	☆70~**100**~160	-	-	-	★70~**100**~160
	Titanium Alloy	0.002~**0.003**~0.004	0.003~**0.006**~0.008	-	☆130~**200**~260	-	☆100~**160**~230	-	-
JS	Carbon Steel	0.002~**0.004**~0.005	0.003~**0.006**~0.007	-	☆390~**590**~820	★390~**590**~820	-	☆390~**520**~660	-
	Alloy Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.006	-	☆330~**520**~720	★330~**520**~720	-	☆330~**460**~590	-
	Mold Steel	0.002~**0.003**~0.004	0.003~**0.004**~0.005	-	☆260~**460**~590	★260~**460**~590	-	☆260~**390**~490	-
	Austenitic Stainless Steel	0.002~**0.003**~0.004	0.003~**0.004**~0.005	-	★330~**520**~660	☆330~**520**~660	-	☆330~**460**~590	-
	Martensitic Stainless Steel	0.002~**0.003**~0.004	0.003~**0.004**~0.005	-	☆490~**660**~820	-	-	-	★590~**790**~980
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.004	0.003~**0.004**~0.005	-	☆300~**390**~490	-	-	-	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.004	0.003~**0.004**~0.005	-	☆70~**100**~160	-	-	-	☆70~**100**~160
	Titanium Alloy	0.002~**0.003**~0.004	0.003~**0.004**~0.005	-	★130~**200**~260	-	-	-	-

※ Machining with coolant is recommended for Ni-base Heat Resistant Alloys and Titanium Alloys.

★ 1st Recommendation ☆ 2nd Recommendation

JA Chipbreaker

Workpiece Material	fz (ipt)	Insert Grades (Cutting Speed: sfm) Carbide GW25
Aluminum Alloys (Si 13% or less)	0.002~0.012	660~2620
Aluminum Alloys (Si 13% or above)	0.002~0.008	660~980

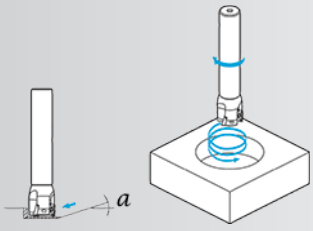
PCD

Workpiece Material	fz (ipt)	Insert Grades (Cutting Speed: sfm) PCD KPD230 (KPD001)
Aluminum Alloys (Si 13% or less)	0.002~0.008	1640~4920
Aluminum Alloys (Si 13% or above)	0.002~0.006	980~3280

Ramping, Helical Milling and Plunge Milling

Ramping, Helical Milling

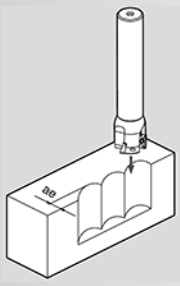
- Ramping angle is recommended to be less than α°.
- Refer to each tool's cutting performance list for the depth of helical milling. Use compressed air during cutting.



Cutting Dia.	Applicable Inserts	Maximum Ramping Angle (α°)
Ø0.625" Ø16~Ø18	BDMT11T3 type BDGT11T3 type	3°
Ø0.750" Ø19~Ø20		5°

BDMT1103 type is not recommended for ramping and helical milling.

Plunge Milling



Cutting Dia.	Applicable Inserts	Maximum Width of Cut (ae)
Ø0.625" Ø16~Ø19	BDMT11T3 type BDGT11T3 type	0.0591"
Ø0.750" Ø20	BDMT11T3 type BDGT11T3 type	0.1969"

BDMT/BDGT1103 type is not recommended for plunge milling.

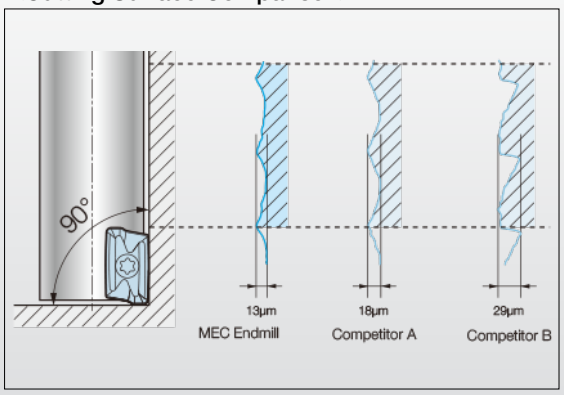
Guidance of minimum cutting dia. for helical cutting.

MEC	Toolholder Dia.	Ø16	Ø18	Ø20
BD_T11T3 type	Guidance of minimum cutting dia. for helical cutting.	Ø21	Ø25	Ø29
	Guidance of minimum cutting dia. to have flat bottom by helical cutting.	Ø28	Ø32	Ø36

Features of MEC

Perfect 90° Shoulders

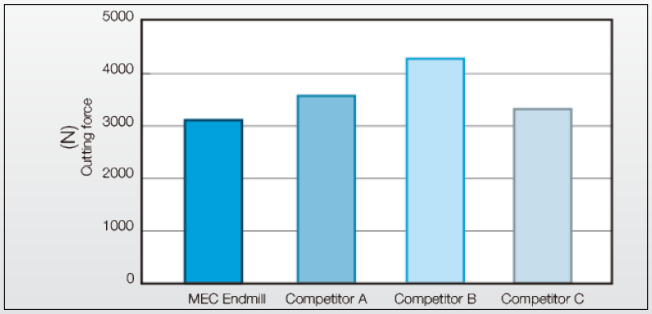
<Cutting Surface Comparison>



(Internal evaluation)

Low cutting force

<Cutting Force Comparison>



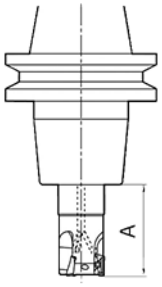
Tool diameter Ø0.787" 1049
Vc=328 sfm Shouldering ap×ae=0.3540"×0.3936"
fz=0.008 ipt Dry (In house evaluation)

(Internal evaluation)

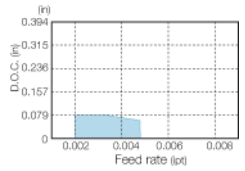
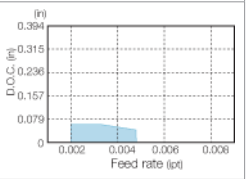
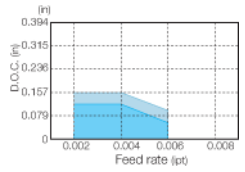
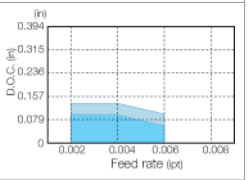
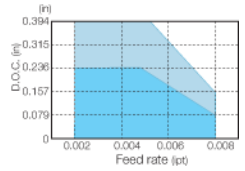
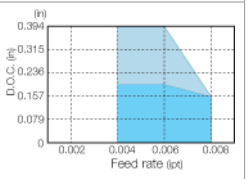
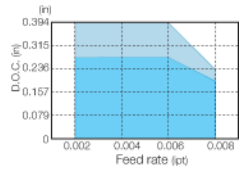
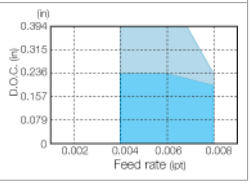
Cutting Performance of MEC End Mill

① Overhang Length When Using BDMT 11mm-type Insert
(Standard / Straight Shank)

Cutting Dia.	Part Number (mm / inch)	Overhang Length A (in) (Colors Refer to charts on right)	
Ø8mm	**MEC10-S10-11**	0.670	-
Ø12mm	**MEC0500... MEC12-S16-11**	0.787	1.180
Ø0.625in Ø16mm	**MEC0625-S625-11T MEC16-S16-11T**	1.180	1.790
Ø0.750in Ø20mm	**MEC0750-S750-11T MEC20-S20-11T**	1.180	1.790



(JT chipbreaker Vc=400 SFM Workpiece :1049)

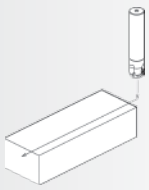
Part Number	■ Shouldering (Cutting width ae = ØD/2)	■ Slotting ■ Ramping and Helical Milling
MEC10-S10-11		
MEC0500... MEC12-S16-11		
MEC0625-S625-11T MEC16-S16-11T		
MEC0750-S750-11T MEC20-S20-11T		

Case Studies

RC55 (Prehardened Tool Steel)

- Test Piece (54~56HRC)
- Vc=175 sfm (n=800min-1)
- ap×ae=0.08" × 0.55"
- fz=0.005 ipt (Vf=11.8 ipm)
- Dry
- MEC20-S20-11T
- 3 Teeth
- BDMT11T308ER-JT

(PR830)



MEC	Metal Removal Volume=4.35 in³ (continuable)
Competitor A	Metal Removal Volume=0.18 in³ (Chipping)

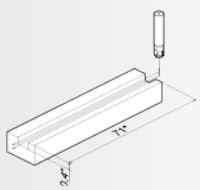
- Competitor A (Ø25 : 2 Teeth) caused chipping after 10 minutes machining with the conditions of Vc=131 sfm, fz=0.003 ipt, apxae=0.08"×0.12", and it was noisy. Also, higher feed rate was not possible because it would cause breakage.
- MEC maintained a good edge condition even after 10 minutes and was still available for further machining.

(User Evaluation)

Structural Steel

- Plate
- Vc=300 sfm (n=1400min-1)
- ap=0.20"×2 Passes
- fz=0.005 ipt (Vf=19.7 ipm)
- Dry
- MEC20-S20-11T
- 3 Teeth
- BDMT11T308ER-JT

(PR830)



MEC	23 pcs/edge
Competitor B	10~11 pcs/edge

- MEC doubled Competitor B's tool life under the same machining conditions.

(User Evaluation)

MECX End Mill

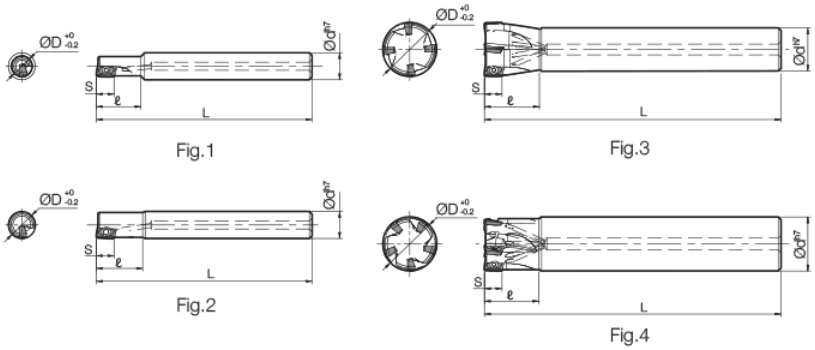


Fig.1 Fig.3 Fig.2 Fig.4

Toolholder Dimensions

Part Number			Stock	Unit	No. of Inserts	Dimensions ØD	Dimensions Ød	Dimensions L	Dimensions ℓ	Dimensions S	Rake Angle (°) A.R. (MAX)	Rake Angle (°) R.R.	Coolant Hole	Drawing	Spare Parts: Insert Screw	Spare Parts: Wrench	Pre-set Torque Wrench* (NEW)	Max. Revolution (min⁻¹)
Standard Shank	Standard	MECX 0750-S625-07-4T	●	inch	4	0.750	0.625	4.00	0.787	0.236	16.3°	-10.9°	Yes	Fig. 3	SB-2042TRG	DTM-6	PST-T6	40,900
		0750-S625-07-5T	●		5	0.750	0.625	4.00	0.787	0.236	16.3°	-10.9°	Yes	Fig. 3	SB-2042TRG	DTM-6	PST-T6	40,900
		MECX 08-S10-07-1T	○	mm	1	8	10	80	16	6	11.7°	-24.0°	Yes	Fig.1	SB-2035TRG	DTM-6	PST-T6	48,100
		14-S12-07-2T	○		2	14	12	80	18	6	16.3°	-12.1°	Yes	Fig.3	SB-2035TRG	DTM-6	PST-T6	44,800
		17-S16-07-3T	○		3	17	16	100	20	6	16.3°	-11.0°	Yes	Fig.3	SB-2042TRG	DTM-6	PST-T6	42,400
		18-S16-07-3T	○		3	18	16	100	20	6	16.3°	-10.9°	Yes	Fig.3	SB-2042TRG	DTM-6	PST-T6	41,600
		20-S16-07-4T	○		4	20	16	110	20	6	16.3°	-10.4°	Yes	Fig.3	SB-2042TRG	DTM-6	PST-T6	40,200
		21-S20-07-4T	○		4	21	20	110	20	6	16.3°	-10.1°	Yes	Fig.3	SB-2042TRG	DTM-6	PST-T6	39,500
		25-S20-07-5T	○		5	25	20	120	25	6	16.3°	-9.7°	Yes	Fig.3	SB-2042TRG	DTM-6	PST-T6	37,000
	Fine pitch	MECX 20-S16-07-5T	○		5	20	16	110	20	6	16.3°	-10.4°	Yes	Fig.3	SB-2042TRG	DTM-6	PST-T6	40,200
		25-S20-07-7T	○		7	25	20	120	25	6	16.3°	-9.7°	Yes	Fig.3	SB-2042TRG	DTM-6	PST-T6	37,000
Same Shank	Standard	MECX 0375-S375-07-1T	●	inch	1	0.375	0.375	3.00	0.669	0.236	12.8°	-19.7	Yes	Fig.1	SB-2035TRG	DTM-6	PST-T6	47,150
		0500-S500-07-2T	●		2	0.500	0.500	3.27	0.709	0.236	14.3°	-12.9	Yes	Fig.1	SB-2035TRG	DTM-6	PST-T6	45,800
		0625-S625-07-3T	●		3	0.625	0.625	3.50	0.787	0.236	16.3°	-11.3°	Yes	Fig. 2	SB-2042TRG	DTM-6	PST-T6	43,300
		0750-S750-07-4T	●		4	0.750	0.750	4.00	0.787	0.236	16.3°	-10.9°	Yes	Fig. 2	SB-2042TRG	DTM-6	PST-T6	40,900
		0750-S750-07-5T	●		5	0.750	0.750	4.00	0.787	0.236	16.3°	-10.9°	Yes	Fig. 2	SB-2042TRG	DTM-6	PST-T6	40,900
		MECX 10-S10-07-1T	○	mm	1	10	10	80	17	6	12.8°	-18.7°	Yes	Fig.2	SB-2035TRG	DTM-6	PST-T6	47,100
		12-S12-07-2T	○		2	12	12	80	18	6	14.3°	-13.7°	Yes	Fig.4	SB-2035TRG	DTM-6	PST-T6	46,200
		16-S16-07-3T	○		3	16	16	100	20	6	16.3°	-11.3°	Yes	Fig.4	SB-2042TRG	DTM-6	PST-T6	43,200
		20-S20-07-4T	○		4	20	20	110	20	6	16.3°	-10.4°	Yes	Fig.4	SB-2042TRG	DTM-6	PST-T6	40,200
	Fine pitch	MECX 16-S16-07-4T	○		4	16	16	100	20	6	16.3°	-11.3°	Yes	Fig.4	SB-2042TRG	DTM-6	PST-T6	43,200
		20-S20-07-5T	○		5	20	20	110	20	6	16.3°	-10.4°	Yes	Fig.4	SB-2042TRG	DTM-6	PST-T6	40,200

***Pre-set Torque Wrench sold separately**

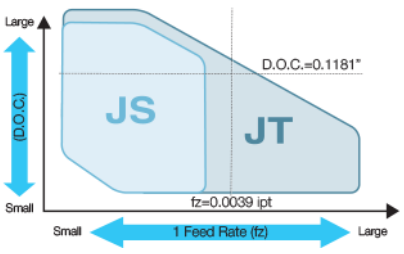
■ **Max. Revolution**
When running the end mill and inserts at the maximum revolution, the insert or toolholder may be damaged by centrifugal force. For more details, see "Warning" in the next page.

■ **For good shoulder finishes when taking multiple depths of cut with MECX.**
In order to obtain smooth wall surface set each DOC to less than 0.197"

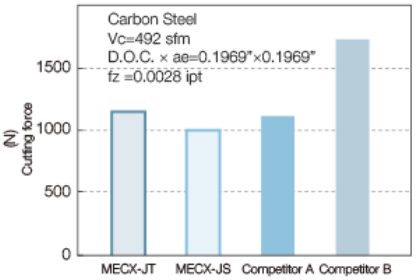
Applicable Inserts

Part Number	Applicable Inserts ➡ M2	
		
MECX····-07..	BDMT 0703○○ER-JT	BDMT 0703○○ER-JS

Selecting Chipbreaker



Cutting Force Comparison



(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

Recommended Cutting Conditions

Workpiece Material	Feed Rate fz (ipt)		Recommended Insert Grade Vc (sfm)				
	JS Chipbreaker	JT Chipbreaker	MEGACOAT NANO PR1535	MEGACOAT PR1225	MEGACOAT PR1210	PVD Coated Carbide PR830	CVD Coated Carbide CA6535
Carbon Steel	0.002~**0.003**~0.004	0.002~**0.004**~0.005	☆ 390~**590**~820	★ 390~**590**~820	-	☆ 390~**490**~590	-
Alloy Steel	0.002~**0.0025**~0.003	0.002~**0.003**~0.004	☆ 330~**520**~720	★ 330~**520**~720	-	☆ 330~**460**~590	-
Mold Steel	0.002~**0.0025**~0.003	0.002~**0.003**~0.004	☆ 260~**460**~590	★ 260~**460**~590	-	☆ 260~**390**~490	-
Austenitic Stainless Steel	0.001~**0.0015**~0.002	0.002~**0.0025**~0.003	★ 390~**590**~820	☆ 390~**590**~820	-	-	-
Martensitic Stainless Steel	0.001~**0.0015**~0.002	0.002~**0.0025**~0.004	☆ 490~**660**~820	-	-	-	★ 590~**790**~980
Precipitation Hardened Stainless Steel	0.001~**0.0015**~0.002	0.002~**0.0025**~0.004	★ 300~**390**~490	-	-	-	-
Gray Cast Iron	0.002~**0.003**~0.004	0.003~**0.004**~0.006	-	-	★ 390~**590**~820	-	-
Nodular Cast Iron	0.002~**0.0025**~0.003	0.003~**0.004**~0.005	-	-	★ 330~**490**~660	-	-
Ni-base Heat Resistant Alloy	0.001~**0.0015**~0.002	0.002~**0.0025**~0.003	☆ 70~**100**~160	-	-	-	★ 70~**100**~160
Titanium Alloy	0.002~**0.0025**~0.003	0.003~**0.004**~0.005	★ 130~**200**~260	-	☆ 100~**160**~230	-	-

※ Machining with coolant is recommended for Titanium Alloy.

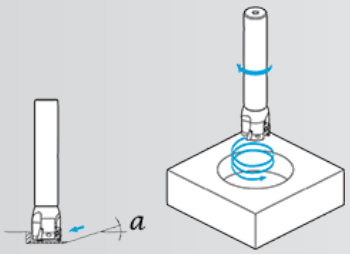
★ 1st Recommendation ☆ 2nd Recommendation

Ramping, Helical Milling

Ramping, Helical Milling

- Ramping angle is recommended to be < α°.
- Refer to each tool's cutting performance list for the depth of helical milling.

Use compressed air during cutting.



Cutting Dia.	Unit	Applicable Inserts	Maximum Ramping Angle (α°)
Ø0.315	inch	BDMT0703 type	Not Recommended
Ø0.400			1.5°
Ø0.472, Ø0.551			2.0°
Ø0.630			3.0°
Ø0.669, Ø0.709			1.5°
Ø8	metric		Not Recommended
Ø10			1.5°
Ø12,Ø14			2.0°
Ø16			3.0°
Ø17,Ø18			1.5°
Ø20			2.0°
Ø21			1.8°
Ø25			1.3°

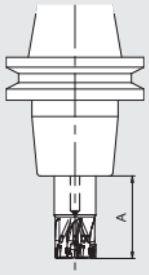
Guidance of minimum cutting dia. for helical cutting.

MECX	Toolholder Dia.	Ø8	Ø10	Ø12	Ø14	Ø16	Ø17	Ø18	Ø20
BDMT0703 type	Guidance of minimum cutting dia. for helical cutting.	Helical cutting is not recommended.	Ø14	Ø18	Ø22	Ø26	Ø28	Ø30	Ø34
	Guidance of minimum cutting dia. to have flat bottom by helical cutting.		Ø17	Ø21	Ø25	Ø29	Ø31	Ø33	Ø37

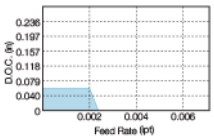
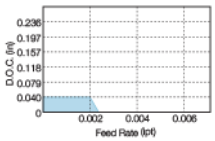
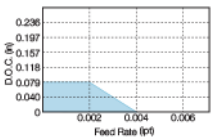
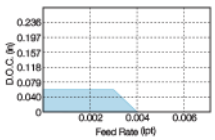
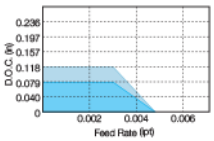
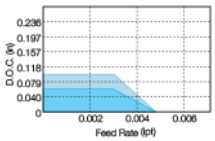
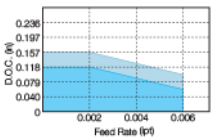
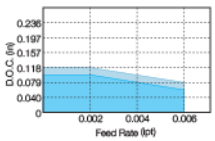
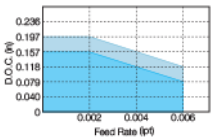
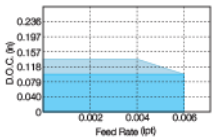
MECX	Toolholder Dia.	Ø21	Ø25
BDMT0703 type	Guidance of minimum cutting dia. for helical cutting.	Ø36	Ø44
	Guidance of minimum cutting dia. to have flat bottom by helical cutting.	Ø39	Ø47

Cutting Performance of MECX End Mill

Cutting Dia.	Part Number (mm / inch)	Overhang Length A (in) (Colors Refer to charts on right)	
Ø8mm	**MECX08-S10-07-1T**	0.630	-
Ø0.375in Ø10mm	**MECX0375-S375-07-1T MECX10-S10-07-1T**	0.670	-
Ø0.500in Ø12mm	**MECX0500-S500-07-2T MECX12-S12-07-2T**	0.709	1.18
Ø0.625in Ø16mm	**MECX0625-S625-07-4T MECX16-S16-07-3T**	0.787	1.57
Ø0.750in Ø20mm	**MECX0750-S750-07-4T MECX20-S20-07-4T**	0.787	1.57



(JT chipbreaker Vc=400 SFM Workpiece :1049)

Part Number	■ Shouldering (Cutting width ae = ØD/2)	■ Slotting ■ Ramping and Helical Milling
MECX08-S10-07-1T		
MECX0375-S375-07-1T MECX10-S10-07-1T		
MECX0500-S500-07-2T MECX12-S12-07-2T		
MECX0625-S625-07-4T MECX16-S16-07-3T		
MECX0750-S750-07-4T MECX20-S20-07-4T		

- Machining with extended overhang length is not recommended for Ø0.315" and Ø0.394".
- The cutting performance chart shows the applicable range of JT Chipbreaker (PR830) with standard flute-number type.
  For Multi-Edge type, use with 70% or less of ap.

Cutting conditions of JS Chipbreaker

① For MECX0375~MECX0500 / MECX08~MECX12
Decrease the feed rate by 25% according to cutting capability list.

② For MECX 0625 / MECX16 and over
Decrease the feed rate and ap by 30% according to cutting application chart

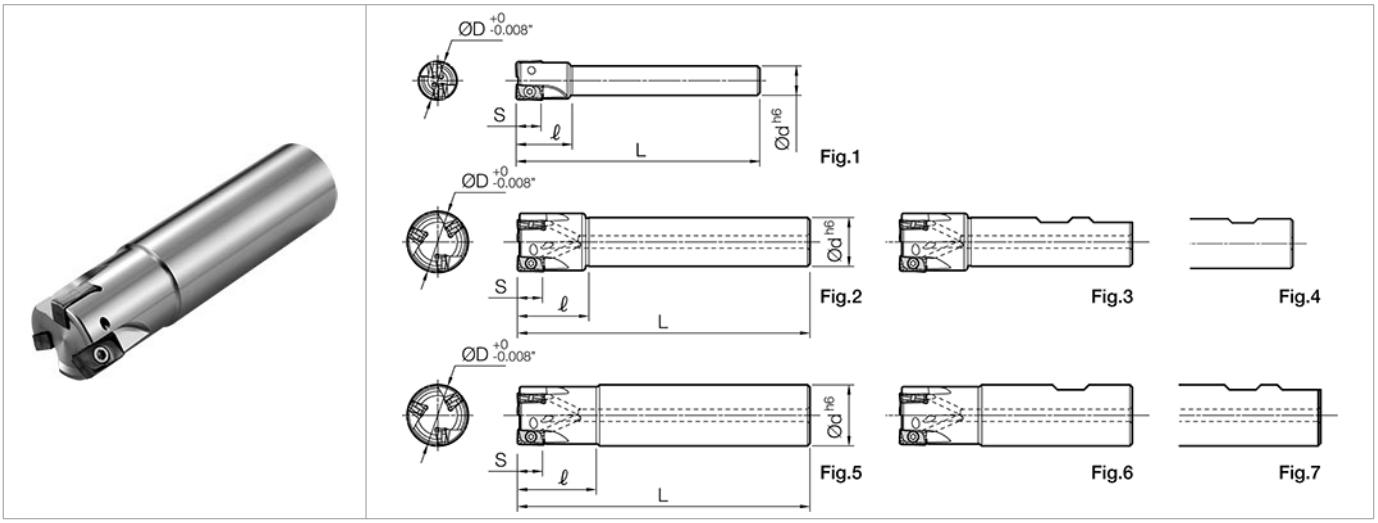
Warning Please observe below precautions fully. Failure to observe the precautions may cause serious damage to human body.

Warning about Max. Revolution indicated on main body

1. When running the end mill and the face mill at revolutions exceeding the maximum revolution limit, the inserts or toolholder may be damaged due to the centrifugal force.
2. For actual practical revolution, please set within recommended cutting condition.
3. When using at a higher revolution (over 10,000RPM), refer to the table to adjust the balance of MECX and suitable arbor.

Max. Revolution (RPM)	Balance quality grade G ISO 1940-1 / 8821 (JIS B0905)
~20,000	G16.0
~30,000	G6.3
30,000~	G2.5

MEW End Mill



Toolholder Dimensions

Part Number				Stock	Unit	No. of Inserts	Dimension (inch)					Rake Angle (°)		Coolant Hole	Drawing	Max. Revolution (min⁻¹)
							ØD	Ød	L	ℓ	S	A.R. (MAX)	R.R.			
Weldon	Standard Shank	MEW	0625-W500-10-2T	●	inch	2	0.625	0.500	2.75	0.969	0.393	+7°	-22°	No	Fig.4	43,900
			0625-W625-10-2T	●		2	0.625	0.625	3.00	1.046	0.393	+7°	-22°	Yes	Fig.6	43,900
			0750-W625-10-2T	●		2	0.750	0.625	3.25	1.145	0.393	+7°	-20°	Yes	Fig.3	42,000
			0750-W750-10-2T	●		2	0.750	0.750	3.25	1.170	0.393	+7°	-20°	Yes	Fig.6	42,000
			0750-W750-10-3T	●		3	0.750	0.750	3.25	1.170	0.393	+7°	-20°	Yes	Fig.6	42,000
Cylindrical	Standard Shank	MEW	16-S12-10-2T	○	metric	2	16	12	100	23	10	+7°	-22°	No	Fig.1	43,750
			18-S16-10-2T	○		2	18	16	100	25	10	+7°	-21°	Yes	Fig.5	43,000
			20-S16-10-2T	○		2	20	16	110	26	10	+7°	-20°	Yes	Fig.2	41,000
	Same Shank	MEW	16-S16-10-2T	○		2	16	16	100	26	10	+7°	-21°	Yes	Fig.2	43,750
			20-S20-10-2T	○		2	20	20	110	30	10	+7°	-20°	Yes	Fig.5	41,000
			20-S20-10-3T	○		3	20	20	110	30	10	+7°	-20°	Yes	Fig.5	41,000

■ **Max. Revolution**

When running the end mill and inserts at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Spare parts and applicable inserts (end mill / face mill)

Part Number	Spare Parts				Applicable Inserts ➔ M10		
	Insert Screw	Wrench	Anti-seize Compound	Pre-set Torque Wrench	General Purpose	Low Cutting Force	Tough Edge (Heavy Milling)
							
MEW …-10-_T	SB-3065TRP	DTPM-8	MP-1	PST-IP8*	LOMU 100408ER-GM	LOMU 100408ER-SM	LOMU 100408ER-GH
	for Insert Screw Recommended torque 1.2Nm						

Coat Anti-seize Compound (MP-1) thinly on portion of taper and thread when insert is fixed.

***Pre-set Torque Wrench sold separately**

Recommended Cutting Conditions ➔ **M11**

About wrench specifications

Wrenches and clamp screws are “Torx Plus”.

1) Ref. to Fig. 2 for “Torx Plus” Wrench. (Blue grip)

2) Ref. to Fig. 3 for “Torx” Wrench. (Black grip)

A “Torx Plus” Wrench and a “Torx” Wrench have different top shapes. Please use a “Torx Plus” Wrench.

* If a “Torx” Wrench is used to tighten, the screw head might become damaged and then the screw cannot be removed.

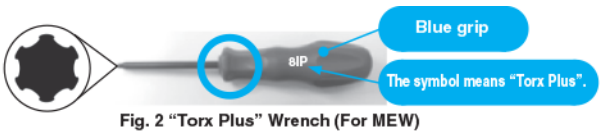


Fig. 2 “Torx Plus” Wrench (For MEW)

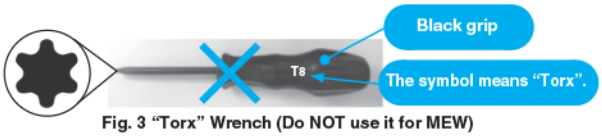


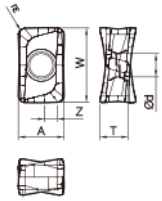
Fig. 3 “Torx” Wrench (Do NOT use it for MEW)

● : U.S. Stock Standard
○ : World Express (Shipping: 7-10 Business Days)

Milling Inserts

Classification of Usage
★ : Roughing / 1st Choice
☆ : Roughing / 2nd Choice
■ : Finishing / 1st Choice
□ : Finishing / 2nd Choice
In case hardness is under 45HRC

P	Carbon Steel / Alloy Steel			★	
	Mold Steel			★	
M	Austenitic Stainless Steel		★	☆	
	Martensitic Stainless Steel	★	☆		
	Precipitation Hardened Stainless Steel		★		
K	Gray Cast Iron				★
	Nodular Cast Iron				★
N	Non-Ferrous Metal				
S	Heat-resistant Alloy	★			
	Titanium Alloy		★		
H	Hard Materials			□	

Insert (Handed Insert shows Right-hand)		Part Number	Dimensions (inch)						Angle			CVD	MEGACOAT NANO		
			A	T	Ød	W	Z	rε	α	β	γ	CA6535	PR1535	PR1525	PR1510
 General Purpose		LOMU 100408ER-GM	0.260	0.157	0.134	0.429	0.067	0.031	-	-	-	●	●	●	●
 Low Cutting Force		LOMU 100408ER-SM	0.260	0.157	0.134	0.429	0.067	0.031	-	-	-	○	●	●	●
 Tough Edge (Heavy Milling)		LOMU 100408ER-GH	0.260	0.157	0.134	0.429	0.067	0.031	-	-	-	○	○	●	●

Inserts are sold in 10 piece boxes

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
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U.S. Stock Standard : ●
World Express (Shipping: 7-10 Business Days) : ○

Mounting the Insert

1. Be sure to remove dust and chips from the insert mounting pocket.
2. Apply anti-seize compound on portion of taper and thread of clamp screw.
   ① Attach the screw (magnetic head) to the front end of the wrench.
   ② While lightly pressing the insert against the pocket walls,
   put the screw into the hole of the insert and tighten. (Ref. to Fig. 1.)
   Align M3 screw slightly inclined.
   (Ref. to Fig. 2.) surface of the insert.

3. When tightening the screw, make sure that the wrench is parallel to the screw.
   For recommended torque, Ref. to M9
4. After tightening the screw, make sure that there is no clearance between the insert seat surface and the pocket floor of the holder or between the insert side surfaces and the pocket walls of the holder.
   If there is any clearance, remove the insert and mount it again according to the above steps.

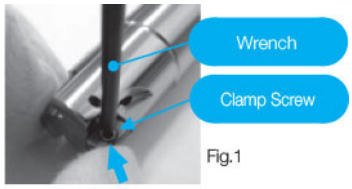


Fig.1

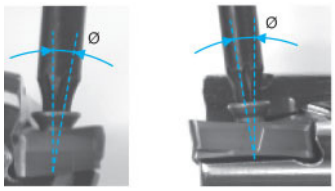


Fig.2

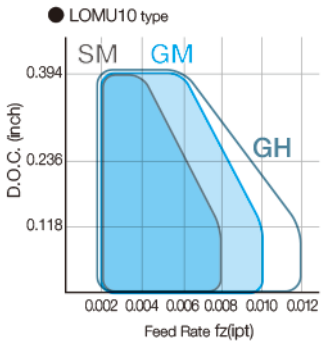
Recommended Cutting Conditions

Chipbreaker	Workpiece Material	Feed Rate fz (ipt) Toolholder Description: MEW0625~MEW0750 MEW16~MEW18	Feed Rate fz (ipt) Toolholder Description: MEW20	Recommended Insert Grade Vc (sfm): MEGACOAT NANO PR1535	MEGACOAT NANO PR1525	MEGACOAT NANO PR1510	CVD Coated Carbide CA6535
GM	Carbon Steel	0.002~**0.004**~0.008	0.003~**0.006**~0.010	☆ 390~**590**~820	★ 400~**600**~825	-	-
	Alloy Steel	0.002~**0.004**~0.006	0.003~**0.006**~0.008	☆ 330~**520**~720	★ 325~**525**~725	-	-
	Mold Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.008	☆ 260~**460**~590	★ 250~**450**~600	-	-
	Austenitic Stainless Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.006	☆ 325~**525**~650	☆ 325~**525**~650	-	-
	Martensitic Stainless Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.008	☆ 500~**650**~825	-	-	★ 600~**775**~975
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.008	★ 300~**400**~500	-	-	-
	Gray Cast Iron	0.002~**0.004**~0.007	0.003~**0.007**~0.010	-	-	★ 400~**600**~825	-
	Nodular Cast Iron	0.002~**0.003**~0.005	0.003~**0.006**~0.008	-	-	★ 325~**500**~650	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.005	0.003~**0.005**~0.006	☆ 250~**325**~500	-	-	★ 75~**100**~150
	Titanium Alloys	0.002~**0.003**~0.005	0.003~**0.006**~0.008	☆ 125~**200**~250	-	☆ 100~**150**~225	-
SM	Carbon Steel	0.002~**0.004**~0.007	0.003~**0.006**~0.008	☆ 390~**590**~820	★ 400~**600**~825	-	-
	Alloy Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.007	☆ 330~**520**~720	★ 325~**525**~725	-	-
	Mold Steel	0.002~**0.003**~0.005	0.003~**0.004**~0.006	☆ 260~**460**~590	★ 250~**450**~600	-	-
	Austenitic Stainless Steel	0.002~**0.003**~0.005	0.003~**0.004**~0.006	★ 325~**525**~650	☆ 325~**525**~650	-	-
	Martensitic Stainless Steel	0.002~**0.003**~0.005	0.003~**0.004**~0.006	☆ 500~**650**~825	-	-	★ 600~**775**~975
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.005	0.003~**0.004**~0.006	☆ 300~**400**~500	-	-	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.004	0.003~**0.004**~0.005	☆ 75~**100**~150	-	-	★ 75~**100**~150
	Titanium Alloys	0.002~**0.003**~0.005	0.003~**0.005**~0.006	★ 125~**200**~250	-	☆ 100~**150**~225	-
GH	Carbon Steel	0.002~**0.004**~0.008	0.003~**0.008**~0.012	☆ 390~**590**~820	★ 400~**600**~825	-	-
	Alloy Steel	0.002~**0.004**~0.006	0.003~**0.008**~0.010	☆ 330~**520**~720	★ 325~**525**~725	-	-
	Mold Steel	0.002~**0.003**~0.005	0.003~**0.006**~0.009	☆ 260~**460**~590	★ 250~**450**~600	-	-
	Austenitic Stainless Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.006	☆ 325~**525**~650	☆ 325~**500**~650	-	-
	Martensitic Stainless Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.008	☆ 500~**650**~825	-	-	☆ 590~**790**~980
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.008	☆ 300~**400**~500	-	-	-
	Gray Cast Iron	0.002~**0.004**~0.008	0.003~**0.009**~0.012	-	-	☆ 400~**600**~825	-
	Nodular Cast Iron	0.002~**0.003**~0.006	0.003~**0.007**~0.010	-	-	☆ 325~**500**~650	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.005	0.003~**0.005**~0.006	☆ 70~**100**~160	-	-	☆ 70~**100**~160
	Titanium Alloys	0.002~**0.003**~0.005	0.003~**0.006**~0.008	☆ 130~**200**~260	-	☆ 100~**160**~230	-

※ Machining with coolant is recommended for Titanium Alloy.

★ 1st Recommendation ☆ 2nd Recommendation

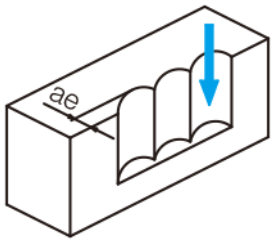
Applicable Chipbreaker Range (Shouldering)



Ramping, Helical milling and Plunge milling

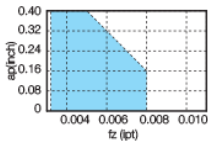
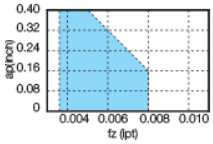
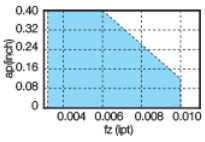
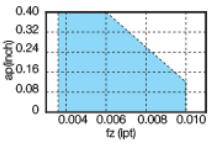
1. Available for plunge milling.
2. NOT available for ramping and helical milling, because interference between workpiece and insert may occur.

Plunge milling



Insert Part Number	Max. Width of Cut (ae)
LOMU10	0.197" (5mm)

Cutting Performance

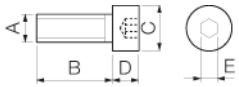
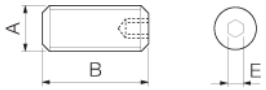
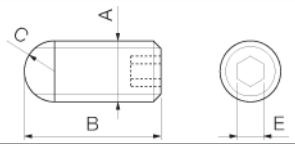
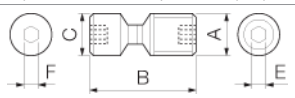
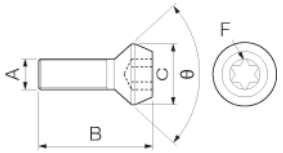
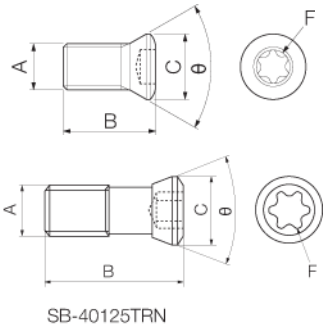
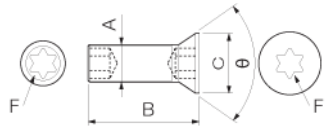
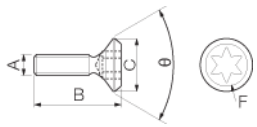
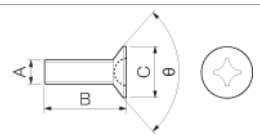
Part Number	Shouldering (Cutting width ae = ØD/2)	Slotting
MEW0625...-10 **MEW0750...-10** **MEW16...-10** **MEW18...-10**		
MEW20...-10		

<Cutting Conditions>
· Vc=600 sfm
· GM Chipbreaker
· Workpiece Material: S50C
· Overhang Length
1. End mill: Same length as ℓ of the dimension
2. Face mill: H of the dimension + minimum overhang length of the arbor

SPARE PARTS

P1 - P5

Screws

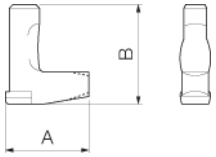
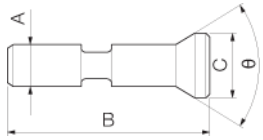
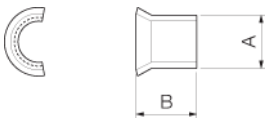
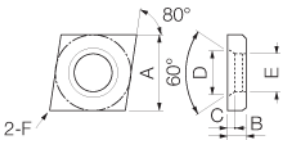
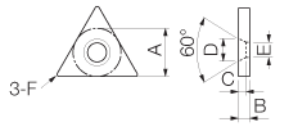
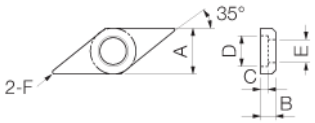
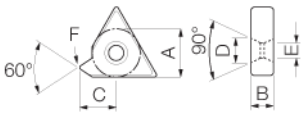
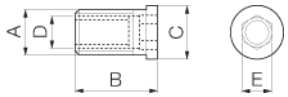
Insert	Part Number		Dimension (mm) A	B	C	D	E	F	Angle (°) α	θ	Torque (N • m)	Remarks
	HH	5X16	M5X0.8	16.0	8.5	5.0	4.0	-	-	-		
		5X25	M5X0.8	25.0	8.5	5.0	4.0	-	-	-		
	HS	3X4P	M3X0.5	3.9	-	-	1.5	-	-	-	1.0	HS4X4P and HS6X4P have a flat edge Shim screw equivalent to JIS B-1101
		4X4P	M4X0.7	3.9	-	-	2.0	-	-	-	2.0	
		6X4P	M6X0.75	3.9	-	-	3.0	-	-	-	4.0	
	HS	3X4	M3X0.5	4.0	-	-	1.5	-	-	-	1.0	
	HSB	4X8RL	M4X0.7	8.0	R2.0	-	2.0	-	-	-	2.0	R…shows Right-hand Thread L…shows Left-hand Thread
	LS	-1N	M6X1.0	17.0	6.0	-	2.5	2.5	-	-	3.0	N:Silver coated
		-2N	M8X1.0	20.0	8.0	-	3.0	3.0	-	-	4.0	
	SB	-1TR	M2X0.4	5.3	3.8	-	-	T6	-	82°	0.5	R…shows Right-hand Thread
		-2TR	M2.5X0.45	6.2	4.5	-	-	T8	-	82°	1.2	
		-3.5TR	M3.5X0.6	9.3	5.6	-	-	T15	-	82°	3.5	
		-5TR	M5X0.8	20.0	8.7	-	-	T20	-	90°	4.5	
		-5090TR	M5X0.8	9.0	6.8	-	-	T20	-	60°	4.5	
 SB-40125TRN	SB	-1635TR	M1.6X0.35	3.3	2.6	-	-	T6	-	60°	0.5	R…shows Right-hand Thread ○○IP shows Torx Plus
		-1STR	M2X0.4	5.0	3.1	-	-	T6	-	60°	0.5	
		-2035TR	M2X0.4	3.7	3.0	-	-	T6	-	60°	0.5	
		-2035TRG	M2X0.4	3.5	2.7	-	-	T6	-	60°	0.5	
		-2040TR	M2X0.4	3.8	3.0	-	-	T6	-	60°	0.5	
		-2042TRG	M2X0.4	4.1	2.7	-	-	T6	-	60°	0.5	
		-2045TRN	M2X0.4	4.3	2.8	-	-	T6	-	37°	0.5	
		-2050TR	M2X0.4	4.8	3.0	-	-	T6	-	60°	0.5	
	SB	-2250TR	M2.2X0.45	5.1	3.1	-	-	T7	-	60°	0.8	
		-2255TR	M2.2X0.45	5.5	3.5	-	-	T7	-	60°	0.8	
	SB	-2545TR	M2.5X0.45	4.6	3.5	-	-	T8	-	60°	1.2	
		-2555TRG	M2.5X0.45	5.4	3.5	-	-	T8	-	60°	1.2	
		-2560TR	M2.5X0.45	5.7	3.5	-	-	T8	-	60°	1.2	
		-2570TR	M2.5X0.45	6.8	3.5	-	-	T8	-	60°	1.2	
	SB	-3060TR	M3X0.5	5.3	4.2	-	-	T10	-	60°	2.0	
		-3065TRP	M3X0.5	6.5	4.0	-	-	8IP	-	60°	1.2	
		-3080TR	M3X0.5	8.0	4.2	-	-	T10	-	60°	2.0	
	SB	-4050TRN	M4X0.5	4.6	5.1	-	-	T10	-	57°	2.0	
		-4065TR	M4X0.7	6.7	5.5	-	-	T15	-	60°	3.5	
		-4070TRS	M4X0.7	6.7	5.5	-	-	T10	-	60°	2.0	
		-4085TR	M4X0.7	8.5	5.5	-	-	T15	-	60°	3.5	
		-40120TR	M4X0.7	12.0	5.1	-	-	T15	-	60°	3.5	
		-40125TRN	M4X0.7	12.5	5.2	-	-	T15	-	50°	3.5	
	SB	-4070TRW	M4X0.7	6.7	5.5	-	-	T8	-	60°	1.2	R…shows Right-hand Thread
		-4590TRWN	M4.5X0.75	9.3	5.6	-	-	T10	-	57°	2.0	
	SE	-40120TR	M4X0.7	12.0	5.6	-	-	T15	-	60°	3.5	
		-50125TR	M5X0.8	12.5	6.4	-	-	T20	-	60°	4.5	
	SP	3X4	M3X0.5	4.0	4.0	-	-	-	-	90°	-	With additional machining below the fillster head
		3X8	M3X0.5	8.0	4.0	-	-	-	-	90°	-	Cross recessed flat head screw equivalent to JIS…B-1111

Reference

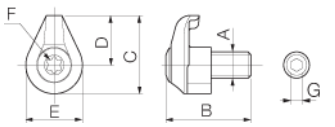
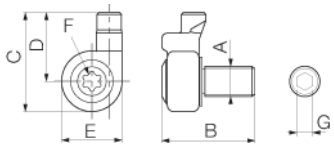
Torx and Torx Plus have different cross-section.

Torx Torx Plus

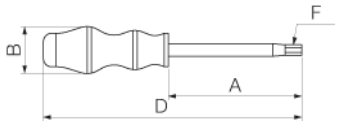
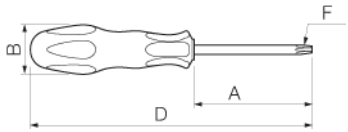
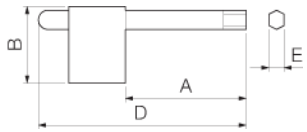
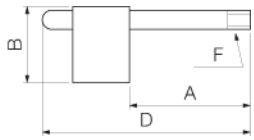
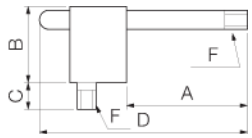
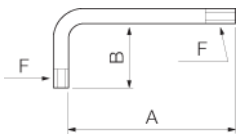
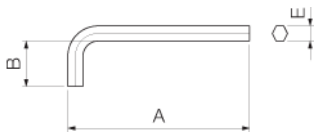
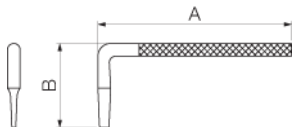
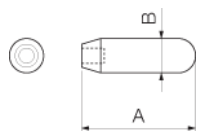
Pins / Shims

Insert	Part Number		Dimension (mm)						Angle (°)		Remarks
			A	B	C	D	E	F	α	θ	
	**LL**	**-1N**	10.30	12.0	-	-	-	-	-	-	
		-2N	13.50	13.0	-	-	-	-	-	-	
	**LPA**	**-11**	2.80	11.0	4.2	-	-	-	-	60°	
		-13	2.80	13.0	4.2	-	-	-	-	60°	
		-17	2.80	17.0	4.2	-	-	-	-	60°	
	LPF	**-11**	2.50	11.0	3.5	-	-	-	-	60°	
		-1113	2.50	13.0	3.5	-	-	-	-	60°	
		-1117	2.50	17.0	3.5	-	-	-	-	60°	
		-13	3.80	13.0	5.5	-	-	-	-	60°	
		-17	3.80	17.0	5.5	-	-	-	-	60°	
	**LSP**	**-1**	5.00	5.3	-	-	-	-	-	-	
		-2	6.50	5.6	-	-	-	-	-	-	
	**LC**	**-42N**	12.65	3.2	1.5	8.01	6.28	R0.8	-	-	Shim Pin: LSP-2
	**LT**	**-32N**	9.47	2.7	1.3	6.18	4.68	R0.8	-	-	Shim Pin: LSP-1
		-32N-20	9.47	2.7	1.3	6.18	4.68	R2.0	-	-	
	**SVN**	**-32N**	8.20	3.2	1.5	7.00	5.90	R0.6	-	-	Shim Screw: SS-4N
	**TN**	**-32**	9.52	3.2	6.5	7.00	4.20	R0.4	-	-	Shim Screw: SP3X8
	**SS**	**-4N**	M5.5X0.5	8.5	6.6	M4X0.7	4.00	-	-	-	A…External Thread / D…Internal Thread Both A and D are Right-hand Thread

Clamp Sets

Insert Handed Spare Parts show Right-hand	Part Number	Dimension (mm)							Remarks
		A	B	C	D	E	F	G	
	**CPS -5S**	M5X0.8	18.0	15.0	9.5	11.00	T15	2.5	G: Indicates hexagon hole two side widths of back side of bolts
	**LGBA -16ℸS**	M5X0.8	15.0	16.1	11.2	9.85	T15	2.0	G: Indicates hexagon hole two side widths of back side of bolts R…shows Right-hand, L…shows Left-hand
	-22ℸS	M5X0.8	15.0	17.6	12.7	9.85	T15	2.0	

Wrenches and other spare parts

Insert	Part Number	Dimension (mm)						Angle (°)		Remarks
		A	B	C	D	E	F	α	θ	
	**DT -7**	44.0	16.0	-	114	-	T7	-	-	Torx
	**DTM -6**	39.0	17.0	-	113	-	T6	-	-	Top of Torx is magnetized
	-8	70.0	24.0	-	150	-	T8	-	-	
	DTPM -8	70.0	24.0	-	150	-	8IP	-	-	○○IP shows Torx Plus Top of Torx is magnetized
	**FH -2**	42.0	20.0	-	73	2.0	-	-	-	Hexagon
	-2.5	42.0	20.0	-	73	2.5	-	-	-	
	**FT -5**									Torx
	-6	30.0	20.0	-	65	-	T6	-	-	
	-7	34.0	15.0	-	62	-	T7	-	-	
	-8	35.0	20.0	-	74	-	T8	-	-	
	-10	40.0	20.0	-	74	-	T10	-	-	
	**FT -15**	43.0	25.0	10	80	-	T15	-	-	Torx
	**LTW -8SS**	45.0	6.0	-	-	-	T8	-	-	Torx
	-10S	65.0	10.0	-	-	-	T10	-	-	
	-10SS	50.0	7.0	-	-	-	T10	-	-	
	-15S	65.0	10.0	-	-	-	T15	-	-	
	-20	57.0	20.0	-	-	-	T20	-	-	
	**LW -1.5**	45.0	14.0	-	-	1.5	-	-	-	Hexagon
	-2	50.0	16.0	-	-	2.0	-	-	-	
	-3	63.0	20.0	-	-	3.0	-	-	-	
	-4	70.0	25.0	-	-	4.0	-	-	-	
	**LTK -5**	70.0	30.0	-	-	-	-	-	-	
	**PC -1**	60.0	8.5	-	-	-	-	-	-	Punch
	-2	65.0	10.0	-	-	-	-	-	-	

TECHNICAL

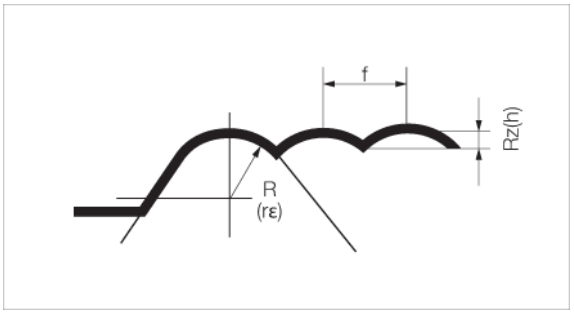
R1 - R32

Theoretical (Geometrical) Surface Roughness

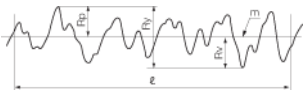
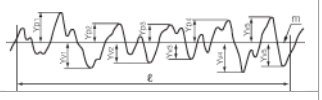
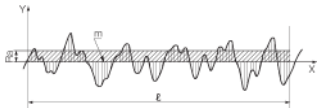
Theoretical Surface Roughness for Turning indicates the minimum roughness value from the cutting conditions and it is shown by the formula as follows:

$$Rz(h)=\frac{f^2}{8R(r\varepsilon)}x10^3$$

Rz(h) : Theoretical Surface Roughness [μm]
f : Feed Rate [mm/rev]
R (rε) : Corner Radius of Insert [mm]



How to Obtain Surface Roughness Values

Type	Symbol	How to Obtain	Explanation
Max. Height Roughness	Rz	Ry is a mean value in micron meter obtained from the distance of the highest peaks and the lowest valleys within the range of sampled reference length (l) in the direction of the center line of the roughness curve. Note) When calculating Rz, extraordinarily high or low threads are considered as damages and excluded from the calculation, and only standard lengths are used. Rz=Rp+Rv	
Ten Points Mean Roughness	RzJIS	Rz is a mean value in micron meter obtained from the distance of 5 highest peaks (Yp) and the 5 lowest valleys (Yv) measured from the center line of the roughness curve within the range of sampled reference length "l ". $RzJIS=\frac{(Yp1+Yp2+Yp3+Yp4+Yp5)+(Yv1+Yv2+Yv3+Yv4+Yv5)}{5}$	Yp1,Yp2,Yp3,Yp4,Yp5 : Distance from the mean line to highest 5 peaks in the range of sampled reference length "l " Yv1,Yv2,Yv3,Yv4,Yv5 : Distance from the mean line to the lowest 5 valleys in the range of sampled reference length "l " 
Arithmetical Mean Roughness	Ra	Ra is obtained from the following formula in micron meter, the roughness curve is expressed by y=f(x), the X-axis is in the direction of the center line and the Y-axis is the vertical magnification of the roughness curve in the range of sampled reference length "l ". $Ra=\frac{1}{\ell}\int_0^{\ell}\{f(x)\}dx$	

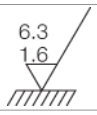
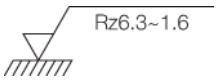
Relationship with Triangle Symbol

Arithmetical Mean Roughness Ra(μm)	Max. Height Roughness Rz(μm)	Ten Points Mean Roughness RzJIS(μm)	※(Relationship with Triangle)
0.025	0.1	0.1	▽▽▽▽
0.050	0.2	0.2	
0.100	0.4	0.4	
0.200	0.8	0.8	
0.400	1.6	1.6	▽▽▽
0.800	3.2	3.2	
1.600	6.3	6.3	
3.200	12.5	12.5	▽▽
6.300	25.0	25.0	
12.500	50.0	50.0	▽
25.000	100.0	100.0	

※ Finishing symbol (Triangle ▽ and wave ~) was removed from JIS standard in the 1994 Revision.

- How to Indicate
  ① When Ra is 1.6μm→1.6μmRa
  ② When Rz is 6.3μm→6.3μmRz
  ③ When RzJIS is 6.3μm→6.3μmRzJIS

Indication in JIS Standard

Example of Ra Indication		Example of Ry, (Rz) Indication	
① When indicating the upper limit only (when upper limit is 6.3 mRa)		① When indicating upper limit only Indicate surface roughness following the parameter symbol.	
② When indicating both lower and upper limit (when upper limit is 6.3 mRa, lower limit is 1.6 mRa)		② When indicating both lower and upper limit Indicate surface roughness as (upper limit ~ lower limit) following the parameter symbol.	

Note: The indications of Ra and Rz are different.

Caution-Symbols for Surface Roughness

The above information is based on JIS B 0601-2001. However, some symbols were revised as shown in the right table in accordance with ISO Standard from JIS B 0601-2001 version. Ten Points Mean Roughness (Rz) was eliminated from 2001 version but it still remains as RzJIS reference, since it was popular in Japan.

Type	Symbol of JIS B 0601-1994		Symbol of JIS B 0601-2001
Max. Height Roughness	Ry	→	Rz
Ten Points Mean Roughness	Rz	→	(RzJIS)
Arithmetical Mean Roughness	Ra	→	Ra

Vickers Hardness Conversion Chart

Vickers Hardness (HV)	Brinell Hardness 10mm Dia. Ball Load: 3000kgf (HB)		Rockwell Hardness[2]			Shore Hardness (HS)	Tensile Strength MPa[1]
	Standard Ball	Tungsten Carbide Ball	A Scale Load: 60kgf Diamond Point (HRA)	B Scale Load: 100kgf 1.60mm (1/16in) Ball (HRB)	C Scale Load: 150kgf Diamond Point (HRC)		
940	-	-	85.6	-	68.0	97	
920	-	-	85.3	-	67.5	96	
900	-	-	85.0	-	67.0	95	
880	-	(767)	84.7	-	66.4	93	
860	-	(757)	84.4	-	65.9	92	
840	-	(745)	84.1	-	65.3	91	
820	-	(733)	83.8	-	64.7	90	
800	-	(722)	83.4	-	64.0	88	
780	-	(710)	83.0	-	63.3	87	
760	-	(698)	82.6	-	62.5	86	
740	-	(684)	82.2	-	61.8	84	
720	-	(670)	81.8	-	61.0	83	
700	-	(656)	81.3	-	60.1	81	
690	-	(647)	81.1	-	59.7	-	
680	-	(638)	80.8	-	59.2	80	
670	-	630	80.6	-	58.8	-	
660	-	620	80.3	-	58.3	79	
650	-	611	80.0	-	57.8	-	
640	-	601	79.8	-	57.3	77	
630	-	591	79.5	-	56.8	-	
620	-	582	79.2	-	56.3	75	
610	-	573	78.9	-	55.7	-	
600	-	564	78.6	-	55.2	74	
590	-	554	78.4	-	54.7	-	2055
580	-	545	78.0	-	54.1	72	2020
570	-	535	77.8	-	53.6	-	1985
560	-	525	77.4	-	53.0	71	1950
550	505	517	77.0	-	52.3	-	1905
540	496	507	76.7	-	51.7	69	1860
530	488	497	76.4	-	51.1	-	1825
520	480	488	76.1	-	50.5	67	1795
510	473	479	75.7	-	49.8	-	1750
500	465	471	75.3	-	49.1	66	1705
490	456	460	74.9	-	48.4	-	1660
480	448	452	74.5	-	47.7	64	1620
470	441	442	74.1	-	46.9	-	1570
460	433	433	73.6	-	46.1	62	1530
450	425	425	73.3	-	45.3	-	1495
440	415	415	72.8	-	44.5	59	1460
430	405	405	72.3	-	43.6	-	1410
420	397	397	71.8	-	42.7	57	1370
410	388	388	71.4	-	41.8	-	1330
400	379	379	70.8	-	40.8	55	1290
390	369	369	70.3	-	39.8	-	1240
380	360	360	69.8	(110.0)	38.8	52	1205
370	350	350	69.2	-	37.7	-	1170
360	341	341	68.7	(109.0)	36.6	50	1130
350	331	331	68.1	-	35.5	-	1095
340	322	322	67.6	(108.0)	34.4	47	1070
330	313	313	67.0	-	33.3	-	1035
320	303	66.4	(107.0)	32.2	45	1005	
310	294	65.8	-	31.0	-	980	
300	284	65.2	(105.5)	29.8	42	950	
295	280	64.8	-	29.2	-	935	
290	275	64.5	(104.5)	28.5	41	915	
285	270	64.2	-	27.8	-	905	
280	265	63.8	(103.5)	27.1	40	890	
275	261	63.5	-	26.4	-	875	
270	256	63.1	(102.0)	25.6	38	855	
265	252	62.7	-	24.8	-	840	
260	247	62.4	(101.0)	24.0	37	825	
255	243	62.0	-	23.1	-	805	
250	238	61.6	99.5	22.2	36	795	
245	233	61.2	-	21.3	-	780	
240	228	60.7	98.1	20.3	34	765	
230	219	-	96.7	(18.0)	33	730	
220	209	-	95.0	(15.7)	32	695	
210	200	-	93.4	(13.4)	30	670	
200	190	-	91.5	(11.0)	29	635	
190	181	-	89.5	(8.5)	28	605	
180	171	-	87.1	(6.0)	26	580	
170	162	-	85.0	(3.0)	25	545	
160	152	-	81.7	(0.0)	24	515	
150	143	-	78.7	-	22	490	
140	133	-	75.0	-	21	455	
130	124	-	71.2	-	20	425	
120	114	-	66.7	-	-	390	
110	105	-	62.3	-	-	-	
100	95	-	56.2	-	-	-	
95	90	-	52.0	-	-	-	
90	86	-	48.0	-	-	-	
85	81	-	41.0	-	-	-	

- Extracted from JIS Handbook "Iron & Steel" (SAE J 417)

Note 1) 1MPa = 1N/mm²

2) Value in ( ) is not in practical use, but reference only

Metal

Class		Name of JIS Standard	Symbol
Structural Steel		Rolled Steel for Welded Structure	SM
		Re-Rolled Steel	SRB
		Rolled Steel for General Structure	SS
		Light Gauge Steel for General Structure	SSC
		Hot-Rolled Steel Plate, Sheet and Strip for Automobile Structural Use	SAPH
Steel Sheet		Cold-Rolled Steel Plate, Sheet and Strip	SPC
		Hot-Rolled Soft Steel Plate, Sheet and Strip	SPH
Steel Pipe		Carbon Steel Pipe for Ordinary Piping	SGP
		Carbon Steel Pipe for Boiler / Heat Exchanger	STB
		Seamless Steel Pipe for High Pressure Gas Cylinder	STH
		Carbon Steel Pipe for General Structural Use	STK
		Carbon Steel Pipe for Machine Structural Use	STKM
		Alloy Steel Pipe for Structural Use	STKS
		Stainless Steel Pipe for Machine Structural Use	SUS-TK
		Steel Square Pipe for General Structural Use	STKR
		Alloy Steel Pipe for Ordinary Piping	STPA
		Carbon Steel Pipe for Pressure Service	STPG
		Carbon Steel Pipe for High-Temperature Service	STPT
		Carbon Steel Pipe for High-Pressure Service	STS
		Stainless Steel Pipe for Ordinary Piping	SUS-TP
Steel for Machine Structural Use		Carbon Steel for Machine Structural Use	SxxC, SxxCK
		Aluminium Chromium Molybdenum Steel	SACM
		Chromium Molybdenum Steel	SCM
		Chromium Steel	SCr
		Nickel Chromium Steel	SNC
		Nickel Chromium Molybdenum Steel	SNCM
		Manganese Steel and Manganese Chromium Steel for Machine Structural Use	SMn, SMnC
Special Steel	Tool Steel	Carbon Tool Steel	SK
		Hollow Drill Steel	SKC
		Alloy Tool Steel	SKS, SKD, SKT
		High Speed Tool Steel	SKH
	Special Steel	Free Cutting Carbon Steel	SUM
		High Carbon Chromium Bearing Steel	SUJ
		Spring Steel	SUP
	Stainless Steel	Stainless Steel Bar	SUS-B
		Hot-Rolled Stainless Steel Plate, Sheet and Strip	SUS-HP, SUS-HS
		Cold-Rolled Stainless Steel Plate, Sheet and Strip	SUS-CP, SUS-CS
	Heat Resistant Steel	Heat-Resisting Steel Bar	SUH-B, SUH-CB
		Heat-Resisting Steel Plate and Sheet	SUH-HP, SUH-CP
	Super Alloy	Corrosion-Resisting and Heat-Resisting Superalloy Bar	NCF-B
		Corrosion-Resisting and Heat-Resisting Superalloy Plate and Sheet	NCF-P
Forged Steel		Carbon Steel Forging	SF
		Chromium Molybdenum Steel Forging	SFCM
		Nickel Chromium Molybdenum Steel Forging	SFNCM
Cast Iron		Gray Cast Iron	FC
		Spheroidal Graphite Cast Iron	FCD
		Blackheart Malleable Cast Iron	FCMB
		Whiteheart Malleable Cast Iron	FCMW
		Pearlitic Malleable Cast Iron	FCMP
Cast Steel		Carbon Cast Steel	SC
		High Tensile Strength Carbon Cast Steel & Low Alloy Cast Steel	SCC
		Stainless Cast Steel	SCS
		Heat-Resisting Cast Steel	SCH
		High Manganese Cast Steel	SCMnH
		Cast Steel for High Temperature and High Pressure Service	SCPH

Non-Ferrous Metal

Class	Name of JIS Standard	Symbol
Copper	Copper and Copper Alloy Sheet / Strip	CxxxxP CxxxxPP CxxxxR
	Copper and Copper Alloy Rod and Bar	CxxxxBD CxxxxBDS CxxxxBE
Aluminum Alloy and Aluminum Alloy Expanded Material	Aluminum and Al. Alloy Sheet / Strip	AxxxxP AxxxxPC
	Aluminum and Al. Alloy Rod, Bar, and Wire	AxxxxBE AxxxxBES AxxxxBD AxxxxBDS AxxxxW AxxxxWS
	Aluminum and Al. Alloy Extruded Shape	AxxxxS
	Aluminum and Al. Alloy Forging	AxxxxFD AxxxxFH
Magnesium Alloy Expanded Material	Magnesium Alloy Sheet and Plate	MP
	Magnesium Alloy Rod and Bar	MB
Nickel Alloy	Nickel Copper Alloy Sheet and Plate	NCuP
	Nickel Copper Alloy Rod and Bar	NCuB
Titanium Expanded Material	Titanium Rod and Bar	TB
Casting	Brass Casting	CAC20x
	High Strength Brass Casting	CAC30x
	Bronze Casting	CAC40x
	Phosphoric Bronze Casting	CAC50x
	Aluminum Bronze Casting	CAC70x
	Aluminum Alloy Casting	AC
	Magnesium Alloy Casting	MC
	Zinc Alloy Die Casting	ZDCx
	Aluminum Alloy Die Casting	ADC
	Magnesium Alloy Die Casting	MD
	White Metal	WJ

Steel

CLASS	GERMANY **DIN**	UK **BS**	FRANCE **NF**	RUSSIA **ГОСТ**	USA **AISI / SAE**	JAPAN **JIS**	CHINA **GB**
CARBON STEEL FOR MACHINE STRUCTURAL USE	C10E C10R	040A10 045A10 045M10	XC10		1010	S10C	08 10
		040A12	XC12		1012	S12C	
	C15E C15R	055M15			1015	S15C	15
			XC18		1017	S17C	
	C22 C22E C22R	070M20 C22 C22E C22R	C22 C22E C22R		1020	S20C	20
					1023	S22C	
	C25 C25E C25R	C25 C25E C22R	C25 C25E C25R		1025	S25C	25
				25Г	1029	S28C	
	C30 C30E C30R	080A30 080M30 C30 C30E C30R	C30 C30E C30R	30Г	1030	S30C	30
				30Г		S33C	
	C35 C35E C35R	C35 C35E C35R	C35 C35E C35R	35Г	1035	S35C	35
				35Г	1038	S38C	
	C40 C40E C40R	080M40 C40 C40E C40R	C40 C40E C40R	40Г	1039 1040	S40C	40
		080A42		40Г	1042 1043	S43C	
	C45 C45E C45R	C45 C45E C45R	C45 C45E C45R	45Г	1045 1046	S45C	45
		080A47		45Г		S48C	
	C50 C50E C50R	080M50 C50 C50E C50R	C50 C50E C50R	50Г	1049	S50C	50
				50Г	1050 1053	S53C	
	C55 C55E C55R	070M55 C55 C55E C55R	C55 C55E C55R		1055	S55C	55
	C60 C60E C60R	C60 C60E C60R	C60 C60E C60R	60Г	1059 1060	S58C	60
	C10E	045A10 045M10	XC10			S09CK	
	C15E		XC12			S15CK	15F
			XC18			S20CK	

Steel

CLASS	GERMANY DIN	UK BS	FRANCE NF	RUSSIA ГОСТ	USA AISI / SAE	JAPAN JIS	CHINA GB
NICKEL CHROMIUM STEEL	36NiCr6			40XH		SNC236	
	14NiCr10					SNC415	12CrNi2
	36NiCr10			30XH3A		SNC631	30CrNi3
	15NiCr13	655M13				SNC815	12Cr2Ni4
	31NiCr14					SNC836	37CrNi3
NICKEL CHROMIUM MOLYBDENUM STEEL	20NiCrMo2 20NiCrMoS2	805A20 805M20 805A22 805M22	20NCD 2		8615 8617 8620 8622	SNCM220	20CrNiMo
	40NiCrMo2-2				8637 8640	SNCM240	
						SNCM415	
	17NiCrMo6-4			20XH2M (20XHM)	4320	SNCM420	18CrNiMnMoA
	30CrNiMo8					SNCM431	
	40NiCrMo6				4340	SNCM439	40CrNiMoA
	34CrNiMo6					SNCM447	
						SNCM616	
						SNCM625	
						SNCM630	
						SNCM815	
CHROMIUM STEEL	17Cr3 17CrS3			15X 15XA		SCr415	15Cr 15CrA
				20X	5120	SCr420	20Cr
	34Cr4 34CrS4	34Cr4 34CrS4	34Cr4 34CrS4	30X	5130 5132	SCr430	30Cr
	37Cr4 37CrS4	37Cr4 37CrS4	37Cr4 37CrS4	35X	5132	SCr435	35Cr
	41Cr4 41CrS4	530M40 41Cr4 41CrS4	41Cr4 41CrS4	40X	5140	SCr440	40Cr
				45X		SCr445	45Cr 50Cr
CHROMIUM MOLYBDENUM STEEL	15CrMo4					SCM415	15CrMo
	18CrMo4 18CrMoS4			20XM		SCM418	20CrMo
	20CrMo5	708M20		20XM		SCM420	
						SCM421	
				30XM 30XMA	4131	SCM430	30CrMo 30CrMoA
						SCM432	
	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	35XM	4137	SCM435	35CrMo
	42CrMo4 42CrMoS4	708M40 709M40 42CrMo4 42CrMoS4	42CrMo4 42CrMoS4		4140 4142	SCM440	42CrMo
					4145 4147	SCM445	
						SCM822	

Steel

CLASS	GERMANY **DIN**	UK **BS**	FRANCE **NF**	RUSSIA **ГОСТ**	USA **AISI / SAE**	JAPAN **JIS**	CHINA **GB**
MANGANESE CHROMIUM STEEL MANGANESE STEEL	20Mn5	150M19			1522	SMn420	20Mn2
	34Mn5	150M36		30Г2 35Г2	1534	SMn433	30Mn2 35Mn2
	36Mn5	150M36		35Г2 40Г2	1541	SMn438	40Mn2
				40Г2 45Г2	1541	SMn443	45Mn2
	16MnCr5				5115	SMnC420	15CrMn
					5140	SMnC443	40CrMn
STRUCTURAL STEEL WITH SPECIFIED HARDENABILITY BAND (H-SHAPE STEEL)					1522H	SMn420H	
						SMn433H	
					1541H	SMn438H	
					1541H	SMn443H	
						SMnC420H	
						SMnC443H	
	17Cr3 17CrS3			15Х		SCr415H	15CrH
	17Cr3			20Х	5120H	SCr420H	20Cr1H
	34Cr4 34CrS3	34Cr4 34CrS4	34Cr4 34CrS4	30Х	5130H 5132H	SCr430H	
	37Cr4 34CrS4	37Cr4 37CrS4	37Cr4 37CrS4	35Х	5135H	SCr435H	
	41Cr4 41CrS4	41Cr4 41CrS4	41Cr4 41CrS4	40Х	5140H	SCr440H	40CrH
	15CrMo5				4118H	SCN415H	15CrMoH
	18CrMo4 18CrMoS4					SCM418H	
	18CrMo4	708H20			4118H	SCM420H	20CrMoH
	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4		4135H 4137H	SCM435H	
	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4		4140H 4142H	SCM440H	
					4145H 4147H	SCM445H	
						SCM822H	
						SNC415H	
						SNC631H	
	15NiCr13	655H13				SNC815H	12Cr2Ni4H
	21NiCrMo2	805H17 805H20 805H22	20N CD 2		8617H 8620H 8622H	SNCM220H	20CrNiMoH
	20NiCrMoS6-4				4320H	SNCM420H	20CrNi2MoH

Steel

CLASS	GERMANY DIN	UK BS	FRANCE NF	RUSSIA ГОСТ	USA UNS	USA AISI	JAPAN JIS	CHINA GB
STAINLESS STEEL			Z12CMN17-07Az		S20100	201	SUS 201	1Cr17Mn6Ni5N
		284S16		12Х17Г9АН4	S20200	202	SUS 202	1Cr18Mn8Ni5N
	X12CrNi17 7	301S21	Z11CN17-08	07Х16Н6	S30100	301	SUS 301	1Cr18Mn10Ni5Mo3N 1Cr17Ni7
	X2CrNiN18-7						SUS 301L	
	X12CrNi17 7						SUS 301J1	
		302S25	Z12CN18-09	12Х18Н9	S30200	302	SUS 302	1Cr18Ni9
					S30215	302B	SUS 302B	
	X10CrNiS18 9	303S21	Z8CNF18-09		S30300	303	SUS 303	Y1Cr18Ni9
		303S41		12Х18Н10Е	S30323	303Se	SUS 303Se	Y1Cr18Ni9Se
	X5CrNi18 10	304S31	Z7CN18-09	08Х18Н10	S30400	304	SUS 304	0Cr18Ni9
	X2CrNi19 11	304S11	Z3CN19-11	03Х18Н11	S30403	304L	SUS 304L	00Cr18Ni10
			Z6CN19-09Az		S30451	304N	SUS 304N1	0Cr18Ni9N
					S30452		SUS 304N2	0Cr19Ni10NbN
	X2CrNiN18 10		Z3CN18-10Az		S30453	304LN	SUS 304LN	00Cr18Ni10N
							SUS 304J1	
							SUS 304J2	
					S30431	S30431	SUS 304J3	
	X5CrNi18 12	305S19	Z8CN18-12	06Х18Н11	S30500	305	SUS 305	1Cr18Ni12
							SUS 305J1	
			Z10CN24-13		S30908	309S	SUS 309S	0Cr23Ni13
		310S31	Z8CN25-20	10Х23Н18	S31008	310S	SUS 310S	0Cr25Ni20
	X5CrNiMo17 12 2	316S31	Z7CND17-12-02		S31600	316	SUS 316	0Cr17Ni12Mo2
	X5CrNiMo17 13 3		Z6CND18-12-03					
	X2CrNiMo17 13 2	316S11	Z3CND17-12-02		S31603	316L	SUS 316L	00Cr17Ni14Mo2
	X2CrNiMo17 14 3		Z3CND17-13-03	03Х17Н14М3				
					S31651	316N	SUS 316N	0Cr17Ni12Mo2N
	X2CrNiMoN17 12 2		Z3CND17-11Az		S31653	316LN	SUS 316LN	00Cr17Ni13Mo2N
	X2CrNiMoN17 13 3		Z3CND17-12Az					
	X6CrNiMoTi17 12 2		Z6CNDT17-12	08Х17Н13М2Т	S31635		SUS 316Ti	
							SUS 316J1	0Cr18Ni12Mo2Cu2
							SUS 316J1L	00Cr18Ni14Mo2Cu2
		317S16			S31700	317	SUS 317	0Cr19Ni13Mo3
	X2CrNiMo18 16 4	317S12	Z3CND19-15-04		S31703	317L	SUS 317L	00Cr19Ni13Mo3
			Z3CND19-14Az		S31753		SUS 317LN	
							SUS 317J1	0Cr18Ni16Mo5
							SUS 317J2	
							SUS 317J3L	
					N08367		SUS 836L	
		904S14	Z2NCDU25-20		N08904	N08904	SUS 890L	
	X6CrNiTi18 10	321S31	Z6CNT18-10	08Х18Н10Т	S32100	321	SUS 321	1Cr18Ni9Ti 0Cr18Ni10Ti
	X6CrNiNb18 10	347S31	Z6CNNb18-10	08Х18Н12Б	S34700	347	SUS 347	0Cr18Ni11Nb
			Z6CN18-16		S38400	384	SUS 384	
		394S17	Z2CNU18-10		S30430	304Cu	SUS XM7	0Cr18Ni9Cu3
			Z15CNS20-12		S38100		SUS XM15J1	0Cr18Ni13Si4
					S32900	329	SUS 329J1	0Cr26Ni5Mo2
			Z3CNDU22-05Az	08Х21Н6М2Т	S39240	S31803	SUS 329J3L	
			Z3CNDU25-07Az		S39275	S31260	SUS 329J4L	

Steel

CLASS	GERMANY DIN	UK BS	FRANCE NF	RUSSIA ГОСТ	USA UNS	USA AISI	JAPAN JIS	CHINA GB
STAINLESS STEEL	X6CrAl13	405S17	Z8CA12		S40500	405	SUS 405	0Cr13Al 0Cr13
			Z3C14				SUS 410L	00Cr12
					S42900	429	SUS 429	
	X6Cr17	430S17	Z8C17	12Х17	S43000	430	SUS 430	1Cr17
	X7CrMoS18		Z8CF17		S43020	430F	SUS 430F	Y1Cr17
	X6CrTi17		Z4CT17		S43035		SUS 430LX	
	X6CrNb17		Z4CNb17				SUS 430J1L	
	X6CrMo17 1	434S17	Z8CD17-01		S43400	434	SUS 434	1Cr17Mo
					S43600	436	SUS 436L	
							SUS 436J1L	
			Z3CDT18-02		S44400	444	SUS 444	
					S44700		SUS 447J1	00Cr30Mo2
			Z1CD26-01		S44627		SUS XM27	00Cr27Mo
					S40300	403	SUS 403	1Cr12
	X10Cr13	410S21	Z13C13		S41000	410	SUS 410	1Cr13
	X6Cr13	403S17	Z8C12	08Х13	S41008	410S	SUS 410S	
							SUS 410F2	
	X12CrS13				S41025		SUS 410J1	1Cr13Mo 1Cr12Mo
		416S21	Z11CF13		S41600	416	SUS 416	Y1Cr13
	X20Cr13	420S29	Z20C13	20Х13	S42000	420	SUS 420J1	2Cr13
	X30Cr13	420S37	Z33C13	30Х13	S42000	420	SUS 420J2	3Cr13
			Z30CF13		S42020	420F	SUS 420F	Y3Cr13
							SUS 420F2	
							SUS 429J1	
	X20CrNi17 2	431S29	Z15CN16-02	20Х17Н2	S43100	431	SUS 431	1Cr17Ni2
			Z70C15		S44002	440A	SUS 440A	7Cr17
					S44003	440B	SUS 440B	8Cr17
			Z100CD17	95Х18	S44004	440C	SUS 440C	9Cr18 11Cr17 9Cr18Mo
					S44020	S44020	SUS 440F	Y11Cr17
	X5CrNiCuNb16-4		Z6CNU17-04		S17400	S17400	SUS 630	0Cr17Ni4CuNb
	X7CrNiAl17 7		Z9CNA17-07	09Х17Н7 Ю	S17700	S17700	SUS 631	0Cr17Ni7Al
							SUS 632J1	

Representative Classification of Stainless Steel

Stainless Steel (Austenitic Related)

JIS	
SUS201	SUS309S
SUS202	SUS310S
SUS301	SUS316
SUS302	SUS316L
SUS302B	SUS316N
SUS303	SUS317
SUS303Se	SUS317L
SUS304	SUS321
SUS304L	SUS347
SUS304N1	SUS384
SUS304N2	SUSXM7
SUS305	SUSXM15J1
SUS308	

Stainless Steel (Ferritic Related)

JIS
SUS405
SUS429
SUS430
SUS430F
SUS434
SUSXM27

Stainless Steel (Martensitic Related)

JIS
SUS403
SUS410
SUS410S
SUS416
SUS420J1
SUS420F
SUS431
SUS440A
SUS440B
SUS440C
SUS440F

Stainless Steel (Precipitation Hardened Related)

JIS
SUS630
SUS631

Steel

CLASS	GERMANY DIN	UK BS	FRANCE NF	RUSSIA ГОСТ	USA UNS	USA AISI	JAPAN JIS	CHINA GB
HEAT RESISTING STEEL		331S42	Z35CNWS14-14	45Х14Н14В2М			SUH 31	
		349S52	Z52CMN21-09Az				SUH 35	
	X53CrMnNi21-9	349S54	Z55CMN21-09Az	55Х20 Г 9АН4	S63008		SUH 36	5Cr21Mn9Ni4N
		381S34			S63017		SUH 37	2Cr21Ni12N
							SUH 38	
		309S24	Z15CN24-13		S30900	309	SUH 309	2Cr23Ni13
	CrNi2520	310S24	Z15CN25-20	20Х25Н20С2	S31000	310	SUH 310	2Cr25Ni20
			Z12NCS35-16		N08330	N08330	SUH 330	1Cr16Ni35
			Z6NCTV25-20		S66286		SUH 660	0Cr15Ni25Ti2MoAlVB
					R30155		SUH 661	
	CrAl1205						SUH 21	
	X6CrTi12	409S19	Z6CT12		S40900	409	SUH 409	
			Z3CT12				SUH 409L	
			Z12C25	15Х28	S44600	446	SUH 446	2Cr25N
	X45CrSi9-3	401S45	Z45CS9		S65007		SUH 1	4Cr9Si2
			Z40CSD10	40Х10С2М			SUH 3	4Cr10Si2Mo
		443S65	Z80CSN20-02				SUH 4	8Cr20Si2Ni
				40Х 9С2			SUH 11	
				20Х12ВНМБФР			SUH 600	2Cr12MoVNbN
					S42200		SUH 616	2Cr12NiMoWV

Representative Classification of Heat Resisting Steel

Heat Resisting Steel (Austenitic Related)

JIS
SUH31
SUH35
SUH36
SUH37
SUH38
SUH309
SUH310
SUH330
SUH660
SUH661

Heat Resisting Steel (Ferritic Related)

JIS
SUH21
SUH409
SUH446

Heat Resisting Steel (Martensitic Related)

JIS
SUH1
SUH3
SUH4
SUH11
SUH600
SUH616

Steel

CLASS	GERMANY **DIN**	UK **BS**	FRANCE **NF**	RUSSIA **ГОСТ**	USA **AISI / SAE**	JAPAN **JIS**	CHINA **GB**
CARBON TOOL STEEL			C140E3U	Y13		SK140 (SK1)	T13
			C120E3U	Y12	W1-11 1/2	SK120 (SK2)	T12
	C105W1		C105E2U	Y11	W1-10	SK105 (SK3)	T11
			C90E2U	Y10	W1-9	SK95 (SK4)	T10
	C80W1		C90E2U C80E2U	Y8Г Y9	W1-8	SK85 (SK5)	T8Mn T9
	C80W1		C80E2U C70E2U	Y8		SK75 (SK6)	T8
	C70W2		C70E2U	Y7		SK65 (SK7)	T7
HIGH SPEED TOOL STEEL		BT1	HS18-0-1	P18	T1	SKH2	W18Cr4V
	S18-1-2-5	BT4	HS18-1-1-5	P18K5Ф2	T4	SKH3	W18Cr4VCo5
		BT5	HS18-0-2-9	P18K5Ф	T5	SKH4	W18Cr4V2Co8
	S12-1-4-5	BT15	HS12-1-5-5		T15	SKH10	W12Cr4V5Co5
	S6-5-2	BM2	HS6-5-2	P6M5	M2	SKH51	W6Mo5Cr4V2
				P6M5Ф3	M3-1	SKH52	CW6Mo5Cr4V2 W6Mo5Cr4V3
	S6-5-3		HS6-5-3	P6M5Ф3	M3-2	SKH53	CW6Mo5Cr4V3
		BM4	HS6-5-4		M4	SKH54	
	S6-5-2-5	BM35	HS6-5-2-5HC	P6M5K5	M35 M41	SKH55	W6Mo5Cr4V2Co5 W7Mo5Cr4V2Co5
					M36	SKH56	
	S10-4-3-10	BT42	HS10-4-3-10			SKH57	
			HS2-9-2		M7	SKH58	W2Mo9Cr4V2
	S2-10-1-8	BM42	HS2-9-1-8		M42	SKH59	W2Mo9Cr4VCo8
ALLOY TOOL STEEL				ХВ4	F2	SKS11	
	105WCr6		105WCr5	ХВГ		SKS2	
						SKS21	W
						SKS5	
					L6	SKS51	
						SKS7	
			C140E3UCr4	13Х		SKS8	Cr06
				6ХВ2С 5ХВ2СФ	S1	SKS4	5CrW2Si 6CrW2Si
				4ХВ2С	S1	SKS41	4CrW2Si
		BW2	100V2		W2-9 1/2	SKS43	
					W2-8	SKS44	
				9ХВГ		SKS3	9CrWMn
	105WCr6		105WCr5	ХВГ		SKS31	CrWMn
						SKS93	
						SKS94	
						SKS95	8MnSi
	X210Cr12	BD3	X200Cr12	Х12	D3	SKD1	Cr12
	X153CrMoV12			Х12МФ	D2	SKD10	Cr12Mo1V1
	X153CrMoV12	BD2	X160CrMoV12		D2	SKD11	Cr12MoV
		BA2	X100CrMoV5		A2	SKD12	Cr5Mo1V
			X32WCrV3			SKD4	
	X30WCrV9-3	BH21	X30WCrV9		H21	SKD5	3Cr2W8V
	X38CrMoV51	BH11	X38CrMoV5	4Х5МФС	H11	SKD6	4Cr5MoSiV
	X40CrMoV51	BH13	X40CrMoV5	4Х5МФ1С	H13	SKD61	4Cr5MoSiV1
		BH12	X35CrWMoV5	3Х3М3Ф	H12	SKD62	
	X32CrMoV33	BH10	32CrMoV12-18		H10	SKD7	4Cr3Mo3SiV
		BH19			H19	SKD8	
			55CrNiMoV4			SKT3	
	55NiCrMoV6	BH224 / 5	55NiCrMoV7	5ХНМ		SKT4	5CrNiMo

Steel

CLASS	GERMANY **DIN**	UK **BS**	FRANCE **NF**	RUSSIA **ГОСТ**	USA **AISI / SAE**	JAPAN **JIS**	CHINA **GB**
SPRING STEEL				75 80 85	1075 1078	SUP3	
	56SiCr7		60Si7	60С2		SUP6	55Si2Mn
	61SiCr7		60Si7	60С2Г	9260	SUP7	60Si2Mn 60Si2MnA
	55Cr3		55Cr3		5155	SUP9	55CrMnA
	55Cr3		60Cr3		5160	SUP9A	60CrMnA
	50CrV4	735A51, 735H51	51CrV4	ХФА50ХГФА	6150	SUP10	50CrVA
	51CrV4			50ХГР	51B60	SUP11A	60CrMnBA
	54SiCr6	685A57, 685H57	54SiCr6		9254	SUP12	
	60CrMn3-2	705A60, 705H60	60CrMo4		4161	SUP13	60CrMnMoA
FREE CUTTING CARBON STEEL					1110	SUM11	
					1108	SUM12	Y12
					1212	SUM21	
	9SMn28	(230M07)	S250		1213	SUM22	Y15
	9SMnPb28		S250Pb		12L13	SUM22L	Y12Pb
					1215	SUM23	
						SUM23L	
	9SMnPb28		S250Pb		12L14	SUM24L	Y15Pb
	9SMn36		S300			SUM25	
	15S10				1117	SUM31	
						SUM31L	
		210M15, 210A15	(13MF4)			SUM32	Y20
			(35MF6)		1137	SUM41	Y30 Y35
			(45MF6.1)		1141	SUM42	Y40Mn
		(226M44)	(45MF6.3)		1144	SUM43	
CARBON CHROMIUM BEARING STEEL					51100	SUJ1	GCr4
	100Cr6		100Cr6	ШХ15	52100	SUJ2	GCr5
					ASTM A 485 Grade 1	SUJ3	GCr15SiMn
						SUJ4	GCr15SiMo
						SUJ5	GCr18Mo

Cast Iron

CLASS	GERMANY DIN	UK BS	FRANCE NF	RUSSIA ГОСТ	USA AISI / SAE	JAPAN JIS	CHINA GB
GRAY CAST IRON		100		СУ10	NO.20	FC100	HT100
	GG15	150	FGL150	СУ15	NO.30	FC150	HT150
	GG20	200	FGL200	СУ20	NO.35	FC200	HT200
	GG25	250	FGL250	СУ25	NO.45	FC250	HT250
	GG30	300	FGL300	СУ30	NO.50	FC300	HT300
	GG35	350	FGL350	СУ35	NO.60	FC350	HT350
	GG40		FGL400	СУ40			
NODULAR CAST IRON	GGG40	400/17	FGS370-17	ВУ40	60-40-18	FCD400	QT400-18
		420/12	FGS400-12	ВУ45	65-45-12	FCD450	QT450-10
	GGG50	500/7	FGS500-7	ВУ50	70-50-05	FCD500	QT500-7
	GGG60	600/7	FGS600-2	ВУ60	80-60-03	FCD600	QT600-3
	GGG70	700/2	FGS700-2	ВУ70	100-70-03	FCD700	QT700-2
	GGG80	800/2	FGS800-2	ВУ80	120-90-02	FCD800	QT800-2
		900/2		ВУ100			QT900-2

Non-Ferrous Metal

CLASS	GERMANY DIN	UK BS	FRANCE NF	RUSSIA ГОСТ	USA AISI / SAE	JAPAN JIS	CHINA GB
ALUMINUM ALLOY	A199.99R			A99	1199		1A99
	A199.98R			A97			1A97
				A95			1A95
	A199.90	1080(1A)	1080A	A8		A1080	1A80
	A199.50	1050(1B)	1050A	A5	1050	A1050	1A50
	AlMg2.5	NS4	5052	Amg	5052	A5052	5A02
		NS5		AMg3			5A03
	AlMg5	NB6		AMg5V	5056	A5056	5A05
		NG61	5957		5456	A5556	5A30
	AlCu2.5Mg0.5		2117	D18	2036	A2117	2A01
	AlCuMg1	HF15	2017S	D1		A2017	2A11
	AlCuMg2		2024	D16AVTV	2124	A2024	2A12
					2319		2B16
				AK4		A2N01	2A80
				AK2	2218	A2018	2A90
	AlCuSiMn		2014	AK8	2014	A2014	2A14
		6061	6061		6061	A6061	
	AlZnMgCu1.5		7075	V95P	7175	A7075	7A09
ALUMINUM ALLOY CASTING	G-AlSi7Mg	LM25			356.2	AC4C	ZAlSi7Mn
	G-Al12	LM6	A-S12-Y4	AL2	413.2	AC3A	ZAlSi12
				AL5	355.2		ZAlSi5Cu1Mg
	G-Al12(Cu)				413.0	AC8A	ZAlSi2Cu2Mg1
				AL19			ZAlCu5Mn
					201.0		ZAlCu5MnCdVA
	G-AlMg10	LM10	AG11	AL8	520.2		ZAlMg10
	G-AlMg5Si			AL13			ZAlMg5Si

Molded Chipbreaker Cross Reference Table

Positive Inserts (For Automatic Lathe)

- This table is Kyocera´s own estimation based on publications and is not authorized by companies mentioned in it.

	Cutting Range	Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Carbon Steel / Alloy Steel	Minute ap	CF	-	-	-	-	-	-	-	01	-	-
	Finishing	CK GF	ASF	JQ	FP FV SMG	AZ7 AMX ZR	PF XF	FF1	SI FC	PF	11 UF FP	PF SM
	Finishing - Medium	GQ SK	ACB FT	JE	LP AM MV	AM3 YL	PM XM	F1 MF2	SU	PS	LF	14
	Medium	GK	-	J	MP Standard	QD CL	PR	F2	SC	PM	MF MP	Standard
Stainless Steel	Finishing	MQ	-	MP	FM FV SV	-	MF	-	LU	PF PSF	FW FP MW	WF
Non-ferrous Metals	Finishing - Medium	AH	ALU	-	AZ	-	AL	AL	AG AW	AL	HP	AF AS

Positive Inserts

	Cutting Range	Kyocera		Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
		General Chipbreaker	Chipbreaker for Sticky Material / Soft Steel										
Carbon Steel / Alloy Steel	Minute ap	CF	-	-	-	-	-	-	-	-	01	-	-
	Finishing	DP GP PP VF	XP	ASF	-	FV SQ FP SMG	AZ3 AMX AZ7	PF UF XF	FF1	FB FC FK FP LU	PF PSF 23	11 GF UF FP	PF SM
	Finishing - Medium ①	HQ	XQ	ACB FT	JE	MQ MV LP	AF1	PM UM SMC	F1	LB SF SU	PS PSS 24	LF	14
	Finishing - Medium ②	GK	-	BM	JQ	No Indication	QD CL	PF PM XM	MF2	-	-	-	-
	Medium	Standard	-	-	J	MP Standard	AM3	PR UR KM XR	F2	MU SC	PM	GM MP MR	Standard
Stainless Steel	Finishing	MQ	-	-	MP	FM FV SV	-	MF MMC	-	LU	PF PSF	FW FP MW	WF
Non-ferrous Metals	Finishing - Medium	AH	-	ALU	-	AZ	-	AL	AL	AG AW	AL	HP	AF AS

Cera-Notch Conversion Chart

Insert Style	Kyocera	Horizon	Tool-Flo	Kennametal	RTW	Valenite	Sandvik	Mitsubishi
Notch Style Grooving Insert								
Face Grooving	KCFP	HF	FLF	NF	-	-	TLF*	EF
ID/OD Grooving	KCG/KCGP	HG	FLG	NG	PG	VLG	TLG*	EG
ID/OD with Chipbreaker	KCGP MY	HG RK-LK	FLG CB	NG RK-LK	PG RK-LK	-	-	EG RK-LK
ID/OD with Positive Rake	KCGP	HGP	FLGP	NGP	-	VLGP	TLGP*	EGP
ID/OD Deep Grooving	KCGDP	HGD	FLGD	NGD	PGD	-	-	EGD
Full Nose Radius	KCRP	HR	FLR	NR	PR	VLR	TLR*	EGR
Full Nose Radius with Postive Rake	KCRP	HRP	FLRP	NRP	PRP	VLRP	TLRP*	-
Notch Style Threading Insert								
60° V Partial Profile	KCT	HT	FLT	NT	PT	VLT	TLT*	ET
60° V Fine Pitch Positive	KCTK	HTK	FLTK	NTK	PTK	VLTK	TLTK*	-
60° V Postive	KCTP	HTP	FLTP	NTP	PTP	VLTP	TLTP*	-

* Sandvik inserts require a Kyocera or industrial standard clamp due to different clamping system.

CVD Coated Carbide (Turning)

- This table is Kyocera´s own estimation based on publications and is not authorized by companies mentioned in it.

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
P (Steel)	P01	CA510 CA5505	JC110V	HG8010 HC5000 HG3305	UE6105 UE6005 UE6015	-	GC4005 GC4205	TP0500 TP1000	AC700G AC810P	T9005 T9105	KCP05 KCK05 KC9105	IC8150 IC9150
	P10	CA510 CA515 CA5505 CA5515	JC110V JC215V	GM10 GM20 GM8015 HG8010	UE6105 UE6110 UE6005 UE6010 UE6020	CP2 CP5 CP7	GC4205 GC4015 GC3115 GC4215 GC4315	TP1000 TP1500 TP100	AC700G AC2000 AC810P AC820P	T9005 T9105 T9015 T9115	KCP10 KCM15 KC9010 KC9110	IC8150 IC9150 IC9250
	P20	CA525 CA5515 CA5525 CR9025	JC110V JC215V	GM20 GM8020 HG8025	MC6025 UC6010 UE6110 UE6020	CP2 CP5 CP7	GC4025 GC4215 GC4220 GC4225 GC4325	TP2000 TP2500 TP200	AC2000 AC3000 AC820P AC830P	T9015 T9115 T9025 T9125	KCP25 KC9125 KC9225 KC9325	IC8250 IC9125 IC9250 IC9350
	P30	CA525 CA5525 CA530 CA5535 CR9025	JC215V JC325V	GM25 GM8035 HG8025	MC6025 UE6020 UE6035 UH6400	-	GC4225 GC4230 GC4235 GC2135	TP2500 TP2000 TP3500 TP200	AC3000 AC630M AC830P ACP100	T9125 T9035 T9135 T3130	KCP30 KCM25 KC9040 KC9140	IC635 IC8350 IC9350
	P40	CA530 CA5535	JC325V JC450V JC540V	GX30	UE6035 UH6400	-	GC4235 GC4240	TP40	AC630M AC830P ACP100	T9035 T3130	KCP40 KC9140 KC9240	IC635
M (Stainless Steel)	M10	CA6515	JC110V	GM10	US7020 MC7015	CP2 CP5	GC2015	TP1500 TP100	AC610M	T9015 T9115	KCM15 KC9010 KC9110 KC9210	IC8250 IC9250 IC9350
	M20	CA6525	JC110V JC215V	GM8020 HG8025	US7020 MC7025	CP2 CP5	GC1515 GC2015 GC2025	TM2000 TP200	AC6030M AC610M AC630M AC830P	T6020 T6120 T9115 T9125	KCM25 KC9025 KC9125 KC9225	IC6015 IC8350 IC9250 IC9350
	M30	-	JC215V JC325V JC525X	GM25 GM8035	MC7025 US735	-	GC2040 GC235	TM4000 TP300	AC6030M AC630M AC830P	T6030 T6130 T9125	KCP40 KCM35 KC9240	IC6025 IC8350 IC9350 IC4050
	M40	-	JC525X	GX30	US735	-	-	TP40	-	-	KC9045 KC9245	IC635
K (Cast Iron)	K01	CA4010 CA4505 CA5505	JC105V JC605X JC605W JC050W	HG3305 HG3315 HX3505 HX3515	MC5005 UC5105 UC5015	CP1	GC3205 GC3210	TK1000 TH1000 TK1001	AC300G AC405K AC410K	T5105 T5010	KC9105 KC9315 KCK05	IC428 IC5010 IC9007 IC9150
	K10	CA4010 CA4015 CA4505 CA4515 CA5505	JC050W JC110V JC605X JC605W JC610	GM8015 HX3515 HG8010 HG3315	UC5015 UC5105 UC5115 UE6010 MC5015	CP1 CP2 CP5	GC3205 GC3210 GC3215 GC3115	TK1000 TK2000 TK2001 MK1500	AC700G AC410K AC415K	T5105 T5115 T5010	KCP10 KC9110 KC9120 KC9315 KCK15	IC418 IC428 IC9015 IC9007
	K20	CA4115 CA4120 CA4515	JC110V JC215V JC605X JC605W JC610	GM8020 HG8025	MC5015 UE6010 UC5115	CP2 CP5	GC4225 GC3215 GC3220	TK2000 TX150 TP200	AC700G AC820P AC420K	T5115 T5125 T5020	KCP25 KC9125 KC9320 KC9325 KCK20	IC418 IC9015
	K30	-	JC215V JC610	GM25	-	-	GC3040	TP2500 TP200	-	T5125 T9125	KC9320	-

PVD Coated Carbide (for Turning)

• This table is Kyocera´s own estimation based on publications and is not authorized by companies mentioned in it.

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
P (Steel)	P01	PR1005	JC5003	-	-	-	-	-	ACZ150	-	KC5510	-
	P10	PR930 PR1005 PR1025 PR1115 PR1215 PR1425 PR1225	JC5003 JC5030	CY15 CY150 IP2000	VP10MF	VM1 TM1 TA1 TAS DT4 DM4	GC1025	CP200	ACZ150 ACZ310 AC520U	AH710	KC5010 KC5510 KU10T	IC507 IC807 IC907
	P20	PR930 PR1025 PR1115 PR1215 PR1425 PR1225	JC5015 JC5030 JC5040	CY150 IP2000	VP10RT VP15TF VP20MF UP20M VP20RT	QM1 VM1 TA1 TAS	GC1020 GC1025 GC4125 GC1125	CP250	ACZ310 ACZ330 AC520U	AH710 AH725 AH730 SH730	KC5025 KC5525 KC7215 KC7315 KU25T	IC507 IC907 IC908
	P30	PR1025 PR1225	JC5015 JC5040	CY250 CY9020 HC844 IP3000	VP10RT VP15TF VP20MF UP20M	ZM3 QM3 TAS	GC1125 GC1145 GC1115 GC1105	CP500	ACZ330 ACZ350 AC530U	GH330 AH120 AH740	KC7015 KC7020 KC7235 KU25T	IC328 IC928 IC3028
	P40	-	JC5040	CY250 HC844		ZM3 QM3 TAS	GC1145 GC2145	CP500	ACZ350	AH140 AH740 J740	KC7030 KC7040 KC7140	IC328 IC3028
M (Stainless Steel)	M10	PR1025 PR1215 PR1225	JC5003	IP050S	VP10MF VP10RT	VM1 TM1 TA1	GC1005 GC1025 GC1105 GC15	TS2000 CP200 CP250	EH510Z ACZ150 AC510U	AH710	KC5010 KC5510 KC6005 KCU10	IC507 IC520 IC807 IC907
	M20	PR930 PR1025 PR1125 PR1215 PR1425 PR1225	JC5015 JC5030 JC5040 JC8015	IP100S	VP10RT VP15TF VP20MF UP20M VP20RT	QM1 VM1 TA1 TAS DT4 DM4	GC1025 GC1115 GC4125 GC1125 GC30	TS2500 CP200 CP250 CP500	EH520Z ACZ150 ACZ310 AC520U	AH630 AH725 AH730 GH330 GH730 SH730	KC5025 KC5525 KC7020 KC7025 KCU25	IC308 IC507 IC907 IC908 IC3028
	M30	PR1125 PR1225	JC5015 JC5030 JC5040	CY250 CY9020	VP15TF VP20MF UP20M MP7035	ZM3 QM3 TAS	GC1020 GC2035 GC2030	CP500	ACZ330 ACZ350 AC530U AC6040M	AH120 AH725	KC7030 KC7225	IC908 IC1008 IC1028 IC3028
	M40	-	-	-	MP7035	ZM3 QM3 TAS	GC2145 GC1145		AC6040M ACZ350	J740 AH140 AH645	-	IC228 IC928 IC328
K (Cast Iron)	K01	-	JC5003	-	-	-	-	-	EH10Z	AH110	KC5515	IC910
	K10	PR905 PR1215	JC5003 JC5015	CY100H CY10H	VP05RT	TA1 TM1	GC1010	TS2000 CP200	EH10Z EH510Z AC510U	GH110 AH110	KC5010 KC7210	IC807 IC910 IC507 IC908
	K20	PR905 PR1215	JC5015	IP2000 CY9020	VP10RT VP15TF VP20RT	QM1 TA1	GC1020 GC1120	TS2500 CP200 CP250	EH20Z ACZ310 AC520U AC530U	AH120 AH725	KC5025 KC5525 KC7015 KC7215 KC7315	IC508 IC908
	K30	-	-	-	VP15TF VP20RT	QM3 TA3	GC1030	CP500	ACZ310	-	KC7225	IC508 IC908

Cermet (Turning)

• This table is Kyocera´s own estimation based on publications and is not authorized by companies mentioned in it.

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
P (Steel)	P01	TN6010 **PV7010**	LN10 CX50	CH350	**AP25N** **VP25N** NX1010	T3N T15 **Q15**	-	-	T110A T1000A	NS520 **GT530** **GT720** **J530**	KT1120 KT125 HTX	IC20N **IC520N**
	P10	TN620 TN60 TN6010 TN6020 **PV7010** **PV720** **PV7020** **PV7025**	LN10 CX50 CX75 NIT **PX75**	CH350 **CZ25**	NX2525 **AP25N** **VP25N**	T15 **C7Z** **Z15**	CT5015 CT525	TP1020 CM CMP	**T1500Z** **T2000Z** T1200A T1500A	NS9530 NS520 **GT9530** **GT530** **GT730**	**KT315** KT175 HT2	IC20N **IC520N** **IC530N** IC75T
	P20	TN620 TN90 TN6020 **PV720** **PV7020** **PV7025**	CX50 CX75 CX90 NAT **PX90**	CH550 CH7030 **CZ1025** **CZ25**	**MP3025** NX2525 NX3035 **AP25N** **VP45N**	T15 C7X **C7Z**	CT525 CT530 **GC1525**	TP1020 C15M TP1030	T1200A T1500A **T1500Z** **T2000Z** **T3000Z**	NS9530 NS530/730 **GT9530** **GT530/730**	PS5 **KT5020**	IC20N **IC520N** **IC530N** IC75T IC30N
	P30	-	CX90 CX99 SUZ	-	NX4545 **VP45N**	N40 C7X	CT530 **GC1525**	TP1030	**T3000Z** T250A	NS740	-	IC75T IC30N
M (Stainless Steel)	M10	TN620 TN60 TN6020 **PV720** **PV7020** **PV7025**	LN10	CH350	NX2525 **AP25N** **VP25N**	T15 C7X **C7Z** **Z15**	CT5015 CT525	CM CMP	T110A T1000A **T2000Z**	NS520 **J530**	KT1120 **KT315** KT125	IC20N **IC520N**
	M20	TN620 TN90 TN6020 **PV720** **PV7020** **PV7025**	CX50 CX75 **PX75** NIT NAT	CH550 CH7030 **CZ1025**	NX2525 NX3025 **AP25N** **VP25N**	C7X **C7Z** **Q15**	CT530 **GC1525**	TP1020 C15M	T1500A **T2000Z**	NS530 NS730 **GT530** **GT730**	KT175 HT2 PS5 **KT5020**	IC30N **IC530N**
	M30	-	CX75 CX90 **PX90** CX99 SUZ	**CZ25**	NX4545	C7X	-	TP1030	**T3000Z** T250A	NS740	-	-
K (Cast Iron)	K01	**PV7005**	LN10	-	**AP25N** **VP25N**	T3N T15 **Q15**	-	-	T110A T1000A	NS520	KT1120	-
	K10	TN60 TN6010 **PV7005** **PV7010**	LN10	CH350	NX2525 **AP25N** **VP25N**	T15 C7X **C7Z** **Z15**	CT5015	-	T1200A T1500A **T2000Z**	NS530 NS730 **GT530** **GT730**	**KT315** HTX	-
	K20	-	NIT	**CZ25**	NX2525 **AP25N** **VP25N**	-	-	-	**T3000Z**	-	**KT5020**	-

• Boldface grade shows PVD Coated Cermet.

Carbide

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
P (Steel)	P10	-	SRT	WS10	STi10T	-	S1P	-	ST10P	TX10S	K2885	IC70
	P20	-	SRT DX30	EX35	STi20 UTi20T	-	SMA	S10M	ST20E	TX20 TX25	K125M	IC70 IC50M
	P30	-	SR30 DX30 DX35	EX35 EX40	UTi20T	-	SM30	S25M	A30N A30 ST30E	TX30 UX30	KMF	IC50M IC54
	P40	-	SR30 DX35	EX45	-	-	S6	S60M	ST40E	TX40	PVA	IC54
K (Cast Iron)	K01	-	KG03	WH02 WH05	HTi05T	-	H1P	-	H1 H2	TH03 KS05F	K68 K10	IC04
	K10	KW10 GW15	KG10 KT9	WH10	HTi10	KM1	H1P H10 HM	890	EH10 EH510	G1F TH10 H10T	KMI K8735 K313	IC20
	K20	GW25	CR1 KG20	WH20	HTi20T UTi20T	KM3	H13A	883 890 HX	G10E EH20 EH520	G2F KS15F KS20	KMF	IC20 IC10
	K30	-	KG30	-	-	-	-	883	G3 G10E	G3 UX30	THR	IC10 IC28
V (Wear and Shock Resistant Tool)	V40	-	G5 GD195	WH50	GTi30	-	-	-	G5	D40	-	-
	V50	VW50	MH3 MH4 GD174 GD201	WH60	GTi35 GTi40 GTi30S	-	-	-	G6	D50	-	-
	V60	-	MH5 MH7 MH8 GD206	WB60	GTi40S GTi50S	-	-	-	G7 G8	D60	-	-

Ceramic

• This table is Kyocera´s own estimation based on publications and is not authorized by companies mentioned in it.

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
K (Cast Iron)	K01	KA30 A65 KT66 **PT600M** **CS7050**	-	NPC-H2 NPC-A2	-	SE1 HC1 HC2 HC5 HC6 HW2	CC620 CC650	-	NB90S NB90M WX120	-	KW80 KY1615 AC5	-
	K10	A65 KT66 **A66N** **PT600M** **CS7050** KS6050	-	NX **NXA** Whiskal WIN	-	WA1 HC2 HC6 HC7	CC6090 CC6190 **GC1690**	-	WX120 **NS260C**	LX11 LX21	KYK10 **KYK25** KB90 KY1320 KY3000 KY3400	-
	K20	KS6050	-	-	-	SX6 SX9 **SP9**	CC6090 CC6190 **GC1690**	-	WX120	WG300 FX105 CX710	KYK35 **KY3400** KY3500	-
S (Difficult-to-cut Material)	S01	-	-	-	-	-	CC650	-	-	-	KY2100	-
	S10	CF1 KS6040	CA200	Whiskal WIN	-	WA1 WA5 SX9	CC670 CC6060 CC6065	-	WX120	WG300	**KYS25** KY4300 KY1525 KY1540	-
	S20	-	-	-	-	-	-	-	WX120	-	KYS30	-
H (Hardened Material)	H01	A65 KT66 **A66N** **PT600M**	-	NPC-A2	-	HC4 HC7 **ZC7**	CC650 CC670 CC6050	-	**NB100C**	LX11 LX21	**KY4400**	-
	H10	A65 KT66 **A66N** **PT600M**	-	NPC-A2 Whiskal WIN	-	**ZC7** WA1 WA5	CC670	-	-	WG300	KY4300	-

• Boldface grade shows PVD Coated Cermet.

CBN

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
K (Cast Iron)	K01	KBN475	JBN795	-	MB710	B20 B22 B30	CB7525 CB50 CB7050	**CBN050C** **CBN300P**	BN500 **BNC500**	BX910 BX930 BX950	-	IB50 IB85
	K10	**KBN60M** **KBN900**	JBN330	BH200	MB710 MB5015 MB4020	B22 B23	CB50 CB7050	CBN20 CBN200 CBN300	BN600 BN700 BN7000	BX950 **BXC90** BX470	KB1630 **KB9610**	IB55 IB90
	K20	**KBN900**	-	BH250	MB730 MBS140 **BC5030**	B16 B40	-	CBN350 CBN500 CBN600	BN7000 BNS800	BX950 **BXC90** BX90S	**KB9640**	-
H (Hardened Material)	H01	KBN510 **KBN05M** **KBN10M**	-	-	**BC8110** **MBC010** MB810	B24 B52	CB20	**CBN050C** CBN010 CBN10 CBN100	BN1000 BNX10 **BNC100** **BNC160** **BNC2010**	BXA30 BX310 **BXC30** **BXM10**	KB1610	IB20H **IB25HC** IB50
	H10	KBN525 **KBN05M** **KBN25M**	JBN300 JBN500	BH200	**MBC020** **BC8020** MB8025 MB825	B24 B36 B54 B52	CB7015 CB7050 CB50	CBN150 CBN060K CBN200 **CBN160C**	**BNC160** BNX20 BN2000 **BNC200** **BNC2020**	**BXM10** BXA40 BX330 BX360 **BXC50**	KB1615 KB1625 KB5610 **KB9610**	IB50
	H20	**KBN30M** **KBN35M** **KBN900**	JBN245	BH250	**MBC020** **BC8020** MB8025	B22 B36	CB7025 CB7525	CBN350 **CBN300P** **CNB400C** CBN500	BNX25 BN350 **BNC300**	BX380 **BXC50** **BXM20**	KB1340 **KB5625** **KB9640**	IB55 **IB25HA**
Stainless Steel	-	KBN65B KBN570 **KBN65M** **KBN70M**	JBN795 JBN500	-	MB4020	-	-	-	BN350 BN7000 BN7500	BX450 BX470 BX480	-	-

• Boldface grade shows PVD Coated Cermet.

PCD (Diamond)

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
N (Non-ferrous Metals)	N01	KPD001	JDA30 JDA735	-	MD205	PD01	CD05 CD10	PCD05 PCD10	DA90 DA1000 DA2200	DX180 DX160	PD100 KD1400 KD1405	-
	N10	KPD001 KPD010 KPD230 KPD250	JDA40 JDA745	-	MD220	-	CD10	PCD10 PCD20	DA150 DA1000 DA2200	DX140	KD100 KD1400 KD1415	ID5
	N20	KPD001 KPD010 KPD230 KPD250	JDA10 JDA715	-	MD230	-	-	PCD30 PCD30M	DA1000 DA2200	DX110 DX120	KD1425	-

CITIZEN MACHINERY MIYANO CO., LTD. (Cincom Products)

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Dimensions	Number of tools	Max. Cutting Dia.	Remarks
A12	10×10×100	5	-	-	Ø19.050/Ø20.000	-	Ø12	-
A16	10×10×100	5	-	-	Ø19.050/Ø20.000	-	Ø16	-
A20	12(13)×12(13)×120	7	-	-	Ø25.400	-	Ø20	-
A32	16×16×150	6	-	-	Ø25.400	-	Ø32	-
B12	10×10×100	5	-	-	Ø19.050/Ø20.000	-	Ø12	-
B20	12(13)×12(13)×120	6	-	-	Ø19.050/Ø20.000	-	Ø20	-
BL12	10×10×60~120	5	-	-	Ø20.000(Ø19.050)	-	Ø12	-
BL20	12(13)×12(13)×120	4~7	-	-	Ø20.000(Ø19.050)	-	Ø20	-
BL25	12(13)×12(13)×120	4~7	-	-	Ø20.000(Ø19.050)	-	Ø25	-
C12	10×10×120	6	-	-	Ø19.050	-	Ø12	-
C16	10×10×120	6	-	-	Ø19.050	-	Ø16	-
C32	16×16×130	5	-	-	Ø25.400	-	Ø32	-
E16	10×10×60	20	-	-	Ø19.050	-	Ø16	-
E20	16×16×90	20	-	-	Ø25.400	-	Ø20	-
E25	16×16×90	20	-	-	Ø25.400	-	Ø25	-
E32	-	-	16(19)×16(13)×90	20	Ø25.400	-	Ø32	-
F10	-	-	10×10×60	10	Ø19.050	-	Ø10	-
F12	-	-	10×10×60	10	Ø19.050	-	Ø12	-
F16	-	-	10×10×60	10	Ø19.050	-	Ø16	-
F20	-	-	16(19)×16(13)×90	10	Ø25.400	-	Ø20	-
F25	-	-	16(19)×16(13)×90	10	Ø25.400	-	Ø25	-
FL25	-	-	16×16×90	12	Ø16.000	-	Ø25	-
FL42	-	-	16×16×90	12	Ø16.000	-	Ø42	-
G32	-	-	16(19)×16(19)×90	10	-	-	Ø32	-
K12,K12E	12(10)×12(10)×100	6(7)	-	-	Ø19.050/Ø20.000	-	Ø12	-
K16,K16E	12×12×100	6	-	-	Ø19.050/Ø20.000	-	Ø16	-
L10	8×8×100~130	5	-	-	Ø15.875	-	Ø10	-
L16	12(10)×12(10)×130	5	-	-	Ø19.050	-	Ø16	-
L20,L20E	12×12×130	5	-	-	Ø19.050	-	Ø20	-
L25	16×16×130	5	-	-	Ø25.400	-	Ø25	-
L32	16×16×130	5	-	-	Ø25.400	-	Ø32	-
M212, M312	10×10×120	5	10×10×60	10	Ø19.050	-	Ø12	-
M216, M316	10×10×120	5	10×10×60	10	Ø19.050	-	Ø16	-
M220, M320	16×16×130	5	16×16×90	10	Ø25.400	-	Ø20	-
M232, M332,M432	16×16×130	5	16×16×90	10	Ø25.400	-	Ø32	-
M20	13(12)×13(12)×130	5	10×10×60	10	Ø19.050	-	Ø20	-
MSL12	10×10×120	-	-	-	-	-	Ø12	-
R04	8×8×120	5	-	-	Ø15.875	-	Ø4	-
R07	8×8×120	5	-	-	Ø15.875	-	Ø7	-
RL01	10(8)×10(8)×90	-	-	-	Ø16.000(Ø20.000)	-	Ø10	-
RL02	16×16×90	-	-	-	Ø20.000	-	Ø20	-
RL21	10(12)×10(12)×90	-	-	-	Ø19.050	-	Ø35	-

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- Manufacturers are in no particular order.

CITIZEN MACHINERY MIYANO CO., LTD. (Miyano Products)

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Dimensions	Number of tools	Max. Cutting Dia.	Remarks
ABX-51SY	-	-	20×20×125(100)	24	Ø25	48	Ø51	-
ABX-51SYY	-	-	20×20×125(100)	24	Ø25	48	Ø51	-
ABX-51TH3	-	-	20×20×125(100)	36	Ø25	72	Ø51	-
ABX-51THY	-	-	20×20×125(100)	36	Ø25	72	Ø51	-
ABX-64SY	-	-	20×20×125(100)	24	Ø25	48	Ø64	-
ABX-64SYY	-	-	20×20×125(100)	24	Ø25	48	Ø64	-
ABX-64TH3	-	-	20×20×125(100)	36	Ø25	72	Ø64	-
ABX-64THY	-	-	20×20×125(100)	36	Ø25	72	Ø64	-
BNA-34C	-	-	20×20×125(100)	8(16)	Ø25	24	Ø34	-
BNA-34DHY	-	-	20×20×125(100)	14(22)	Ø25	27	Ø34	-
BNA-34S	-	-	20×20×125(100)	8(16)	Ø25	24	Ø34	-
BNA-42C	-	-	20×20×125(100)	8(16)	Ø25	24	Ø42	-
BNA-42DHY	-	-	20×20×125(100)	14(22)	Ø25	27	Ø42	-
BNA-42S	-	-	20×20×125(100)	8(16)	Ø25	24	Ø42	-
BND-51C2	-	-	20×20×125(100)	12	Ø25	24	Ø51	-
BND-51S2	-	-	20×20×125(100)	12	Ø25	24	Ø51	-
BND-51SY2	-	-	20×20×125(100)	12	Ø25	24	Ø51	-
BNE-34S5	-	-	20×20×125(100)	24	Ø25	48	Ø34	-
BNE-34SY5	-	-	20×20×125(100)	24	Ø25	48	Ø34	-
BNE-51S5	-	-	20×20×125(100)	24	Ø25	48	Ø51	-
BNE-51SY5	-	-	20×20×125(100)	24	Ø25	48	Ø51	-
BNJ-34S3	-	-	20×20×125(100)	18	Ø25	30	Ø34	-
BNJ-34SY3	-	-	20×20×125(100)	18	Ø25	30	Ø34	-
BNJ-42S3	-	-	20×20×125(100)	18	Ø25	30	Ø42	-
BNJ-42SY3	-	-	20×20×125(100)	18	Ø25	30	Ø42	-
BNJ-51SY3	-	-	20×20×125(100)	18	Ø25	30	Ø51	-
LX-06E2	-	-	20×20×125(100)	8	Ø32	8	Ø31	-
LX-08C	-	-	25×25×150	10	Ø40	10	Ø51	-
LX-08E2	-	-	25×25×150	8	Ø40	8	Ø51	-
LX-08R	-	-	20×20×125(100)	10	Ø25	20	Ø51	-
LZ-01R2	-	-	20×20×125(100)	12	Ø25	24	Ø31	-
LZ-01RY2	-	-	20×20×125(100)	12	Ø25	24	Ø31	-
LZ-02R2	-	-	20×20×125(100)	10	Ø25	20	Ø51	-
LZ-02RY2	-	-	20×20×125(100)	10	Ø25	20	Ø51	-
GN-3200	12(16)×12(16)×70~120	4~5	-	-	Ø20	4~5	Ø40	-
GN-3200W	12(16)×12(16)×70~120	4~5	-	-	Ø20	4~5	Ø40	-
RL01 III	10×10×70~120	2~3	-	-	Ø16	2~3	Ø10	-
RL01 V	10×10×70~120	2~3	-	-	Ø16	2~3	Ø10	-
RL03	12(16)×12(16)×70~120	4~5	-	-	Ø20	4~5	Ø40	-
GN-4200	12(16)×12(16)×70~120	7~8	-	-	Ø20	7~8	Ø40	-

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- Manufacturers are in no particular order.

STAR MICRONICS CO., LTD.

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Dimensions	Number of tools	Max. Cutting Dia.	Remarks
ECAS-12	10×10×95~150	6	-	-	Ø22	-	Ø13	-
ECAS-20	12×12×80~150 16×16×80~144	6	-	-	Ø22	-	Ø20	-
ECAS-20T	-	-	16×16×60~78 16×16×80~88	-	Ø22 / Ø32	-	Ø20	-
ECAS-32T	-	-	16×16×60~78	10	Ø22 / Ø32	-	Ø32	-
ECAS-32T	-	-	16×16×80~88	10	Ø22 / Ø32	-	Ø32	-
JNC-10	-	-	8×8×65	6	-	-	Ø10	-
JNC-16	-	-	10×10×80	6	-	-	Ø16	-
JNC-25 / 32	-	-	10×10×78~120	10	Ø22	-	Ø25 / 32	-
KJR-16B / 25B	-	-	16×16×78	12/16	Ø22 / Ø32	-	-	-
KNC-16 / 20	-	-	16×16×68	16	Ø22	-	-	-
KNC-25 II / 32 II	-	-	16×16×78	20	Ø22 / Ø32	-	-	-
RNC-10	10×10×80~120	5	-	-	Ø22	-	-	-
RNC-16	10×10×80~120	5	-	-	Ø22	-	-	-
SA-16R	10×10×95~120	6	-	-	Ø22	-	-	-
SB-16 (A / C / D / E)	12×12×95~130	5	-	-	Ø22 / (Ø22)	4/4	-	
	12×12×95~130	6	-	-	Ø22 / (Ø22)	4/4	-	Only D/E for back clamp sleeves
	10×10×95~130	6	-	-	Ø22 / (Ø22)	4/4	-	
SB-12 II (C / E)	12×12×95~130	6	-	-	Ø22 / (Ø22)	4/4	-	
SB-16 II (C / E)	12×12×95~130	6	-	-	Ø22 / (Ø22)	4/4	-	Only E for back clamp sleeves
SB-16 II (C / E)	10×10×95~130	6	-	-	Ø22 / Ø22	4/4	-	
SB-20 A / C / E	12×12×95~130	6	-	-	Ø22 / (Ø22)	4/4	-	-
SC20	12×12×95~130	5	-	-	Ø22 / -	4	-	-
SC20	10×10×95~130	6	-	-	-	4/4	-	-
SE-12B / 16B	10×10×95~120	5	-	-	Ø22	-	Ø13 / 16	-
SG-42	-	-	16×16×84~88	-	Ø22 / Ø32	-	Ø42	-
SG-42	-	-	16×16×71~82	-	Ø22 / Ø32	-	Ø42	-
SG-42	-	-	20×20×84~88	-	Ø22 / Ø32	-	Ø42	-
SH-7	8×8×95~120	5	-	-	Ø22	-	Ø7	-
SH-12 / 16	10×10×95~120	5	-	-	Ø22	-	Ø13 / 16	-
SI-12 / 12C	10×10×80~130	6	-	-	Ø22	-	Ø13	-
SR-10J	8×8×67~110 (Spacer is needed.)	6	-	-	Ø16	4	-	-
SR-16 / 20	-	-	-	-	-	-	-	-
SR-20R II	12×12×100~135	6	-	4	Ø22	-	Ø20	-
SR-20 III	12×12×95~135	6	Additional two tools for deep drilling	4/2	Ø22	-	Ø20	-
SR-25J / 32J	16×16×95~155	6	-	4	Ø22 / Ø32	-	Ø32	-
ST-38	-	-	16×16×84~88	-	Ø22 / Ø32	-	Ø38	-
ST-38	-	-	16×16×71~82	-	Ø22 / Ø32	-	Ø38	-
ST-38	-	-	20×20×84~88	-	Ø22 / Ø32	-	Ø38	-
SV-12 / 20	12×12×95~135	5	12×12×70~78	-	Ø22 / 32	-	-	-
SV-12 / 20	16×16×95~135	4	16×16×65~70	-	Ø22 / 32	-	-	-
SV-32	16×16×95~135	4	16×16×60~78	-	Ø22 / 32	-	-	-
SV-32	16×16×95~135	4	16×16×80~88	-	Ø22 / 32	-	-	-
SW-7	8×8×80~120	6	-	-	-	-	Ø7	-
VNC-12	-	-	-	-	-	-	-	-
VNC-20	-	-	-	-	-	-	-	-
VNC-32	-	-	-	-	-	-	-	-

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- Manufacturers are in no particular order.

TSUGAMI CORPORATION

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Dimensions	Number of tools	Max. Cutting Dia.	Remarks
B007- II	7×7×85	8	-	-	Ø25	-	Ø7.0	-
B007- II	(8)×(8)×(85)	8	-	-	Ø25	-	Ø7.0	-
B007- II	(10)×(10)×(85)	8	-	-	Ø25	-	Ø7.0	-
B012- III / V	12×12×85	9	-	-	Ø20	-	Ø12.0	-
B018- III	12×12×85	9	-	-	Ø20	-	Ø18.0	-
B020- V	12×12×85	9	-	-	Ø20	-	Ø20.0	-
BA20	12×12×85	6	-	-	Ø25	-	Ø20.0	-
BA26	12(16)×12(16)×85	6	-	-	Ø25	-	Ø26.0	-
BC18	12×12×85	10	-	-	Ø25 / Ø10	-	Ø18.0	-
BC25	12×12×85	10	-	-	Ø10 / Ø25	-	Ø25.0	-
BE12	12×12×85	9	-	-	Ø20	-	Ø12.0	-
BE18	12×12×85	9	-	-	Ø20	-	Ø18.0	-
BH20	12×12×85	4	12×12×90	St.12	Ø25 / Ø32	-	Ø20.0	-
BH20	12×12×85	4	16×16×90	St.12	Ø25 / Ø32	-	Ø20.0	-
BH38	16×16×100	7	20×20×125	St.12	Ø25 / Ø32	-	Ø38.1	-
BM07	8×8×85	9	-	-	Ø20	-	Ø7.0	-
BM16	12×12×85	9	-	-	Ø20	-	Ø16.0	-
BM16E	12×12×85	9	-	-	Ø20	-	Ø16.0	-
BN12	12×12×85	7	-	-	Ø20	-	Ø12.0	-
BN20	12(16)×12(16)×85	7	-	-	Ø20	-	Ø20.0	-
BS12- III	12×12×85	7 or 10	-	-	Ø14 / Ø25	-	Ø12.0	-
BS12- V	12×12×85	8 or 12	-	-	Ø20 / Ø25	-	Ø12.0	-
BS18- III	12×12×85	7 or 10	-	-	Ø14 / Ø25	-	Ø18.0	-
BS20- III	16×16×100	7 or 10	-	-	Ø16 / Ø25	-	Ø20.0	-
BS20- V	12×12×85	8 or 12	-	-	Ø20 / Ø25	-	Ø20.0	-
BS26- III	16×16×100	7 or 10	-	-	Ø16 / Ø25	-	Ø26.0	-
BS32- III	16×16×100	6	-	-	Ø16 / Ø25	-	Ø32.0	-
BU12	12×12×85	4	12×12×80	St.8	Ø20	-	Ø51.0	-
BU20	12×12×85	4	12×12×80	St.8	Ø20	-	Ø20.0	-
BU26	16×16×100	7	20×20×90	St.8	Ø20 / Ø32	-	Ø26.0	-
BU38	16×16×100	7	20×20×90	St.8	Ø20 / Ø32	-	Ø38.0	-
BW07	12×12×85	7	-	-	Ø20	-	Ø7.0	-
BW12	12×12×85	7	-	-	Ø20	-	Ø12.0	-
BW20	12(16)×12(16)×85	7	-	-	Ø20	-	Ø20.0	-
C004- II / III	12×12×60~100	6~8	-	-	-	-	Ø100.0	-
C15	10×10×60~100	10~14	-	-	-	-	Ø75.0	-
C150	12×12×60~100	4~6	-	-	-	-	Ø75.0	-
C220	12×12×60~100	6~8	-	-	-	-	Ø100.0	-
C300	16×16×100~130	6~10	-	-	-	-	Ø150.0	-
M34J	-	-	20×20×125	St.12	Ø20 / Ø32	-	Ø34.0	-
M42J	-	-	20×20×125	St.12	Ø25 / Ø32	-	Ø42.0	-
M42SD	-	-	20×20×125	St.12	Ø25 / Ø32	-	Ø42.0	-
M50	-	-	20×20×100	St.12	Ø32	-	Ø51.0	-
M50J	-	-	20×20×100	St.12	Ø20 / Ø32	-	Ø51.0	-
MB35	-	-	20×20×90	2 × St.8	Ø20 / Ø32	-	Ø35.0	-
MB38	-	-	20×20×90	2 × St.8	Ø20 / Ø32	-	Ø38.0	-
MB50	-	-	20×20×90	2 × St.8	Ø20 / Ø32	-	Ø50.0	-
MU26	-	-	20×20×90	2 × St.8	Ø20 / Ø32	-	Ø26.0	-
MU38	-	-	20×20×90	2 × St.8	Ø20 / Ø32	-	Ø38.0	-
NU50	-	-	20×20×100	St.12	Ø20 / Ø32	-	Ø51.0	-
TMA8- II	20×20×100~125	1	-	-	Ø25 / Ø32	-	Ø65.0	-
TMU1	20×20×100~125	1	20×20×125	St.16	Ø25 / Ø32	-	Ø38.0	-

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- Manufacturers are in no particular order.

AMADA MACHINE TOOLS CO., LTD.

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Dimensions	Number of tools	Max. Cutting Dia.	Remarks
G05	16×16	-	-	-	Ø20	-	Ø50×40	-
G06	16×16	-	-	-	Ø20	-	Ø60×60	-
G07	16×16	-	-	-	Ø20	-	Ø100×100	-
G07M	20×20	-	-	-	Ø20	-	Ø100×100	-
G07F	16×16	-	-	-	Ø20	-	Ø120×120	-
GG5	16×16	-	-	-	Ø20	-	Ø50×40	-
GS04	16×16	-	-	-	Ø20	-	Ø30×20	-
J1	-	-	20×20	8	Ø25	-	Ø120×120	-
J3	-	-	25×25	8	Ø32	-	Ø170	-
J5	-	-	25×25	8	Ø32	-	Ø240	-
JJ1	-	-	20×20	8	Ø32	-	Ø50×50	-
JJ3	-	-	25×25	8	Ø32	-	Ø100×100	-
JJ3M	-	-	25×25	12	Ø32	-	Ø100×100	-
Ai8	-	-	20×20	8	Ø25	-	Ø50×50	-
A12	-	-	16×16	12	Ø25	-	Ø80×50	-
A18S	-	-	20×20	18	Ø25	-	Ø80×50	-
AD12	-	-	16×16	9	Ø25	-	Ø80×50	-
AD18S	-	-	20×20	15	Ø25	-	Ø80×50	-
AA1	-	-	20×20	8	Ø25	-	Ø50×50	-
Mi8	-	-	16×16	5	Ø20	-	Ø70×70	-
S10	-	-	20×20	12	Ø25	-	Ø250×150	-

Nomura VTC Automatic Lathe Co., Ltd.

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Dimensions	Number of tools	Max. Cutting Dia.	Remarks
NN-10C	10×10×130	6	-	-	Ø17	-	Ø10	-
NN-10CS	10×10×130	6	-	-	Ø17	4	Ø10	-
NN-10S II	10×10×130	5	-	-	Ø23	-	Ø10	-
NN-10T	10×10×130	7	-	-	Ø23	-	Ø10	-
NN-10SB5	10×10×130	5	-	-	Ø23	-	Ø10	-
NN-16SB5	10×10×130	5	-	-	Ø23	-	Ø16	-
NN-16SB6	12.7×12.7×130	5	-	-	Ø17(Ø22)	4(3)	Ø16	-
NN-16H III	12×12×130	6	-	-	Ø23	-	Ø16	-
NN-20H III	12×12×130	6	-	-	Ø23	-	Ø20	-
NN-16U III	12×12×130	5	-	-	Ø23	-	Ø16	-
NN-20U III	12×12×130	5	-	-	Ø23	-	Ø20	-
NN-20CS	12.7×12.7×130	5(6)	-	-	Ø22	4	Ø20(Ø25)	-
NN-20U5	12.7×12.7×130	5(6)	-	-	Ø22	4	Ø20(Ø25)	-
NN-16UB5	12×12×130	5	-	-	Ø23	-	Ø16	-
NN-20UB5	12×12×130	5	-	-	Ø23	-	Ø20	-
NN-20UB7	12×12×130	6	-	-	Ø23	-	Ø20	-
NN-20UB8	12.7×12.7×130	5(6)	-	-	Ø22	4	Ø20(Ø25)	-
NN-20YB	12×12×130	8	-	-	Ø23	-	Ø20	-
NN-25YB / 32YB	16×16×130	8	-	-	Ø23 / Ø32	-	Ø25	-
NN-32YB2	16×16×130	5	-	-	Ø22 / Ø32	4	Ø32	-
NN-16J	12.7×12.7×130	6	-	-	Ø23	-	Ø16	-
NN-20J	12.7×12.7×130	6	-	-	Ø23	-	Ø20	-
NN-20J2	12.7×12.7×130	6	-	-	Ø22	4	Ø20	-

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- Manufacturers are in no particular order.

EGURO. LTD

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Dimensions	Number of tools	Max. Cutting Dia.	Remarks
SANAX-6	12×12	5 (Max.)	-	5	Ø16	-	Ø15.0	-
SANAX-8	16×16	5 (Max.)	-	5	Ø25 / Ø30	-	Ø20.0	-
SANAX-8	12×12	7 (Max.)	-	5	Ø25 / Ø30	-	Ø20.0	-
SANAX-10	16×16	5 (Max.)	-	5	Ø25 / Ø30	-	Ø25.5	-
EBN-10EX	12×12	6 (Max.)	-	-	Ø20	-	Ø25.5	-
NUCBOY-8EX	12×12	6 (Max.)	-	-	Ø20	-	Ø20.0	-
NUCLET-10EX	16×16	10 (Max.)	-	-	Ø20	-	Ø25.5	-
NUCPAL-10EX	16×16	10 (Max.)	-	-	Ø20	-	Ø25.5	-

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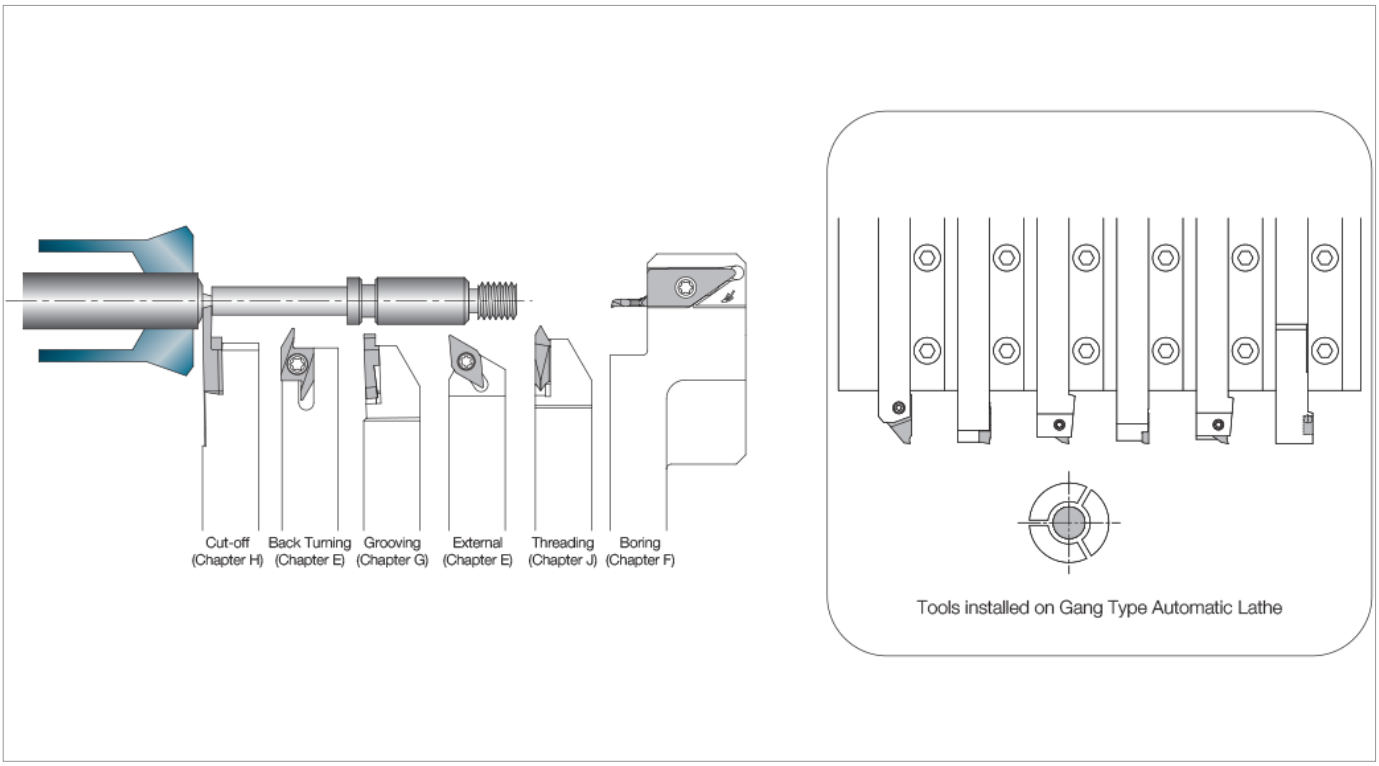
List of Instruments and Applicable Small Tools and Toolholders

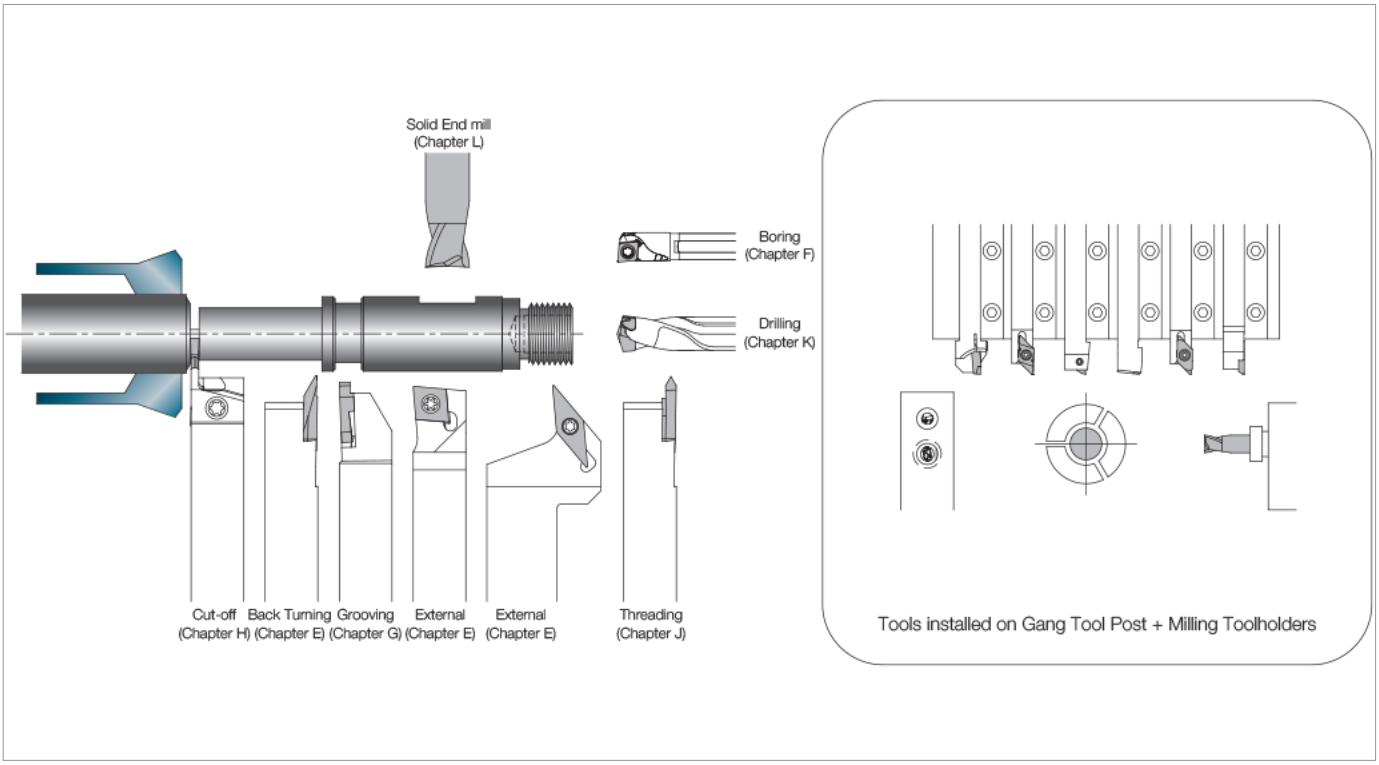
Models of major machine tool manufacturers				Applicable Toolholders
Manufacturer	Model (Automatic Lathe)	Toolholder Size	Total Length of Attached Toolholder (MAX)	
CITIZEN MACHINERY MIYANO CO., LTD.	A12,A16,B12,RL01,RL21	10×10	100	...1010F-..
	K16,K20	12×12	100	...1212F-..
	RL02	16×16	100	...1616H-..
	BL12,C12,C16,M212,M216 M312,MSL12	10×10	120	...1010JX-..
	A20,B20,BL20,BL25	12×12	120	...1212JX-..
	L16,L20,M20	12×12	130	...1212JX-..
	C32,L25,L32,M220,M232	16×16	130	...1616JX-..
STAR MICRONICS CO., LTD.	SB16A,SB16C,SB16D,SC20	12×12	130	...1212JX-..
	SR20R II,SR20 III,SV12,SV20	12×12	135	...1212JX-..
	SV32,SV32J,SV32J II	16×16	135	...1616JX-..
	ECAS12	10×10	150	...1010JX-..
	ECAS20	12×12	150	...1212JX-..
	SR25J,SR32J	16×16	150	...1616JX-..
Nomura VTC Automatic Lathe Co., LTD.	NN-10C,NN-10CS,NN-10SB5,NN-10S II NN-10T,NN-16SB5	10×10	130	...1010JX-..
	NN-16H III,NN-16UB5,NN-16U III,NN-16J NN-20H III,NN-20U III,NN-20UB5,NN-20YB	12×12	130	...1212JX-..
	NN-25YB	16×16	130	...1616JX-..
TSUGAMI CORPORATION	B007	10×10	85	...1010F-..
	B0,BA,BC,BM,BU12,BU20 BS12,BS18,BS20	12×12	85	...1212F-..
	C004	12×12	100	...1212F-..
	BH38,BS26,BS32,BU26,BU32	16×16	100	...1616H-..

• Manufacturers are in no particular order.

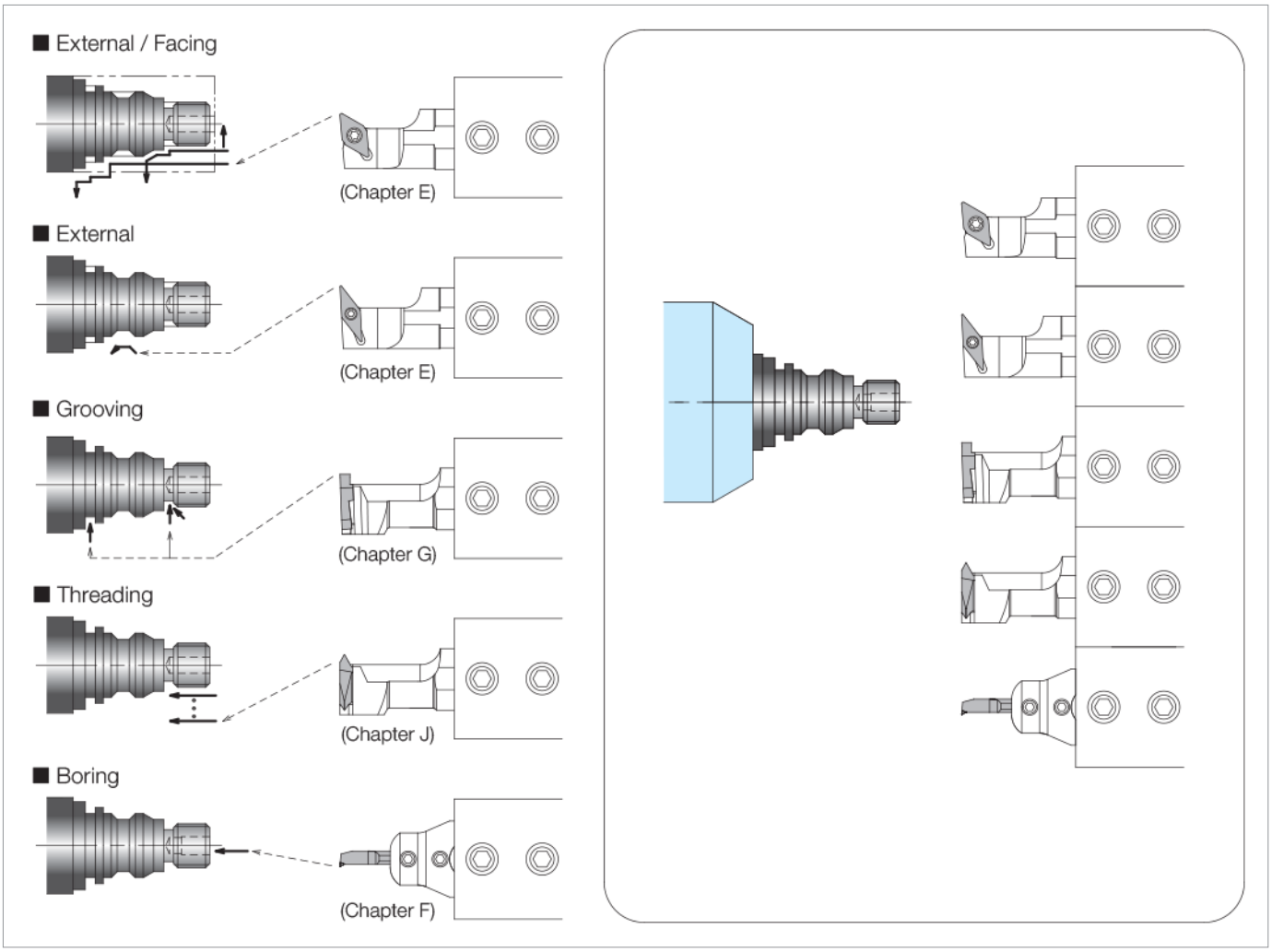
Tooling Example ① CNC Automatic Lathe (Gang Type)



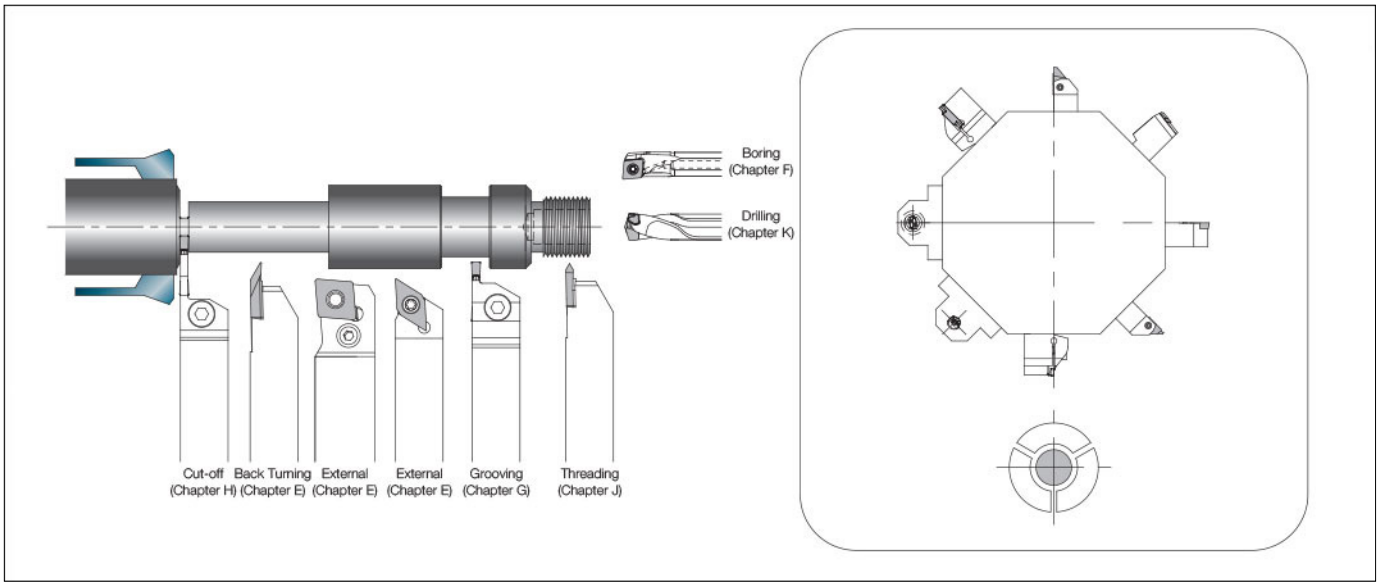
Tooling Example ② CNC Automatic Lathe (Gang Type)



Tooling Example ③ CNC Automatic Lathe (Opposed Gang Type)

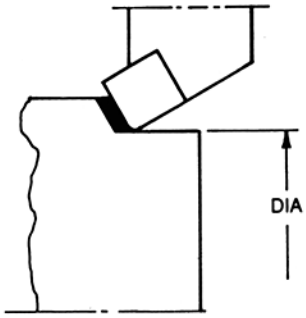


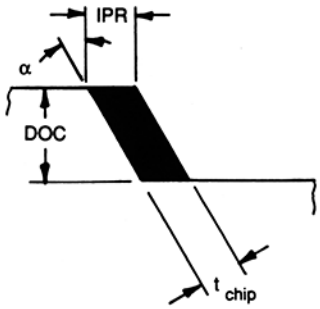
Tooling Example ④ CNC Automatic Lathe (Turret Type)



Automatic Lathe List by Manufacturer and Tooling Examples see page ➔ **R19~** ➔ **R24**

Turning





Surface Speed per Minute

$SFM = 0.262 \times DIA \times RPM$

Revolutions per Minute

$$RPM = \frac{3.820 \times SFM}{DIA}$$

Feedrate (inches/minute)

$IPM = IPR \times RPM$

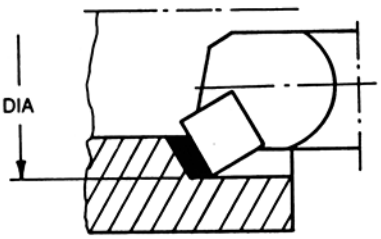
Chip Thinning for Non-Round Inserts (inches/revolution)

$$\text{Programmed IPR} = \frac{t_{chip\ Max}}{\cos 1}$$

Chip Thinning for Round Inserts (inches/revolution)

$$\text{Programmed IPR} = \frac{t_{chip\ Max}}{\sqrt{\frac{4ap}{ic} \cdot \left(\frac{2ap}{ic}\right)^2}}$$

Boring



Metal Removal Rate

$Q = 12 \times DOC \times IPR \times SFM$ (in^3/minute)

Horsepower Required at the Spindle

$HPS = Q \times UHP$

Horsepower Required at the Motor

$$HPM = \frac{HPS}{EFF}$$

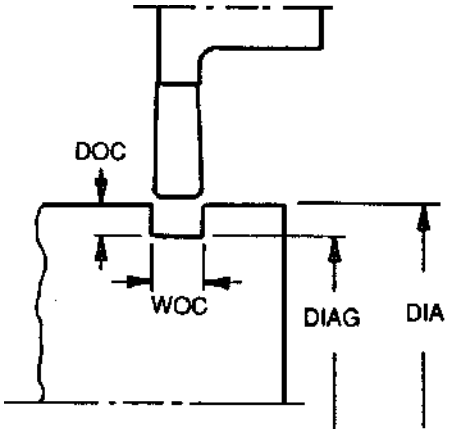
Time in Cut (seconds)

$$T = \frac{15.7 \times DIA \times LOC}{SFM \times IPR}$$

or

$$T = \frac{60 \times LOC}{IPM}$$

External Grooving



Surface Speed per Minute

$SFM = 0.262 \times DIA \times RPM$

Revolutions per Minute

$$RPM = \frac{3.820 \times SFM}{DIA}$$

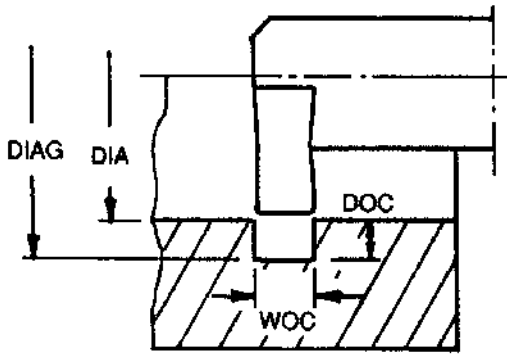
Feedrate (inches/minute)

$IPM = IPR \times RPM$

Feedrate (inches/revolution)

$IPR = t_{chip}$

Internal Grooving



Metal Removal Rate

$Q = 12 \times WOC \times IPR \times SFM$ (cu.in/minute)

Horsepower Required at the Spindle

$HPS = Q \times UHP$

Horsepower Required at the Motor

$$HPM = \frac{HPS}{EFF}$$

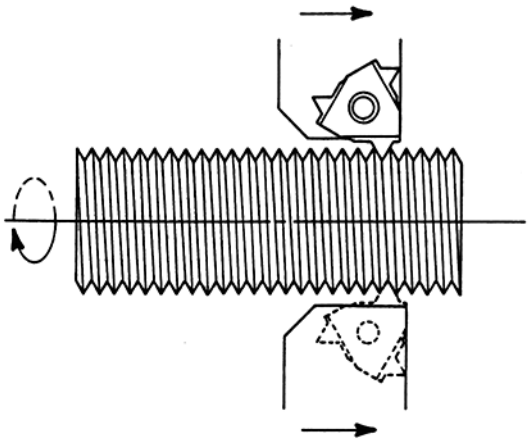
Time in Cut (seconds)

$$T = \frac{7.85 \times DOC \times (DIA + DIAG)}{SFM \times IPR}$$

or

$$T = \frac{60 \times LOC}{IPM}$$

External Threading



Surface Speed per Minute

$$SFM = 0.262 \times DIA \times RPM$$

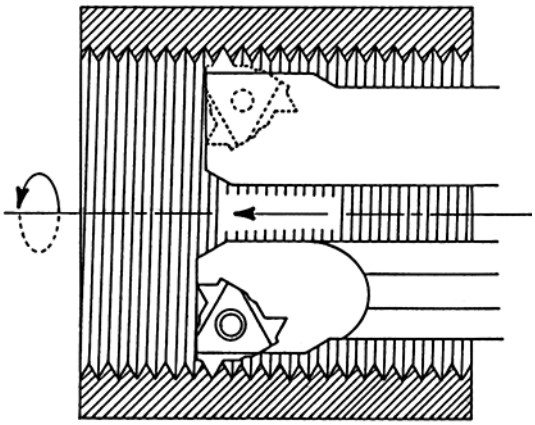
Revolutions per Minute

$$RPM = \frac{3.820 \times SFM}{DIA}$$

Feedrate (inches/minute)

$$IPM = IPR \times RPM$$

Internal Threading



Time in Cut (seconds)

$$T = \frac{60 \times LOC \times NO.\ OF\ PASSES}{IPR \times RPM}$$

Feedrate

Standard Threads

$$IPR = \frac{1}{TPI}$$

Metric Threads

$$IPR = \frac{P_{mm}}{25.4}$$

Definition of Terms

DIA = Diameter of the Workpiece (Inches)

DOC = Depth of Cut (Inches)

EFF = Machine Efficiency

f = Feedrate (See IPM and IPR)

HPM = Horsepower Required at the Motor

HPS = Horsepower Required at the Spindle

IPM = Feedrate (Inches per Minute)

IPR = Feedrate (Inches per Revolution)

IC = Insert inscribed circle (inches)

LOC = Length of Cut (Inches)

Q = Metal Removal Rate (Cubic Inches per Minute)

RPM = Revolutions per Minute

SFM = Surface Speed (Feet per Minute)

T = Time (in Seconds)

$t_{chip\ Max}$ = Maximum Recommended Chip Thickness (Inches)

UHP = Unit Horsepower Factor

1 = Lead Angle

Turning

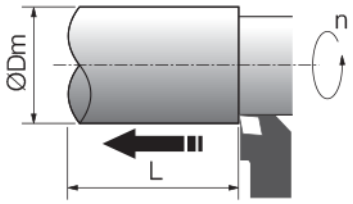
Cutting Speed

$$Vc = \frac{\pi \times Dm \times n}{1000}$$

Vc : Cutting Speed [m/min]

Dm : Workpiece Diameter [mm]

n : Spindle Revolution [min^{-1}]



Power Requirement

$$Pc = \frac{Ks \times Vc \times ap \times f}{6120 \times \eta}$$

$$P_{HP} = \frac{Ks \times Vc \times ap \times f}{4500 \times \eta}$$

Pc : Power Requirement [kW]

P_{HP} : Power Requirement (Horse Power) [HP]

Vc : Cutting Speed [m/min]

ap : Depth Of Cut [mm]

f : Feed Rate [mm/rev]

Ks : Specific Cutting Resistance [kgf/mm^{-2}]

η : Mechanical Efficiency (0.7 ~ 0.8)

Ks Figure	
Low Carbon Steel	190
Medium Carbon Steel	210
High Carbon Steel	240
Low Alloy Steel	190
High Alloy Steel	245
Cast Iron	93
Malleable Cast Iron	120
Bronze, Brass	70

Surface Roughness

$$Rz=h = \frac{f2}{8 \times R(r\varepsilon)} \times 1000$$

Rz=h : Theoretical Surface Roughness [µm]

f : Feed Rate [mm/rev]

R(rε) : Corner Radius of Insert [mm]

Chip Removal Volume

$$Q = Vc \times ap \times f$$

Q : Chip Removal Volume [cm^3/min]

Vc : Cutting Speed [m/min]

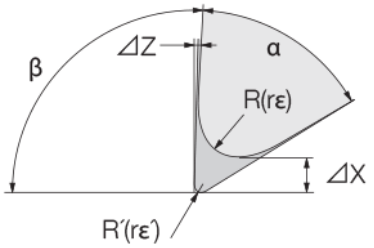
ap : Depth Of Cut [mm]

f : Feed Rate [mm/rev]

Edge Position Compensation

$$\Delta X = (R\text{-}R') \times \left\{ \frac{\cos(\frac{\alpha}{2} + (\beta - 90°))}{\sin\frac{\alpha}{2}} - 1 \right\}$$

$$\Delta Z = (R\text{-}R') \times \left\{ \frac{\sin(\frac{\alpha}{2} + (\beta - 90°))}{\sin\frac{\alpha}{2}} - 1 \right\}$$



ΔX : X-axis Direction Edge Position Compensation [mm]

ΔZ : Z-axis Direction Edge Position Compensation [mm]

R : Corner-R before Change [mm]

R' : Corner-R before Change [mm]

α : Insert Corner Angle [°]

β : Toolholder's Cutting Edge Angle [°]

Toolholder Type	Insert Corner Angle α	Cutting Edge Angle β	ΔX	ΔZ
PCLN	80°	95°	0.100 x (R-R')	0.100 x (R-R')
PTGN	60°	91°	0.714 x (R-R')	0.030 x (R-R')
PDJN	55°	93°	0.866 x (R-R')	0.099 x (R-R')
PDHN	55°	107.5°	0.531 x (R-R')	0.531 x (R-R')
PVLN	35°	95°	2.072 x (R-R')	0.273 x (R-R')
PVPN	35°	117.5°	1.351 x (R-R')	1.351 x (R-R')
PSBN	90°	75°	0.225 x (R-R')	-0.293 x (R-R')

Example: Compensation when changing corner-R from 0.80 to 0.40, using PCLN type holder,

ΔX= 0.100 x (0.80 - 0.40) = 0.04 (mm)

ΔZ= 0.100 x (0.80 - 0.40) = 0.04 (mm)

Turning (Cutting Time)

Cutting Time (External Turning Case 1: 1 Pass machining)

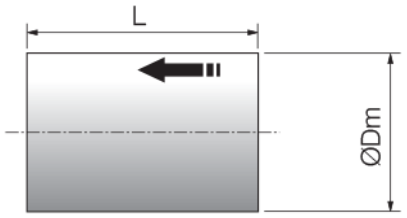
- At Constant Revoluation

$$T = \frac{60 \times L}{f \times n}$$

- At Constant Cutting Speed

$$T = \frac{60 \times \pi \times L \times Dm}{1000 \times f \times Vc}$$

T : Cutting Time [second]
L : Cutting Length [mm]
f : Feed Rate [mm/rev]
n : Spindle Revolution [min^{-1}]
Dm : Workpiece Diameter [mm]
Vc : Cutting Speed [m/min]



Cutting Time (External Turning Case 2: Multi-Pass machining)

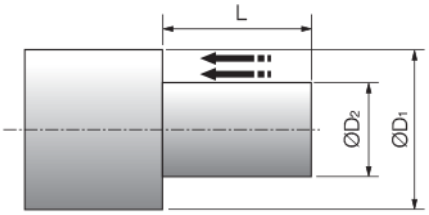
- At Constant Revoluation

$$T = \frac{60 \times L}{f \times n} \times N$$

- At Constant Cutting Speed

$$T = \frac{60 \times \pi \times L \times (D_1 + D_2)}{2 \times 1000 \times f \times Vc} \times N$$

T : Cutting Time [second]
L : Cutting Length [mm]
ap : Depth Of Cut per Pass [mm]
f : Feed Rate [mm/rev]
n : Spindle Revolution [min^{-1}]
D_1 : Max. Diameter of Workpiece [mm]
D_2 : Min. Diameter of Workpiece [mm]
Vc : Cutting Speed [m/min]
N : Number of Passes = $(D_1 - D_2)/ap/2$ (if it is indivisible, obtain integer by rounding up one place of decimals.)



Cutting Time (Facing)

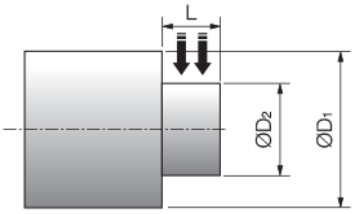
- At Constant Revoluation

$$T = \frac{60 \times (D_1 - D_2)}{2 \times f \times n} \times N$$

- At Constant Cutting Speed

$$T_1 = \frac{60 \times \pi \times (D_1 + D_2 \times D_1 - D_2)}{4000 \times f \times Vc} \times N$$

T : Cutting Time [second]
T_1 : Machining Time before reaching Max. Spindle Revolution [second]
L : Cutting Length [mm]
ap : Depth Of Cut per Pass [mm]
f : Feed Rate [mm/rev]
n : Spindle Revolution [min^{-1}]
D_1 : Max. Diameter of Workpiece [mm]
D_2 : Min. Diameter of Workpiece [mm]
Vc : Cutting Speed [m/min]
N : Number of Passes = $(D_1 - D_2)/ap/2$ (if it is indivisible, obtain integer by rounding up one place of decimals.)



Cutting Time (Grooving)

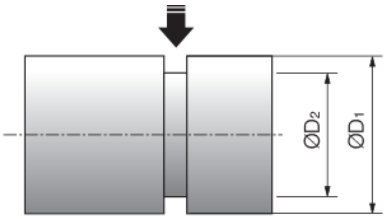
- At Constant Revoluation

$$T = \frac{60 \times (D_1 - D_2)}{2 \times f \times n} \times N$$

- At Constant Cutting Speed

$$T_1 = \frac{60 \times \pi \times (D_1 + D_2) \times (D_1 - D_2)}{4000 \times f \times Vc} \times N$$

T : Cutting Time [second]
T_1 : Machining Time before reaching Max. Spindle Revolution [second]
L : Cutting Length [mm]
f : Feed Rate [mm/rev]
n : Spindle Revolution [min^{-1}]
D_1 : Max. Diameter of Workpiece [mm]
D_2 : Min. Diameter of Workpiece [mm]
Vc : Cutting Speed [m/min]



Cutting Time (Cut-Off)

- At Constant Revoluation

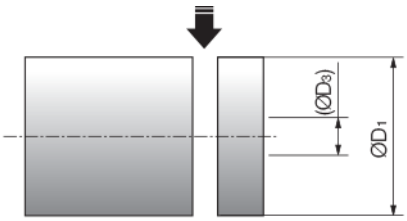
$$T = \frac{60 \times D_1}{2 \times f \times n}$$

- At Constant Cutting Speed

$$T_1 = \frac{60 \times \pi \times (D_1 + D_3) \times (D_1 - D_3)}{4000 \times f \times Vc}$$

$$T_3 = T_{1+} \frac{60 \times D_3}{2 \times f \times N_{max}}$$

T : Cutting Time [second]
T_1 : Machining Time before reaching Max. Spindle Revolution [second]
T_3 : Machining Time when reaching Max. Spindle Revolution [second]
f : Feed Rate [mm/rev]
n : Spindle Revolution [min^{-1}]
n_{max} : Max. Spindle Revolution [min^{-1}]
D_1 : Max. Diameter of Workpiece [mm]
D_3 : Diameter when reaching Max. Spindle Revolution [mm]
Vc : Cutting Speed [m/min]



Milling (Inch)

Surface Speed per Minute

$$SFM = .262 \times DIA \times RPM$$

Revolutions per Minute

$$RPM = \frac{3.82 \times SFM}{DIA}$$

Feedrate (inches/minute)

$$IPM = IPT \times N \times RPM$$

Feedrate (inches/tooth)

$$\text{Programmed } IPT = \frac{t_{chip\ Max}}{\cos\alpha}$$

Radial Chip Thinning for 90° Cutters

$$f_1 = \frac{1/2\left(\frac{Dia}{Ae}\right)}{\sqrt{\left(\frac{Dia}{Ae}\right)} - 1}$$

Table Feed with f_1 Compensation (inches/minute)
$= IPT \times N \times RPM \times f_1$

Metal Removal Rate

$$Q = WOC \times DOC \times IPM \text{ (in/min)}$$

Horsepower Required at the Spindle

$$HPS = Q \times UHP$$

Horsepower Required at the Motor

$$HPM = \frac{HPS}{EFF}$$

Time in Cut (seconds)

$$T = \frac{15.7 \times DIA \times LOC}{SFM \times IPR \times N}$$

or

$$T = \frac{60 \times LOC}{IPM}$$

Definition of Terms

DIA = Cutter Diameter (Inches)
ap= Axial depth of Cut (Inches)
EFF = Machine Efficiency
f = Feedrate (See IPM, IPR and IPT)
HPM = Horsepower Required at the Motor (HP)
HPS = Horsepower Required at the Spindle (HP)
IPM = Feedrate (Inches per Minute)
IPR = Feedrate (Inches per Revolution)
IPT = Feedrate (Inches per Tooth)
f_1 = Cutter Compensation Factor
WOC = Width of Cut (Inches)
LOC = Length of Cut (Inches)
N = Number of Effective Teeth in Cutter
Q = Metal Removal Rate (Cubic Inches per Minute)
RPM = Revolutions per Minute
SFM = Surface Speed (Feet per Minute)
T = Time (in Seconds)
$t_{chip\ Max}$ = Maximum Recommended Chip Thickness (Inches)
UHP = Unit Horsepower Factor
α = Lead Angle

Milling (Metric)

Cutting Speed

$$Vc = \frac{\pi \times Ds \times n}{1000}$$

Vc : Cutting Speed [m/min]
Ds : End Mill Diameter [mm]
n : Spindle Revolution [min^{-1}]

End Mill Diameter
(Diameter at Edge Point)

Power Requirement

$$fz = \frac{Vf}{Z \times n}$$

fz : Feed Per Tooth [mm/t]
Vf : Table Feed [mm/min]
Z : Number of Inserts
n : Spindle Revolution [min^{-1}]

INDEX

T2 - T11

Listed in Alphanumeric Order

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number		Page	Description
Numeric			
06I□	○○○○(○)	J23,J25	Insert (Threading)
08I□	○○○○(○)	J23,J25	Insert (Threading)
11I□	A○○	J23,J25	Insert (Threading)
11I□	○○BSPT	J21	Insert (Threading)
11I□	○○BSPT-TF	J21	Insert (Threading) / TF series
11I□	○○○ISO	J17	Insert (Threading)
11I□	○○○ISO-TF	J17	Insert (Threading) / TF series
11I□	○○○○○	J23,J25	Insert (Threading)
16E□	A○○	J22,J24	Insert (Threading)
16E□	AG○○	J22,J24	Insert (Threading)
16E□	G○○	J22,J24	Insert (Threading)
16E□	A○○-TF	J22,J24	Insert (Threading) / TF series
16E□	AG○○-TF	J22,J24	Insert (Threading) / TF series
16E□	G○○-TF	J22,J24	Insert (Threading) / TF series
16E□	○○BSPT	J20	Insert (Threading)
16E□	○○BSPT-TF	J20	Insert (Threading) / TF series
16E□	○○(.○)NPT	J20	Insert (Threading)
16E□	○○UN	J18	Insert (Threading)
16E□	○○UN-TF	J18	Insert (Threading) / TF series
16E□	○○W	J18	Insert (Threading)
16E□	○○W-TF	J18	Insert (Threading) / TF series
16E□	○○○ISO	J16	Insert (Threading)
16E□	○○○ISO-TF	J16	Insert (Threading) / TF series
16E□	○○○TR	J24	Insert (Threading)
16E□	○○○○	J22,J24	Insert (Threading)
16I□	A○○	J23,J25	Insert (Threading)
16I□	AG○○	J23,J25	Insert (Threading)
16I□	G○○	J23,J25	Insert (Threading)
16I□	○○BSPT	J20	Insert (Threading)
16I□	○○BSPT-TF	J20	Insert (Threading) / TF series
16I□	○○(.○)NPT	J21	Insert (Threading)
16I□	○○UN	J19	Insert (Threading)
16I□	○○UN-TF	J19	Insert (Threading) / TF series
16I□	○○W	J19	Insert (Threading)
16I□	○○W-TF	J19	Insert (Threading) / TF series
16I□	○○○ISO	J17	Insert (Threading)
16I□	○○○ISO-TF	J17	Insert (Threading) / TF series
16I□	○○○TR	J23	Insert (Threading)
16I□	○○○○(○)	J23,J25	Insert (Threading)
2FEKM	○○○-○○○-○○	L7	Solid End Mill
2FEKS	○○○-○○○-○○	L7	Solid End Mill
2FESL	○○○-○○○-○○	L6	Solid End Mill
2FESM	○○○-○○○-○○	L5,L6	Solid End Mill
2FESS	○○○-○○○-○○	L5	Solid End Mill
2FESW	○○○-○○○-○○(A)	L9	Solid End Mill
3FESW	○○○-○○○-○○(A)	L9	Solid End Mill
3ZFKM	○○○-○○○-○○	L11	Solid End Mill
3ZFKS	○○○-○○○-○○	L11	Solid End Mill
4FEKM	○○○-○○○-○○	L8	Solid End Mill
4FESM	○○○-○○○-○○	L8	Solid End Mill
4FESW	○○○-○○○-○○	L9	Solid End Mill
7/64 hex		G24,J27	Spare Parts (Wrench)
A			
A○○□-	SCLC□○	F43	Boring Bars
A○○□-	SCLC□○AE	F39	Boring Bars (Dynamic Bar)
A○○□-	SCLC□○○-○○AE	F39	Boring Bars (Dynamic Bar)
A○○□-	SCLP□○(.○)AE	F41	Boring Bars (Dynamic Bar)
A○○□-	SCLP□○○-○○AE	F41	Boring Bars (Dynamic Bar)
A○○□-	SDQC□○AE	F46	Boring Bars (Dynamic Bar)
A○○□-	SDQC□○○-○○AE	F46	Boring Bars (Dynamic Bar)
A○○□-	SDUC□○AE	F43	Boring Bars (Dynamic Bar)
A○○□-	SDUC□○○-○○AE	F45	Boring Bars (Dynamic Bar)
A○○□-	SDZC□○○-○○AE	F47	Boring Bars (Dynamic Bar)
A○○□-	STLB□○(.○)AE	F53	Boring Bars (Dynamic Bar)
A○○□-	STLC□○○-○○AE	F51	Boring Bars (Dynamic Bar)
A○○□-	STLP□○(.○)AE	F53	Boring Bars (Dynamic Bar)
A○○□-	STLP□○○-○○AE	F53	Boring Bars (Dynamic Bar)
A○○□-	SVJC□○○-○○AE	F58	Boring Bars (Dynamic Bar)
A○○□-	SVJP□○○-○○AE	F58	Boring Bars (Dynamic Bar)
A○○□-	SVPB□○AE	F61	Boring Bars (Dynamic Bar)
A○○□-	SVPB□○○-○○AE	F61	Boring Bars (Dynamic Bar)
A○○□-	SVPC□○(.○)AE	F61	Boring Bars (Dynamic Bar)
A○○□-	SVPC□○○-○○AE	F61	Boring Bars (Dynamic Bar)
A○○□-	SVUB□○AE	F63	Boring Bars (Dynamic Bar)
A○○□-	SVUB□○○-○○AE	F63	Boring Bars (Dynamic Bar)
A○○□-	SVUC□○(.○)AE	F63	Boring Bars (Dynamic Bar)
A○○□-	SVUC□○○-○○AE	F63	Boring Bars (Dynamic Bar)
A○○□-	SVZB□○AE	F63	Boring Bars (Dynamic Bar)
A○○□-	SVZB□○○-○○AE	F63	Boring Bars (Dynamic Bar)
A○○□-	SVZC□○(.○)AE	F63	Boring Bars (Dynamic Bar)
A○○□-	SVZC□○○-○○AE	F63	Boring Bars (Dynamic Bar)
A○○□-	SWUB□○(.○)AE	F65	Boring Bars (Dynamic Bar)
A○○□-	SWUB□○○-○○AE	F65	Boring Bars (Dynamic Bar)
A○○□-	SWUP□○AE	F65	Boring Bars (Dynamic Bar)
A○○□-	SWUP□○○-○○AE	F65	Boring Bars (Dynamic Bar)
AABSR	○(○)-○○JXF	E17	Toolholder (Turning)
AABSR	○○○○□□-○○F	E17	Toolholder (Turning)
AABWR	○(○)-○○JXF	E18,E19	Toolholder (Turning)
AABWR	○○○○□□-○○F	E18,E19	Toolholder (Turning)
ABS	○○R○○○○	B37	Insert (Turning)
ABS	○○R○○○○M	B37	Insert (Turning)

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Part Numbers in Alphanumeric Order

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Part Number		Page	Description
ABW	○○R○○○○	B37	Insert (Turning)
ABW	○○R○○○○M	B37	Insert (Turning)
ACLC℅	○(○)-○JXFF	E22	Toolholder (Turning)
ACLC℅	○○○○□□-○○FF	E22	Toolholder (Turning)
ADJC℅	○(○)-○JXFF	E24	Toolholder (Turning)
ADJC℅	○○○○□□-○○FF	E24	Toolholder (Turning)
AVJB℅	○(○)-○JXFF	E30	Toolholder (Turning)
AVJB℅	○○○○□□-○○FF	E30	Toolholder (Turning)
B			
BDGT	○○T○○○FR-JA	M2	Insert (Milling)
BDMT	○○T○○○ER-JS	M2	Insert (Milling)
BDMT	○○T○○○ER-JT	M2	Insert (Milling)
BDMT	○○T○○○FR	C17,M2	Insert (Milling)
BDMT	○○○○○○ER-JS	M2	Insert (Milling)
BDMT	○○○○○○ER-JT	M2	Insert (Milling)
C			
C○○○□-	SCLCR○○-○○○EZ	F18	Toolholder (EZ Bar-Plus)
C○○(○)□-	SCLC℅○	F43	Boring Bars
C○○(○)□-	SCLC℅○○-○○A	F39	Boring Bars (Dynamic Bar)
C○○□-	SCLP℅○	F43	Boring Bars
C○○□-	SJLC℅○○-○○○	F50	Boring Bars
C○○□-	SJZC℅○○-○○○	F50	Boring Bars
C○○□-	STLB℅○○-○○A	F53	Boring Bars (Dynamic Bar)
C○○□-	STXB℅○○-○○○	F50	Boring Bars / Previous Part Number
C○○□-	STXP℅○○-○○○	F56	Boring Bars / Previous Part Number
C○○□-	STZB℅○○-○○○	F56	Boring Bars / Previous Part Number
C○○□-	SWUB℅○	F66	Boring Bars
C○○□-	SWUB℅○○-○○A	F65	Boring Bars (Dynamic Bar)
CCET	○○○○○F℅-USF	B11	Insert (Turning)
CCET	○○○○○(○)(○)M℅-F	B10	Insert (Turning)
CCET	○○○○(○)(○)MF℅-J	B12	Insert (Turning)
CCET	○○○○(○)(○)MF℅-U	B11	Insert (Turning)
CCET	○○○○○(○)MF℅-USF	B11	Insert (Turning)
CCET	○○○○○(○)(○)M℅-FSF	B10	Insert (Turning)
CCET	○○○○○(○)℅-FSF	B10	Insert (Turning)
CCGT	○○○○(○)	B9	Insert (Turning)
CCGT	○○○○AH	B12	Insert (Turning)
CCGT	○○○○(○)E℅-U	B12	Insert (Turning)
CCGT	○○○○○F℅-U	B12	Insert (Turning)
CCGT	○○○○(○)(○)M	B9	Insert (Turning)
CCGT	○○○○○○M-CF	B8	Insert (Turning)
CCGT	○○○○○○MP-CF	B8	Insert (Turning)
CCGT	○○○○○MP-CK	B8	Insert (Turning)
CCGT	○○○○(○)ME℅-U	B12	Insert (Turning)
CCGT	○○○○(○)(○)MF	B10	Insert (Turning)
CCGT	○○○○(○)MF-GF	B8	Insert (Turning)
CCGT	○○○○(○)MFP-GF	B8	Insert (Turning)
CCGT	○○○○(○)MF-GQ	B8	Insert (Turning)
CCGT	○○○○(○)MFP-GQ	B9	Insert (Turning)
CCGT	○○○○(○)MFP-SK	B8	Insert (Turning)
CCGT	○○○○(○)(○)MF℅-U	B12	Insert (Turning)
CCGT	○○○○○(○)(○)M℅-F	B11	Insert (Turning)
CCGT	○○○(○)(○)℅-A3	B13	Insert (Turning)
CCGT	○○○○○(○)℅-F	B11	Insert (Turning)
CCGW	○○○○(○)(○)	B13,C12	Insert (Turning)
CCGW	○○○○(○)(○)NE	C12	Insert (Turning)
CCGW	○○○○(○)(○)SE	C12	Insert (Turning)
CCMT	○○○○(○)	B9,C12	Insert (Turning)
CCMT	○○○(○)(○)GK	B9	Insert (Turning)
CCMT	○○○○(○)HQ	B9	Insert (Turning)
CCMT	○○○○MQ	B10	Insert (Turning)
CCMT	○○○○(○)NE	C12	Insert (Turning)
CCMT	○○○○(○)PP	C9	Insert (Turning)
CCMT	○○○○(○)SE	C12	Insert (Turning)
CCMW	○○○○MEF	C4	Insert (Turning)
CCMW	○○○○S○○○○○MES	C4	Insert (Turning)
CCMW	○○○○S○○○○○MET	C4	Insert (Turning)
CCMW	○○○○(○)(○)S○○○○○SET	C4	Insert (Turning)
CCMW	○○○○(○)T○○○○○ME	C4	Insert (Turning)
CCMW	○○○○(○)(○)T○○○○○SE	C4	Insert (Turning)
CKC-2℅		G24,J27	Spare Parts (Clamp)
CNGG	○○FP-TK	B41	Insert (Turning)
CNGG	○○○(○)MFP-SK	B41	Insert (Turning)
CNGU	○○○○(○)ME℅-U	B38	Insert (Turning)
CNGU	○○○○(○)(○)MF℅-F	B38	Insert (Turning)
CNGU	○○○○(○)(○)MF℅-U	B38	Insert (Turning)
CNGU	○○○○○MF-SK	B38	Insert (Turning)
CNGU	○○○○○MFP-SK	B38	Insert (Turning)
CNMU	○○○○(○)E-GK	B38	Insert (Turning)
CPGB	○○○S○○○○○MES	C4	Insert (Turning)
CPGB	○○○(○)(○)S○○○○○MET	C4	Insert (Turning)
CPGB	○○○(○)(○)S○○○○○SET	C4	Insert (Turning)
CPGB	○○○(○)(○)T○○○○○ME	C4	Insert (Turning)
CPGB	○○○(○)(○)(○)T○○○○○SE	C4	Insert (Turning)
CPGT	○○○○(○)	B13	Insert (Turning)
CPMB	○○○(○)(○)(○)	B14	Insert (Turning)
CPMH	○○○(○)(○)(○)	B13,G13	Insert (Turning)
CPMH	○○○(○)(○)HQ	B13	Insert (Turning)
CPMH	○○○(○)(○)(○)NE	C13	Insert (Turning)
CPMH	○○○(○)(○)℅-Y	B14	Insert (Turning)
CPMH	○○○(○)(○)SE	C13	Insert (Turning)
CPMT	○○○(○)(○)GP	B13	Insert (Turning)

Part Numbers in Alphanumeric Order

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Part Number		Page	Description
CPMT	○○○(○)(○)(○)PP	B13	Insert (Turning)
CPMT	○○○(○)(○)XP	B14	Insert (Turning)
CPMT	○○○XQ	B14	Insert (Turning)
CPS-5S		J28,P3	Spare Parts (Clamp Set)
D			
DCET	○○○○○F□-JSF	B20	Insert (Turning)
DCET	○○○○○F□-USF	B19	Insert (Turning)
DCET	○○○○(○)(○)MF□-J	B20	Insert (Turning)
DCET	○○○○○(○)MF□-JSF	B20	Insert (Turning)
DCET	○○○○(○)(○)MF□-U	B19	Insert (Turning)
DCET	○○○○○(○)MF□-USF	B19	Insert (Turning)
DCET	○○○○(○)(○)M□-F	B18	Insert (Turning)
DCET	○○○○(○)(○)M□-FSF	B18	Insert (Turning)
DCET	○○○○(○)□-FSF	B18	Insert (Turning)
DCGT	○○○○(○)	B17	Insert (Turning)
DCGT	○○○○AH	B21	Insert (Turning)
DCGT	○○○○○CF	B15	Insert (Turning)
DCGT	○○○○○CK	B15	Insert (Turning)
DCGT	○○○○(○)E□-J	B20	Insert (Turning)
DCGT	○○○○(○)E□-U	B19	Insert (Turning)
DCGT	○○○○○F□-J	B20	Insert (Turning)
DCGT	○○○○○F□-U	B19	Insert (Turning)
DCGT	○○○○(○)(○)M	B17	Insert (Turning)
DCGT	○○○○(○)(○)ME□-J	B20	Insert (Turning)
DCGT	○○○○(○)ME□-U	B19	Insert (Turning)
DCGT	○○○○(○)(○)MF	B17	Insert (Turning)
DCGT	○○○○(○)MF-GF	B15	Insert (Turning)
DCGT	○○○○(○)MF-GQ	B16	Insert (Turning)
DCGT	○○○○(○)MFP-GF	B15	Insert (Turning)
DCGT	○○○○(○)MFP-GQ	B16	Insert (Turning)
DCGT	○○○○(○)MFP-SK	B15	Insert (Turning)
DCGT	○○○○(○)(○)MF□-J	B20	Insert (Turning)
DCGT	○○○○(○)(○)MF□-U	B19	Insert (Turning)
DCGT	○○○○(○)(○)M□-F	B18	Insert (Turning)
DCGT	○○○○○M-CF	B15	Insert (Turning)
DCGT	○○○○○MP-CF	B15	Insert (Turning)
DCGT	○○○○○M-CK	B15	Insert (Turning)
DCGT	○○○○○MP-CK	B16	Insert (Turning)
DCGT	○○○○(○)□-A3	B21	Insert (Turning)
DCGT	○○○○(○)□-F	B18	Insert (Turning)
DCGW	○○○○(○)	B21	Insert (Turning)
DCMT	○○○○(○)	B17,C13	Insert (Turning)
DCMT	○○○○(○)GK	B16	Insert (Turning)
DCMT	○○○○(○)GP	B16	Insert (Turning)
DCMT	○○○○(○)HQ	B16	Insert (Turning)
DCMT	○○○○(○)MQ	B17	Insert (Turning)

Part Number		Page	Description
DCMT	○○○○(○)NE	C13	Insert (Turning)
DCMT	○○○○(○)PP	B16	Insert (Turning)
DCMT	○○○○(○)□-NE	C13	Insert (Turning)
DCMT	○○○○(○)SE	C13	Insert (Turning)
DCMT	○○○○(○)XP	B17	Insert (Turning)
DCMT	○○○○XQ	B17	Insert (Turning)
DCMW	○○○○MEF	C5	Insert (Turning)
DCMW	○○○○(○)S○○○○○MES	C5	Insert (Turning)
DCMW	○○○○(○)S○○○○○MET	C5	Insert (Turning)
DCMW	○○○○(○)S○○○○○SET	C5	Insert (Turning)
DCMW	○○○○(○)T○○○○○ME	C5	Insert (Turning)
DCMW	○○○○(○)T○○○○○SE	C5	Insert (Turning)
DNGG	○○○FP-TK	B41	Insert (Turning)
DNGU	○○○○(○)ME□-U	B39	Insert (Turning)
DNGU	○○○○(○)(○)MF□-F	B39	Insert (Turning)
DNGU	○○○○(○)(○)MF□-U	B39	Insert (Turning)
DNGU	○○○○(○)MF-SK	B39	Insert (Turning)
DNGU	○○○○(○)MFP-SK	B39	Insert (Turning)
DNMU	○○○○(○)E-GK	B39	Insert (Turning)
DPET	○○○○○F□-USF	B21	Insert (Turning)
DPET	○○○○○(○)M□-FSF	B21	Insert (Turning)
DPET	○○○○○(○)MF□-USF	B21	Insert (Turning)
DPET	○○○○○□-FSF	B21	Insert (Turning)
DT-7		G40,G41,P5	Spare Parts (Torx Wrench / Screwdriver type)
DTM-6		M6,P5	Spare Parts (Torx Wrench / Screwdriver type)
DTM-8		M3,P5	Spare Parts (Torx Wrench / Screwdriver type)
DTPM-8		M9,P5	Spare Parts (Torx Plus Wrench / Screwdriver type)
E			
E○○□-	SCLC□○A	F39	Boring Bars (Dynamic Bar)
E○○□-	SCLC□○A-○/○	F39	Boring Bars (Dynamic Bar)
E○○□-	SCLC□○○-○○A	F39	Boring Bars (Dynamic Bar)
E○○□-	SCLC□○○-○○A-○/○	F39	Boring Bars (Dynamic Bar)
E○○□-	SCLP□○○-○○A	F41	Boring Bars (Dynamic Bar)
E○○□-	SCLP□○○-○○A-○/○	F41	Boring Bars (Dynamic Bar)
E○○□-	SDQC□○○-○○A	F46	Boring Bars (Dynamic Bar)
E○○□-	SDQC□○○-○○A-○/○	F46	Boring Bars (Dynamic Bar)
E○○□-	SDUC□○○-○○A	F45	Boring Bars (Dynamic Bar)
E○○□-	SDUC□○A	F45	Boring Bars (Dynamic Bar)
E○○□-	SDUC□○A-○/○	F45	Boring Bars (Dynamic Bar)
E○○□-	SDUC□○○-○○A-○/○	F45	Boring Bars (Dynamic Bar)
E○○□-	SDZC□○○-○○A	F47	Boring Bars (Dynamic Bar)
E○○□-	STLP□○○-○○A	F53	Boring Bars (Dynamic Bar)
E○○□-	STLP□○○-○○A-○/○	F53	Boring Bars (Dynamic Bar)
E○○□-	SVPB□○○-○○A	F61	Boring Bars (Dynamic Bar)
E○○□-	SVPC□○○-○○A	F61	Boring Bars (Dynamic Bar)
E○○□-	SVUB□○○-○○A	F63	Boring Bars (Dynamic Bar)

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Part Numbers in Alphanumeric Order

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Part Number	Page	Description
E○○□- SVUC%○○-○○A	F63	Boring Bars (Dynamic Bar)
E○○□- SWUB%○○-○○A	F65	Boring Bars (Dynamic Bar)
E○○□- SWUB%○○-○○A-○/○	F65	Boring Bars (Dynamic Bar)
E○○□- SWUP%○○-○○A	F65	Boring Bars (Dynamic Bar)
E○○□- SWUP%○○-○○A-○/○	F65	Boring Bars (Dynamic Bar)
EZBR ○○○○○○-○○○NB	C10,C21,F16	EZ Bars (Boring)
EZBR ○○○○○○○□□-○○○F	F14,F15	EZ Bars (Boring)
EZBR ○○○○○○○□□-○○○H	F14,F15	EZ Bars (Boring)
EZFGR ○○○○○○-○○○	G45	EZ Bars (Face Grooving)
EZGR ○○○○○○-○○○	G34	EZ Bars (Internal Grooving)
EZGR ○○○○○○-○○○S	G34	EZ Bars (Internal Grooving)
EZH ○○○○○(.○)□□-○○(○)	F20~F25	Sleeve (for EZ Bars)
EZTR ○○○○○○-○○-○○○	J10	EZ Bars (Internal Threading)
EZVBR ○○○○○○-○○○	F19	EZ Bars (Copying / Profiling)
F		
FH-2	E17~E19,E22, E24,E30,P5	Spare Parts (Hexagon Wrench / Flag type)
FH-2.5	E41,P5	Spare Parts (Hexagon Wrench / Flag type)
FT-5	E34,P5	Spare Parts (Torx Wrench / Flag type)
FT-6	E29,E32,E33, E36,F18,F39, F43,F50,F53, F56 F58,F61, F63,F65,F59, G40,G41,J29, P5	Spare Parts (Torx Wrench / Flag type)
FT-7	F47,G42,P5	Spare Parts (Torx Wrench / Flag type)
FT-8	E21,E23,E25~ E35,E42,F39, F41,F43~F45, F47,F49,F50, F55,F57,F59, G4,G40~G42, J6,J29,P5	Spare Parts (Torx Wrench / Flag type)
FT-10	E17~E19,E29, E43,F32,F33, F35,F41,F49, G4,G5,P5	Spare Parts (Torx Wrench / Flag type)
FT-15	E20,E21,E23, E25~E28,E30, E31,E35,E42, F39,F43,F45, F59,G12,G13, J28,J29,P5	Spare Parts (Torx Wrench / Flag type)
G		
GBA ○○%○○○	G8~G10	Insert (Grooving / Previous Part Number)
GBA ○○%○○○MY	G9	Insert (Grooving / Previous Part Number)
GBA ○○%○○○MYN	G7	Insert (Grooving)
GBA ○○%○○○N	G6	Insert (Grooving)
GBA ○○%○○○R	G10	Insert (Grooving / Previous Part Number)
GBA ○○%○○○-○○○	C9,C20,G8~ G10	Insert (Grooving) / Previous Part Number)
GBA ○○%○○○-○○○GM	G9	Insert (Grooving)
GBA ○○%○○○-○○○MY	G9	Insert (Grooving) / Previous Part Number)
GBA ○○%○○○-○○○R	G10	Insert (Grooving) / Previous Part Number)
GDG ○○○○N-○○○GS	G17	Insert (Grooving)
GDG ○○○○N-○○○PG	H12	Insert (Cut-Off)
GDG ○○○○%-○○○PG-15D	H12	Insert (Cut-Off)
GDGS ○○○○N-○○○NB	C9,C20,G17	Insert (Grooving)

Part Number	Page	Description
GDM ○○○○N-○○○GL	G16	Insert (Grooving)
GDM ○○○○N-○○○GM	G16	Insert (Grooving)
GDM ○○○○N-○○○PF	H12	Insert (Cut-Off)
GDM ○○○○N-○○○PH	G17,H13	Insert (Grooving / Cut-Off)
GDM ○○○○N-○○○PM	H13	Insert (Cut-Off)
GDM ○○○○N-○○○PQ	H12	Insert (Cut-Off)
GDM ○○○○N-○○○R-CM	G17	Insert (Grooving)
GDM ○○○○%-○○○PF-15D	H12	Insert (Cut-Off)
GDM ○○○○%-○○○PM-6D	H13	Insert (Cut-Off)
GDM ○○○○%-○○○PQ-15D	H12	Insert (Cut-Off)
GDMS ○○○○N-○○○GM	G16	Insert (Grooving)
GDMS ○○○○N-○○○PH	G17,H13	Insert (Grooving / Cut-Off)
GDMS ○○○○N-○○○PM	H13	Insert (Cut-Off)
GDMS ○○○○%-○○○PM-6D	H13	Insert (Cut-Off)
GE% ○○○-○○○A	G38	Insert (Grooving)
GE% ○○○-○○○B	G38	Insert (Grooving)
GE% ○○○-○○○C	G39	Insert (Grooving)
GER ○○○-○○○AR	G38	Insert (Grooving)
GER ○○○-○○○BR	G38	Insert (Grooving)
GER ○○○-○○○CM	G39	Insert (Grooving)
GER ○○○-○○○CR	G39	Insert (Grooving)
GM% ○-TK-8D	G27,H18	Insert (Grooving / Plunge & Turn)
GM% ○(.○)-○(○)D	G27,H18	Insert (Grooving / Plunge & Turn)
GMG ○○○○-○○	G26	Insert (Grooving / Plunge & Turn) / Previous Part Number
GMG ○○○○-○○(○)MG	G26	Insert (Grooving / Plunge & Turn) / Previous Part Number
GMG ○○○○-○○(○)R	G26	Insert (Grooving / Plunge & Turn) / Previous Part Number
GMG ○○○○-○○○MS	G26	Insert (Grooving / Plunge & Turn) / Previous Part Number
GMM ○○○○-MT	G27,H18	Insert (Grooving / Plunge & Turn)
GMM ○○○○-NB	G27,H18	Insert (Grooving / Plunge & Turn)
GMM ○○○○%-MT-15D	G27,H18	Insert (Grooving / Plunge & Turn)
GMM ○○○○%-TK-8D	G27,H18	Insert (Grooving / Plunge & Turn)
GMM ○○○○%-TMR-6D	H18	Insert (Grooving / Plunge & Turn)
GMM ○(○)(○)(○)-TK	G27,H18	Insert (Grooving / Plunge & Turn)
GMM ○○○○-TMR	H18	Insert (Grooving / Plunge & Turn)
GMM ○○○○-○○	G26	Insert (Grooving / Plunge & Turn) / Previous Part Number
GMM ○○○○-○○(○)MS	G26	Insert (Grooving / Plunge & Turn) / Previous Part Number
GMM ○○○○-○○(○)R	G26	Insert (Grooving / Plunge & Turn) / Previous Part Number
GMM ○○○○-○○○MW	G26	Insert (Grooving / Plunge & Turn)
GMN ○(.○)	C9,C20,G27, G28,H18	Insert (Grooving / Plunge & Turn)
GMN ○-TK	G27,H18	Insert (Grooving / Plunge & Turn)
H		
HH5X16	G20,G21,G30, G31,H17,H20, H21,P2	Spare Parts (Screw)
HH5X25	G20,G21,G30, G31,H17,P2	Spare Parts (Screw)
HPB% ○○○○-○○○	F28	2-Edge Tip-Bars (Boring)
HPB% ○○○○-○○○NB	F28	2-Edge Tip-Bars (Boring)

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number	Page	Description
HPBT%% ○○○○-○○○	F28	2-Edge Tip-Bars (Back Boring)
HPFG%% ○○○○-○○	G47	2-Edge Tip-Bars (Internal Face Grooving)
HPG%% ○○○○-○○	G36	2-Edge Tip-Bars (Internal Grooving)
HPTR ○○○○○-○○-○○○	J14	2-Edge Tip-Bars (Internal Threading)
HS3X4	F32,F34,P2	Spare Parts (Screw)
HS3X4P	F20,F22,F25,P2	Spare Parts (Screw)
HS4X4P	F20,F22,F25,P2	Spare Parts (Screw)
HS6X4P	F62,G42,P2	Spare Parts (Screw)
HSB4X8%%	E17~E19,E22,E24,E30,P2	Spare Parts (Screw)
J		
JCET ○○○○○(○)M%%-F	B22	Insert (Turning)
JCET ○○○○○(○)M%%-FSF	B22	Insert (Turning)
JCET ○○○○○(○)%%-FSF	B22	Insert (Turning)
JCGT ○○○○○(○)M%%-F	B22	Insert (Turning)
JCGT ○○○○○(○)%%-F	B22	Insert (Turning)
K		
KCG ○○○○%%	G25	Insert (Grooving) / Cera-Notch
KCGP ○○○○%%	G25	Insert (Grooving) / Cera-Notch
KCRP ○○○○%%	G25	Insert (Grooving) / Cera-Notch
KCT ○%%	J26	Insert (Threading) / Cera-Notch
KCTK ○%%	J26	Insert (Threading) / Cera-Notch
KCTP ○%%	J26	Insert (Threading) / Cera-Notch
KGBA%% ○○-○	G12	Toolholder (Grooving)
KGBA%% ○○-○-○○(□)	G12	Toolholder (Grooving)
KGBA%% ○○○○□-○○	G12	Toolholder (Grooving)
KGBA%% ○○○○□22-○○	G12	Toolholder (Grooving)
KGBA%% ○○○○□22-○○T5	G12	Toolholder (Grooving)
KGBAS%% ○○-○	G13	Toolholder (Grooving)
KGBAS%% ○○-○-○○	G13	Toolholder (Grooving)
KGBAS%% ○○○○□-○○	G13	Toolholder (Grooving)
KGBAS%% ○○○○□22-○○	G13	Toolholder (Grooving)
KGBAS%% ○○○○□22-○○T5	G13	Toolholder (Grooving)
KGD%% ○(○)-○(.○)JX	G19,H16	Toolholder (Grooving / Cut-Off)
KGD%% ○○-○D○○JX	G19,H16	Toolholder (Grooving / Cut-Off)
KGD%% ○○-○T○○	G20,H17	Toolholder (Grooving / Cut-Off)
KGD%% ○○○○□(□)-○(.○)	G19,H16	Toolholder (Grooving / Cut-Off)
KGD%% ○○○○□□-○D○○	G19,H16	Toolholder (Grooving / Cut-Off)
KGD%% ○○○○□-○(.○)T○○	G21,H17	Toolholder (Grooving / Cut-Off)
KGM%% ○-○-○	H20	Toolholder (Grooving / Cut-Off)
KGM%% ○○-○	G30,H20	Toolholder (Grooving / Plunge & Turn)
KGM%% ○○-○T	G31	Toolholder (Grooving / Plunge & Turn)
KGM%% ○○○○□-○	G30,H20	Toolholder (Grooving / Plunge & Turn)
KGM%% ○○○○□-○T○○	G31,H21	Toolholder (Grooving / Plunge & Turn)
KGM%% ○○○○□-○(.○)-○○	G30,H20	Toolholder (Grooving / Plunge & Turn)
KGM%% ○○○○□□-○(.○)	G30,H20	Toolholder (Grooving / Plunge & Turn)

Part Number	Page	Description
KKC%% ○(○)-○□(□)	G24,J27	Toolholder (Grooving/ Threading)
KKC%% ○○○○□-○-○○○F	G24,J27	Toolholder (Grooving/ Threading)
KSTB	E42,E43	Toolholder (Sup-Spindle)
KTGF%% ○(○)-○○JXF	G4	Toolholder (Grooving)
KTGF%% ○○○○□-○○	G4	Toolholder (Grooving)
KTGF%% ○○○○□(□)-○○F	G4	Toolholder (Grooving)
KTKF%% ○(○)(.○)-○○JX	E12,H8,J6	Toolholder (Back Turning / Cut-Off / Threading)
KTKF%% ○○○○□(□)-○○	E12,H8,J6	Toolholder (Back Turning / Cut-Off / Threading)
KTKFS%% ○-○○JX	H10	Toolholder (Cut-Off)
KTKFS%% ○○○○□-○○□	H10	Toolholder (Cut-Off)
KTKH%% ○-○(.○)-○S	H24,H25	Toolholder (Cut-Off)
KTKH%% ○○○○□-○S	H25	Toolholder (Cut-Off)
KTKH%% ○○○○□-○-○○○S	H24	Toolholder (Cut-Off)
KTKH%% ○○○○□-○T○○S	H25	Toolholder (Cut-Off)
KTN%% ○○○○□-○○	J28	Toolholder (Threading)
KTNS%% ○○○○□-○○	J28	Toolholder (Threading)
KTTXR ○(○)-○JXF	J8	Toolholder (Threading)
KTTXR ○○○○□(□)-○○F	J8	Toolholder (Threading)
L		
LC-42N	E40,P3	Spare Parts (Shim)
LCP025097	F20	Spare Parts (Adjustment Pin)
LCP025140	F22,P3	Spare Parts (Adjustment Pin)
LGBA-16%%S	G12,G13,P4	Spare Parts (Clamp Set)
LGBA-22%%S	G12,G13,P4	Spare Parts (Clamp Set)
LL-1N	E41,P3	Spare Parts (Lock Pin)
LL-2N	E40,P3	Spare Parts (Lock Pin)
LOMU ○○○○○○ER-GH	M10	Insert (Milling)
LOMU ○○○○○○ER-GM	M10	Insert (Milling)
LOMU ○○○○○○ER-SM	M10	Insert (Milling)
LPA-11	E17~E19,E30,P3	Spare Parts (Anchor Pin)
LPA-13	E17~E19,P3	Spare Parts (Anchor Pin)
LPA-17	E17~E19,P3	Spare Parts (Anchor Pin)
LPF-11	E22,P3	Spare Parts (Anchor Pin)
LPF-13	E22,P3	Spare Parts (Anchor Pin)
LPF-17	E22,P3	Spare Parts (Anchor Pin)
LPF-1113	E30,P3	Spare Parts (Anchor Pin)
LPF-1117	E30,P3	Spare Parts (Anchor Pin)
LS-1N	E41,P2	Spare Parts (Lock Screw)
LS-2N	E40,P2	Spare Parts (Lock Screw)
LSP-1	E41,P3	Spare Parts (Shim Pin)
LSP-2	E40,P3	Spare Parts (Shim Pin)
LT-32N	E41,P3	Spare Parts (Shim)
LT-32N-20	E41,P3	Spare Parts (Shim)
LTK-5	H24,H25,P5	Spare Parts (Wrench)
LTW-8SS	E39,P5	Spare Parts (Torx Wrench / L-sharp type)

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number	Page	Description
LTW-10S	E12,E35~E37,G48,G49,H8,H10,J6,P5	Spare Parts (Torx Wrench / L-sharp type)
LTW-10SS	E38,P5	Spare Parts (Torx Wrench / L-sharp type)
LTW-15S	F32,G19,G30,H16,H20,P5	Spare Parts (Torx Wrench / L-sharp type)
LTW-20	E23,G19,G30,G31,H16,H20,H21,P5	Spare Parts (Torx Wrench / L-sharp type)
LTW-25	H17,P5	Spare Parts (Torx Wrench / L-sharp type)
LW-1.5	F20,F22,F25,F34,P5	Spare Parts (Hexagon Wrench / L-sharp type)
LW-2	F20,F22,F25,P5	Spare Parts (Hexagon Wrench / L-sharp type)
LW-3	E40,F62,G42,P5	Spare Parts (Hexagon Wrench / L-sharp type)
LW-4	E30,E31,G20,E21,G30,G31,H17,H20,H21,P5	Spare Parts (Hexagon Wrench / L-sharp type)
M		
MEC ○○(○)(○)-S○○(○)-○○	M3	End Mill (MEC)
MEC ○○(○)(○)-S○○(○)-○○T	M3	End Mill (MEC)
MECX ○○(○)(○)-S○○(○)-○○-○T	M6	End Mill (MECX)
MEW ○○-S○○-○○-○T	M9	End Mill (MEW)
MEW ○○○○-W○○○-○○-○T	M9	End Mill (MEW)
MP-1	M9,P5	Anti-seize Compound
P		
PC-1	E41,P5	Spare Parts (Punch)
PC-2	E40,P5	Spare Parts (Punch)
PCLNR ○○○○□□-○○FF	E40	Toolholder (Double Sided Tooling)
PSB% ○○○○-○○NBS	F29	Tip-Bar (Boring)
PSB% ○○○○-○○S	F29	Tip-Bar (Boring)
PSBT% ○○○○-○○S	F29	Tip-Bar (Boring)
PTLNR ○○○○□□-○○FF	E40	Toolholder (Double Sided Tooling)
S		
S○○□- CTUP%○	F55	Boring Bars
S○○(.○)□- KTGFL16	G5	Sleeve Holder (Grooving)
S○○(.○)□- KTTXL16	J8	Sleeve Holder (Threading)
S○○(.○)□- SCLCL○○	E34	Sleeve Holder (Turning)
S○○○□- SCLCR○○-○○○EZ	F18	Toolholder (EZ Bar-Plus)
S○○□- SCLC%○	F43	Boring Bars
S○○□- SCLC%○○-○○A	F39	Boring Bars (Dynamic Bar)
S○○□- SCLC%○○-○○AE	F39	Boring Bars (Dynamic Bar)
S○○□- SCLP%○	F43	Boring Bars
S○○□- SCLP%○○-○○A	F41	Boring Bars (Dynamic Bar)
S○○(.○)□- SDLCL○○	E35	Sleeve Holder (Turning)
S○○□- SDQC%○○-○○A	F46	Boring Bars (Dynamic Bar)
S○○(.○)□- SDUCL○○	E35	Sleeve Holder (Turning)
S○○□- SDUC%○	F48	Boring Bars
S○○□- SDUC%○○-○○A	F45	Boring Bars (Dynamic Bar)
S○○□- SDZC%○	F49	Boring Bars
S○○□- SDZC%○○-○○A	F47	Boring Bars (Dynamic Bar)
S○○□- STLB%○.○AE	F53	Boring Bars (Dynamic Bar)
S○○□- STLB%○○-○○A	F53	Boring Bars (Dynamic Bar)
S○○□- STLB%○○-○○AE	F53	Boring Bars (Dynamic Bar)
S○○□- STLC%○○-○○A	F51	Boring Bars (Dynamic Bar)
S○○□- STLP%○○-○○A	F53	Boring Bars (Dynamic Bar)
S○○□- STUB%○	F54	Boring Bars
S○○□- STUP%○	F54	Boring Bars
S○○(.○)□- STW%15	F36,G48	Toolholder (for Twin Bars)
S○○□- STWP %○	F54	Boring Bars
S○○□- SVJB%○	F63	Boring Bars
S○○□- SVJC%○○-○○A	F58	Boring Bars (Dynamic Bar)
S○○□- SVJP%○○-○○A	F58	Boring Bars (Dynamic Bar)
S○○□- SVNR12N	F33	Toolholder (for System Tip-Bars)
S○○(.○)□- SVNR12SN	F33	Toolholder (for System Tip-Bars)
S○○(.○)□- SVNR12SXN	F35	Toolholder (for System Tip-Bars)
S○○□- SVNR12XN	F35	Toolholder (for System Tip-Bars)
S○○□- SVPB%○○-○○A	F61	Boring Bars (Dynamic Bar)
S○○□- SVPC%○○-○○A	F61	Boring Bars (Dynamic Bar)
S○○(.○)□- SVUBL○○	E36	Sleeve Holder (Turning)
S○○□- SVUB%○○-○○A	F63	Boring Bars (Dynamic Bar)
S○○□- SVUCL○○	E36	Sleeve Holder (Turning)
S○○□- SVUC%○○-○○A	F63	Boring Bars (Dynamic Bar)
S○○□- SVZB%○○-○○A	F63	Boring Bars (Dynamic Bar)
S○○□- SVZC%○○-○○A	F63	Boring Bars (Dynamic Bar)
S○○□- SWUB%○	F63	Boring Bars
S○○□- SWUB%○.○AE	F65	Boring Bars (Dynamic Bar)
S○○□- SWUB%○○-○○A	F65	Boring Bars (Dynamic Bar)
S○○□- SWUB%○○-○○AE	F65	Boring Bars (Dynamic Bar)
S○○□- SWUP%○○-○○A	F65	Boring Bars (Dynamic Bar)
SABSR ○(○)-○○JXF	E17	Toolholder (Turning)
SABSR ○○○○□(□)-○○F	E17	Toolholder (Turning)
SABWR ○(○)-○○JXF	E18,E19	Toolholder (Turning)
SABWR ○○○○□(□)-○○F	E18,E19	Toolholder (Turning)
SB-1STR	F56,P2	Spare Parts (Screw)
SB-1TR	F53,F56,P2	Spare Parts (Screw)
SB-2TR	F56,J29,P2	Spare Parts (Screw)
SB-3.5TR	J28,J29,P2	Spare Parts (Screw)
SB-5TR	G30,G31,G20,H21,P2	Spare Parts (Screw)
SB-1635TR	F18,F39,F50,P2	Spare Parts (Screw)
SB-2035TR	F18,F39,P2	Spare Parts (Screw)
SB-2035TRG	F53,F63,M6,P2	Spare Parts (Screw)
SB-2040TR	J29,P2	Spare Parts (Screw)
SB-2042TRG	M6,P2	Spare Parts (Screw)
SB-2045TRN	G40,G41,P2	Spare Parts (Screw)
SB-2050TR	E29,E32,E33,E36,F58,F61,F63,F65,P2	Spare Parts (Screw)
SB-2250TR	F51,P2	Spare Parts (Screw)
SB-2255TR	G40~G42,P2	Spare Parts (Screw)

Part Numbers in Alphanumeric Order

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Part Number		Page	Description
TBGW	○○○○(○)NE	C14	Insert (Turning)
TBMT	○○○○(○)	C14	Insert (Turning)
TBMT	○○○○(○)DP	B23	Insert (Turning)
TBMT	○○○○(○)NE	C14	Insert (Turning)
TCET	○○○○(○)(○)F%-USF	B24	Insert (Turning)
TCET	○○○○(○)MF%-USF	B24	Insert (Turning)
TCGT	○○○(○)(○)(○)E%-U	B24	Insert (Turning)
TCGT	○○○○(○)(○)F%-U	B24	Insert (Turning)
TCGT	○○○(○)(○)(○)ME%-U	B24	Insert (Turning)
TCGT	○○○(○)(○)(○)(○)MF%-U	B24	Insert (Turning)
TCGT	○○○(○)%-A3	B24	Insert (Turning)
TCGW	○○○(○)(○)(○)	B24,C14	Insert (Turning)
TCGW	○○○(○)NE	C14	Insert (Turning)
TCGW	○○○(○)SE	C14	Insert (Turning)
TCMT	○○○○(○)(○)	C14	Insert (Turning)
TCMT	○○○○(○)(○)HQ	B23	Insert (Turning)
TCMT	○○○(○)(○)(○)NE	C14	Insert (Turning)
TCMT	○○○(○)SE	C14	Insert (Turning)
TGF	○○%○○○N	G3	Insert (Grooving)
TGF	○○%○○○-○○○	C20,G3	Insert (Grooving)
TK%	○(.○)	H23	Insert (Cut-Off)
TK%	○(.○)-P	H23	Insert (Cut-Off)
TKF	○○%○○○-AS	C18,E16	Insert (Grooving / Turning)
TKF	○○%○○○-ASR	C18,E16	Insert (Grooving / Turning)
TKF	○○%○○○-NB(○.○)	C18,E16,H6,H7	Insert (Grooving / Turning)
TKF	○○%○○○-NB-○○DR	H6,H7	Insert (Cut-Off)
TKF	○○%○○○-S	H6,H7	Insert (Cut-Off)
TKF	○○%○○○-S-○○DR	H6,H7	Insert (Cut-Off)
TKF	○○%○○○-T	H6,H7	Insert (Cut-Off)
TKF	○○%○○○-T-○○DR	H6,H7	Insert (Cut-Off)
TKFB	○○L○○○○○MR	B35	Insert (Back turning)
TKFB	○○R○○○○○M	B35	Insert (Back turning)
TKFB	○○R○○○○○-GQ	B36	Insert (Back turning)
TKFS	○○%○○○-S	H11	Insert (Cut-Off)
TKFT	○○L□○○○○(○)	J6	Insert (Threading)
TKFT	○○R□○○○○(○)	J6	Insert (Threading)
TKN	○(.○)	H23	Insert (Cut-Off)
TKN	○(.○)-P	H23	Insert (Cut-Off)
TN-32		J28,P3	Spare Parts (Shim)
TNEG	○○○(○)%-SSF	B41	Insert (Turning)
TNGG	○○○FP-TK	B41	Insert (Turning)
TNGG	○○○(○)MFP-SK	B41	Insert (Turning)
TNGG	○○○(○)%-S	B41	Insert (Turning)
TNGU	○○○○(○)ME%-U	B40	Insert (Turning)
TNGU	○○○○(○)(○)MF%-F	B40	Insert (Turning)
TNGU	○○○○(○)(○)MF%-U	B40	Insert (Turning)
TNN	○○E%○○(.○)NPT	J20	Insert (Threading / Previous Part Number)

Part Number		Page	Description
TNN	○○E%○○PT	J20	Insert (Threading Previous Part Number)
TNN	○○E%○○UN	J18	Insert (Threading / Previous Part Number)
TNN	○○E%○○W	J18	Insert (Threading / Previous Part Number)
TNN	○○E%○○○M	J16	Insert (Threading / Previous Part Number)
TNN	○○E%○○○TR	J24	Insert (Threading / Previous Part Number)
TNN	○○E%○○○○	J22,J24	Insert (Threading / Previous Part Number)
TNN	○○I%○○(.○)NPT	J21	Insert (Threading / Previous Part Number)
TNN	○○I%○○PT	J21	Insert (Threading / Previous Part Number)
TNN	○○I%○○UN	J19	Insert (Threading / Previous Part Number)
TNN	○○I%○○W	J19	Insert (Threading / Previous Part Number)
TNN	○○I%○○○TR	J25	Insert (Threading / Previous Part Number)
TNN	○○I%○○○○(○)	J23,J25	Insert (Threading / Previous Part Number)
TNN	○○I%○○○M	J17	Insert (Threading / Previous Part Number)
TPET	○○○○(○)(○)F%-USF	B27	Insert (Turning)
TPET	○○○○(○)(○)MF%-USF	B27	Insert (Turning)
TPET	○○○○(○)(○)M%-FSF	B27	Insert (Turning)
TPET	○○○○(○)(○)%-FSF	B27	Insert (Turning)
TPGB	○○○(○)(○)(○)	B27,C15	Insert (Turning)
TPGB	○○○MEF	C6	Insert (Turning)
TPGB	○○○(○)(○)(○)NE	C15	Insert (Turning)
TPGB	○○○(○)(○)(○)SE	C14	Insert (Turning)
TPGB	○○○S○○○○○MES	C6	Insert (Turning)
TPGB	○○○(○)S○○○○○MET	C6	Insert (Turning)
TPGB	○○○(○)(○)(○S○○○○○SET	C6	Insert (Turning)
TPGB	○○○(○)T○○○○○ME	C6	Insert (Turning)
TPGB	○○○(○)(○)(○)T○○○○○SE	C6	Insert (Turning)
TPGH	○○○(○)(○)(○)M%	B26	Insert (Turning)
TPGH	○○○(○)M%-H	B27	Insert (Turning)
TPGH	○○○(○)(○)(○)%	B26	Insert (Turning)
TPGH	○○○(○)%-H	B27	Insert (Turning)
TPGT	○○○○○○CF	B25	Insert (Turning)
TPGT	○○○○○○M-CF	B25	Insert (Turning)
TPGT	○○○○○○MP-CF	B25	Insert (Turning)
TPMH	○○○(○)(○)(○)	C15	Insert (Turning)
TPMH	○○○(○)(○)(○)NE	C15	Insert (Turning)
TPMH	○○○(○)%-NE	C16	Insert (Turning)
TPMH	○○○(○)(○)(○)SE	C15	Insert (Turning)
TPMT	○○○(○)(○)(○)GP	B25	Insert (Turning)
TPMT	○○○(○)(○)(○)HQ	B25	Insert (Turning)
TPMT	○○○(○)(○)(○)PP	B25	Insert (Turning)
TPMT	○○○(○)(○)XP	B25	Insert (Turning)
TPMT	○○○XQ	B26	Insert (Turning)
TTX	32R○○○○(○)	J9	Insert (Threading)
TTX	32R○○○○(○)S	J9	Insert (Threading)
TWBR	○○○○○-○○○	F36	Twin Bars (Turning)
TWBTR	○○○○○-○○○	F37	Twin Bars (Turning)
TWFGL	○○○	G48	Twin Bars (Grooving)
TWFGTR	○○○	G49	Twin Bars (Grooving)

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number		Page	Description
V			
VBET	○○○○(○)M□-F	B28	Insert (Turning)
VBET	○○○○(○)M□-FSF	B28	Insert (Turning)
VBET	○○○○□-FSF	B28	Insert (Turning)
VBET	○○○(○)(○)M□-Y	B29	Insert (Turning)
VBGT	○○○○(○)M□-F	B29	Insert (Turning)
VBGT	○○○(○)(○)M□-Y	B29	Insert (Turning)
VBGT	○○○○□-F	B29	Insert (Turning)
VBGT	○○○(○)□-Y	B29	Insert (Turning)
VBGW	○○○MEF	C7	Insert (Turning) / Previous Part Number
VBGW	○○○S○○○○○MES	C7	Insert (Turning)
VBGW	○○○(○)S○○○○○MET	C7	Insert (Turning)
VBGW	○○○(○)S○○○○○SET	C7	Insert (Turning)
VBGW	○○○(○)T○○○○○ME	C7	Insert (Turning)
VBGW	○○○(○)T○○○○○SE	C7	Insert (Turning)
VBMT	○○○(○)	C16	Insert (Turning)
VBMT	○○○GP	B28	Insert (Turning)
VBMT	○○○HQ	B28	Insert (Turning)
VBMT	○○○(○)NE	C16	Insert (Turning)
VBMT	○○○(○)PP	B28	Insert (Turning)
VBMT	○○○(○)SE	C16	Insert (Turning)
VBMT	○○○(○)VF	B28	Insert (Turning)
VCGT	○○○AH	B30	Insert (Turning)
VCGT	○○○□-A3	B30	Insert (Turning)
VCGW	○○○○○(○)S○○○○○MET	C7	Insert (Turning)
VCGW	○○○○○S○○○○○SET	C7	Insert (Turning)
VCGW	○○○○○(○)T○○○○○ME	C7	Insert (Turning)
VCGW	○○○○○(○)T○○○○○SE	C7	Insert (Turning)
VCMT	○○○○○(○)	C16	Insert (Turning)
VCMT	○○○○○(○)HQ	B30	Insert (Turning)
VCMT	○○○○○(○)NE	C16	Insert (Turning)
VCMT	○○○○○(○)PP	B30	Insert (Turning)
VCMT	○○○○○(○)SE	C16	Insert (Turning)
VCMT	○○○○○(○)VF	B30	Insert (Turning)
VNBR	○○○○-○○(○)	F31	System Tip-bars (Boring)
VNBR	○○○○-○○(○)NB	C21,F31	System Tip-bars (Boring)
VNBR	○○○○(○)(○)-○○(○)S	F30	System Tip-bars (Boring)
VNBTR	○○○○-○○(○)	F31	System Tip-bars (Boring)
VNBXR	○○○○(○)-○○(○)S	F34	System Tip-bars (Boring)
VNFGR	○○○○-○○	G47	System Tip-bars (Grooving)
VNGR	○○○○-○○	G37	System Tip-bars (Grooving)
VNTR	○○○-○○	J15	System Tip-bars (Threading)
VPET	○○○○(○)(○)F□-USF	B32	Insert (Turning)
VPET	○○○○(○)(○)M□-F	B32	Insert (Turning)
VPET	○○○○(○)(○)M□-FSF	B32	Insert (Turning)
VPET	○○○○(○)MF□-J	B32	Insert (Turning)
VPET	○○○○(○)(○)MF□-U	B32	Insert (Turning)
VPET	○○○○(○)(○)MF□-USF	B32	Insert (Turning)
VPET	○○○○(○)(○)□-FSF	B32	Insert (Turning)
VPGT	○○○○CF	B31	Insert (Turning)
VPGT	○○○○(○)(○)CK	B31	Insert (Turning)
VPGT	○○○○M-CF	B31	Insert (Turning)
VPGT	○○○○(○)(○)M-CK	B31	Insert (Turning)
VPGT	○○○○MF-GF	B31	Insert (Turning)
VPGT	○○○○MFP-GF	B31	Insert (Turning)
VPGT	○○○○MP-CF	B31	Insert (Turning)
VPGT	○○○○(○)(○)MP-CK	B31	Insert (Turning)
W			
WBET	○○○○(○)(○)M□-F	B33	Insert (Turning)
WBGT	○○○○○M□-CF	B33	Insert (Turning)
WBGT	○○○○○MP□-CF	B33	Insert (Turning)
WBGT	○○○○(○)(○)M□-F	B33	Insert (Turning)
WBGT	○○○○(○)(○)□-F	B33	Insert (Turning)
WBGW	○○○○(○)(○)□	B34	Insert (Turning)
WBGW	○○○○(○)(○)S○○○○○□-SET	C8	Insert (Turning)
WBGW	○○○○(○)(○)T○○○○○□-SE	C8	Insert (Turning)
WBMT	○○○○(○)(○)L	C16,C17	Insert (Turning)
WBMT	○○○○(○)(○)L-NE	C16,C17	Insert (Turning)
WBMT	○○○○(○)L-SE	C16,C17	Insert (Turning)
WBMT	○○○○(○)(○)□-DP	B33	Insert (Turning)
WPGT	○○○○(○)M□-Y	B33	Insert (Turning)
WPGT	○○○(○)(○)□-Y	B33	Insert (Turning)
WPGW	○○○(○)(○)	B34	Insert (Turning)
WPMT	○○○○○	C17	Insert (Turning)
WPMT	○○○(○)GP	B34	Insert (Turning)
WPMT	○○○(○)(○)HQ	B34	Insert (Turning)
WPMT	○○○○○NE	C17	Insert (Turning)
WPMT	○○○○○SE	C17	Insert (Turning)

800.823.7284
Visit us online at KyoceraPrecisionTools.com

PROTOOL
SZERSZÁMIPARI Kft. BUDAPEST

1131 Bp. Reitter Ferenc u. 132.
www.protoolkft.hu/kyocera_sgs
T: 1/329-1717 @: sales@protool.hu