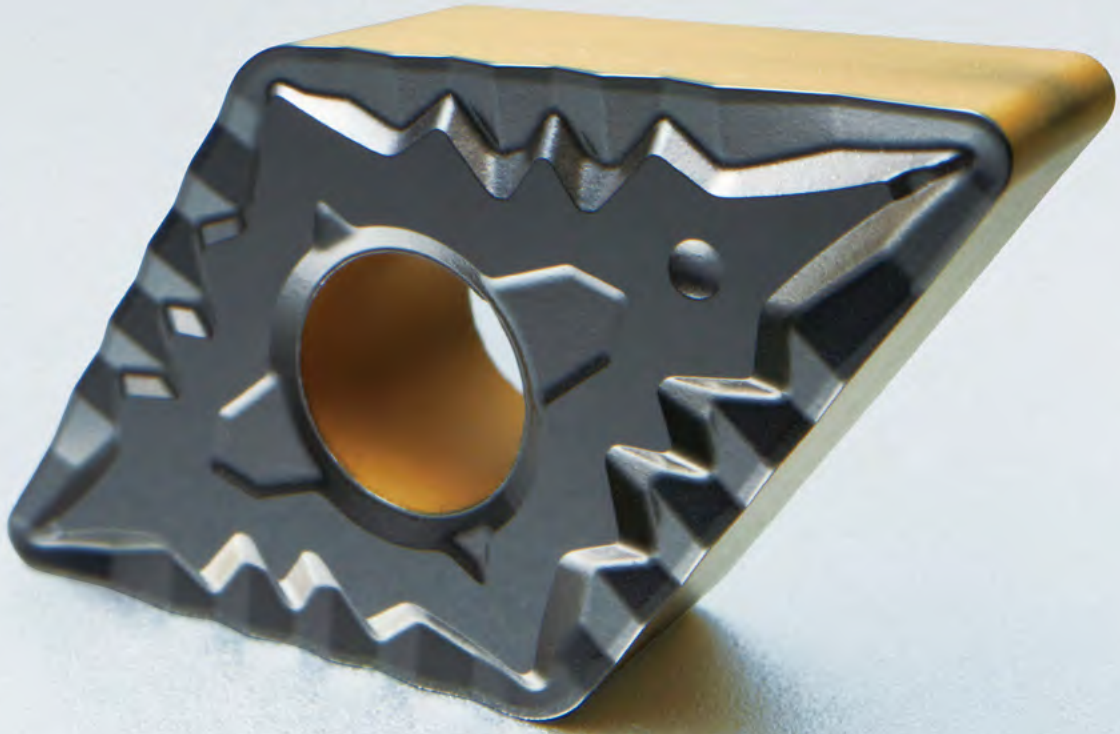
Cutting Tools



2025 TURNING 2026

TURNING / ROTATING / SOLID

KORLOY

2025▸2026
KORLOY TURNING TOOLS

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E4	Clamp	**E8**	Wrench
E5	Coolant bolt	**E8**	Stop ring
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G INDEX

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SAFETY GUIDE OF CARBIDE PRODUCTS

KORLOY Inc. is continuously trying to develop safer and higher quality products
Please be aware of the safety guidelines below prior to using KORLOY Inc. products

---

* It is generally accepted that the proper handling of cemented carbide tools requires awareness of safety as noted above. For more information, please contact us.
* KORLOY does not accept any responsibility for any accident caused by inappropriate use, abuse of tools, or changes to the products.

1 PL (Product Liability)

In accordance with the PL (Product Liability) law, we have attached a WARNING label on the case of KORLOY products.
There is no warning on the surface of the tools. Please read this safety guidelines before using carbide tools and provide safety education to all users.

2 Basic characteristics of CEMENTED CARBIDE tools

Cemented carbide tools are made of carbides, nitrides, carbonitrides, oxides of Tungsten (W), Titanium (Ti), Aluminium (Al), Silicon (Si), Tantalum (Ta), Boron (B) etc.
and metal component like Cobalt (Co), Nickel (Ni), Chromium (Cr), Molybdenum (Mo) as binder. Cemented carbides tools have high hardness and specific gravity.
Generally there's no smell but according to usage and treatment, appearance and color could be changed

3 Precaution for CEMENTED CARBIDE tools

1) Cemented carbides are extremely hard and brittle at the same time. Impact shock or excessive clamping power could cause fracture or breaking of the tool.
2) Cemented carbides have large specific gravity, thus they require special attention as a heavy material when you handle big sizes or large quantities.
3) Cemented carbides have different thermal expansion coefficient with steel and ferrous materials. Shrink fit or swell fit products may cause trouble if they are used at undesirable conditions like extremely high or low temperatures.
4) There are several cemented carbide products having sharp cutting edges. Be careful not to handle the tools with bare hands which may cause cuts or injury, especially when removing the tools from the case, do not touch the cutting edge and be careful not to drop it.
5) Storing carbide tools in a corrosive atmosphere may cause erosion which can reduce toughness.
6) Please refer to the catalog safety guidance prior to handling the tools.
7) Do not abuse tools under inappropriate conditions.

4 Precaution for machining (grinding, welding, EDM) of CEMENTED CARBIDE tools

1) Surface condition can affect the toughness of the tool, so it is recommended to use a diamond grinding wheel.
2) Grinding of cemented carbide creates mist and dust. It contains harmful compositions like Cobalt (Co), thus it is recommended to use a mask, mist collection, and other protective facilities. If the dust gets in your skin or eye, rinse immediately with continuously running water.
3) In case of grinding with coolant, coolant contains harmful metal components which cause environmental problems. Handle the coolant according to the manufacturer's recommendations.
4) Check for cracks after re-grinding carbide tool and reuse.
5) Marking with laser or electric pen may cause cracks on the carbide tool. The crack can shortened tool life.
6) EDM of carbide may cause residual cracks on the carbide tool, so if necessary, remove the crack with a grinding process.
7) Brazing of carbide tools at extremely high or low temperatures compare with the melting point of brazing materials may cause loosening or breakage.
8) Overheating an oil base coolant may cause a fire or flames, thus be prepared for fire prevention.

5 METALCUTTING SAFETY

	DANGEROUS FACTOR
Cutting tools	• Sharp cutting edge of cutting tools may cut your bare-hand
	• Inappropriate conditions or usage may cause fragmentation and expel parts of tools which may cause injury
	• Severe load on tool and premature wear of cutting edge may bring excessive cutting force on tool, causing fracture of the tool and may cause injury
	• Chips evacuated during cutting are hot and sharp and may cause burns and cuts
	• Touching the workpiece immediately after cutting may cause burns
	• Be aware of sparks, fire, or explosion of hot chips generated during the cutting operation
	• In case of high RPM machining, vibration and chattering may occur due to the improper balance of the machine
	• Touching a burr remaining on the workpiece with a bare-hand may cause a cut
	• Loose clamping of the workpiece may cause the fracture to tool and result in damage to the cutter body and possible injury
	• Tools are operated to right-Handed direction normally • Left-Handed direction operation can cause fracture of tool and body damage
Indexable tools	• Loose clamping of inserts and parts may result in ejection of the tool during cutting and may cause serious injury
	• Over loaded clamping of inserts by a lever (such as a pipe) may cause dangerous fracturing of parts and inserts
	• In case of high speed machining, parts and inserts can be forced out by centrifugal force
Rotating tools	• Since cutter has sharp cutting edges touching with a bare-hand may cause a cut
	• It is dangerous to use glove with rotating machine • Contact with body or clothes is dangerous with rotating parts
	• Vibration generated by balancing trouble may cause a fracture and ejection of the tool which may cause serious injury
	• In case of drilling, the uncut bottom core can fly out of the part with high speed and cause serious injury
	• The edges of small diameter drill are sharp and easy to break
Brazed tools	• Fragmentation and ejection of brazed carbide tip may cause injury
ETC	• There is a possibility that the carbide tip may break after multiple brazing operations
	• Abusing may cause fragmentation of tool and is very dangerous

	SAFETY COUNTERPLAN
Cutting tools	• Use gloves when pulling out the insert from the case or mounting it on the machine
	• Use glasses or safety cover for your safety • Use the tools within the recommended range • Please refer to catalog and safety guidelines first
	• Use glasses or safety cover for your safety • Change the tool as required before excessive wear or fracture
	• Use glasses or safety cover for your safety • Stop machining and put safety glove on and use a hook tool to remove chips
	• Use gloves or safety cover for your safety
	• Do not use at the place where having explosive materials • Prepare for fire extinguishments
	• Use glasses or safety cover for your safety • Check first if there's any chattering, vibration or strange noises prior to your main cutting operation
	• Do not touch the burr with bare-hand · Use gloves or safety cover for your safety
	• Clamp the workpiece tightly
	• Do not use left-hand direction without notice • Check the package of product to check the availability of left-hand operation
Indexable tools	• Check the clamping of inserts and parts prior to machining, and use original parts only
	• Do not use lever inappropriately
	• Use within recommended condition · Use glasses or safety cover for your safety
Rotating tools	• Use gloves or safety cover for your safety
	• Do not wear gloves when you work with rotating machine • Keep your body and clothes away from rotating machine
	• RPM should be controlled within recommended condition • Check the balance of rotating part periodically
	• Use gloves or safety cover for your safety
	• Concentrate on safety regulation in using tools. • Use glove or safety cover for your safety.
Brazed tools	• Check the brazed tip before using • Do not use at high temperature cutting condition
ETC	• Do not use brazing a tip that has been brazed several times
	• Stick to safety regulations and guidelines

INTRODUCTION OF HOMEPAGE

1) Get on the homepage through the internet

» **https://www.korloy.com/en** (KORLOY Homepage)

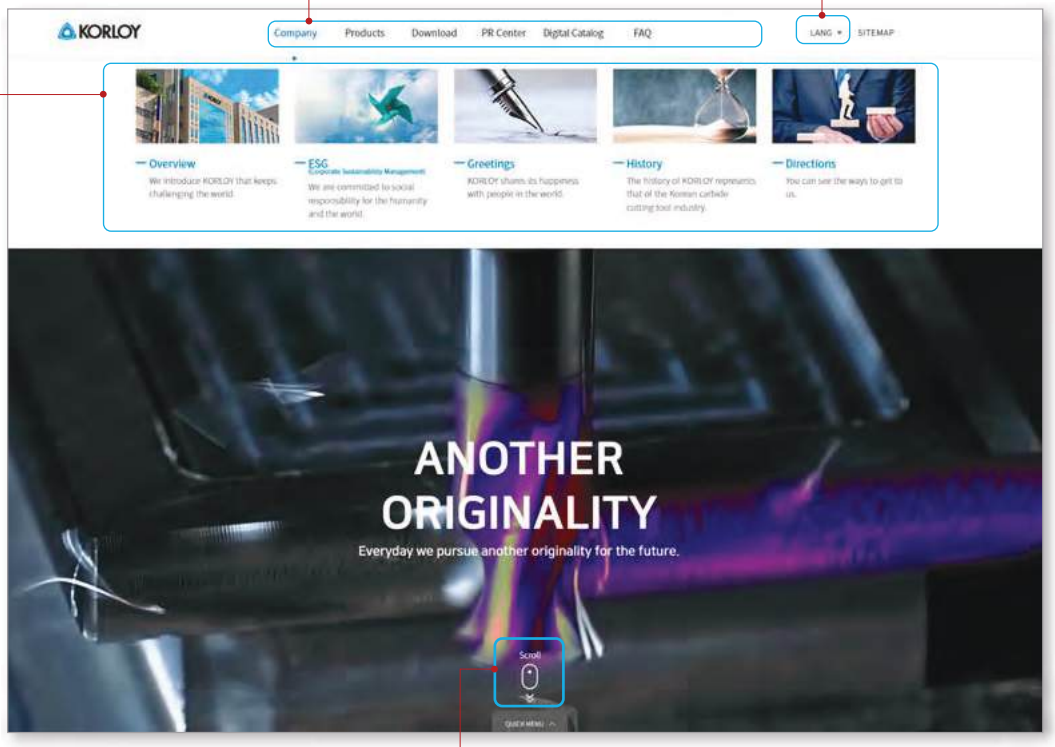
2) Choose a category and click that

Main screen guide

Browse all types of items by category
You can search desired items here

Selection by each language
Moving on to the site in each language

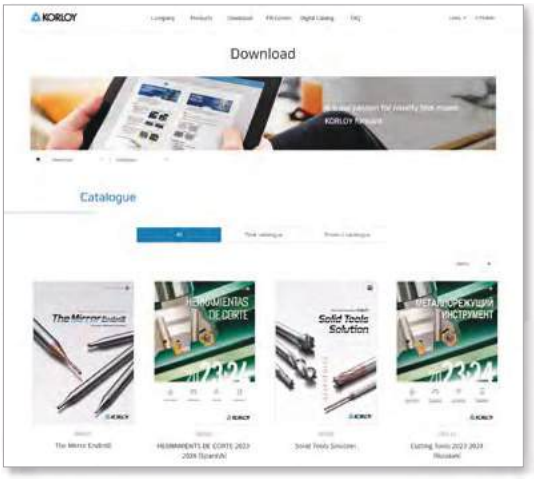
Detailed screen
Selecting detailed screen by each category



Quick menu
Checkable product information and KORLOY news quickly by scrolling the mouse

Search the necessary materials in the detailed search screen.

» Downloading technical materials



Downloading technical materials:
Downloading and searching by sections of various technical materials are available

» Shortcut to KOMS

» Shortcut to genuine product certification

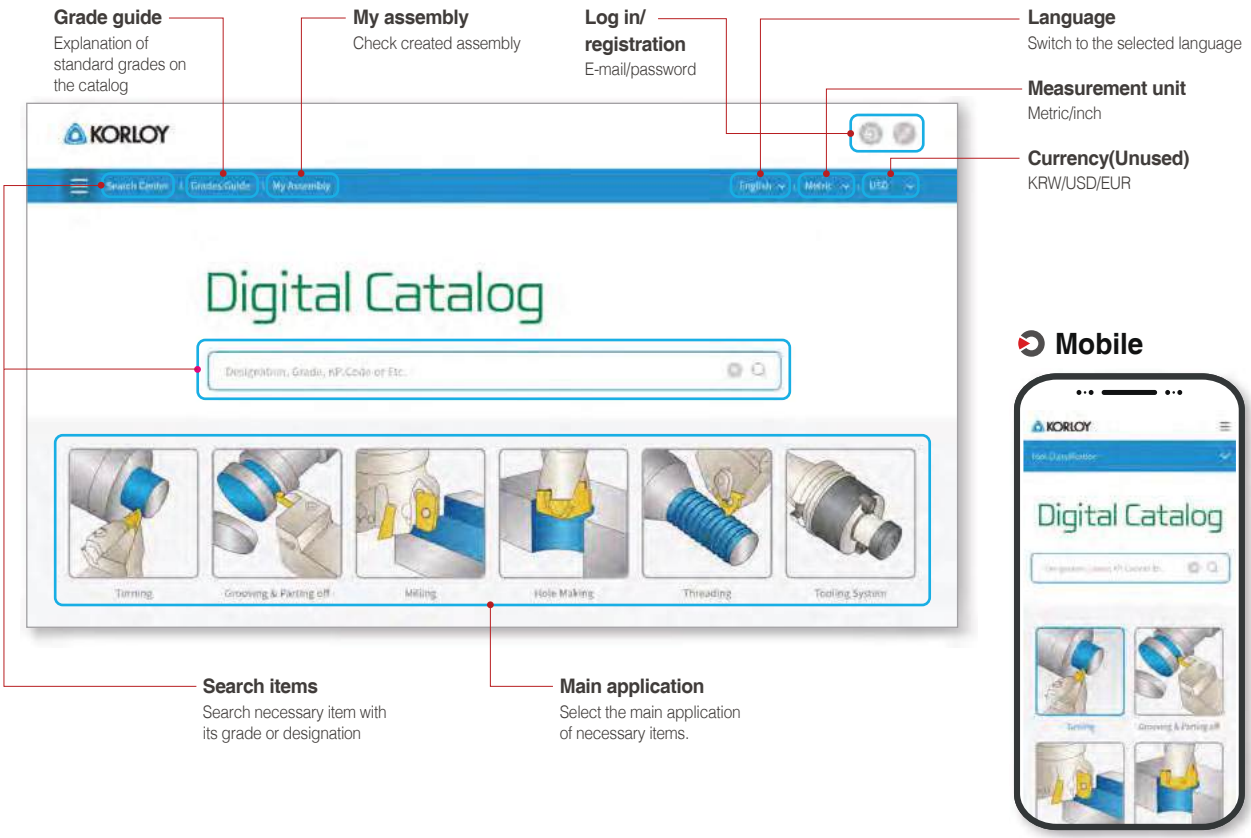
INTRODUCTION OF DIGITAL CATALOG

1) Connect to the digital catalog on PC or mobile

» https://catalog.korloy.com

2) Guideline for main screen

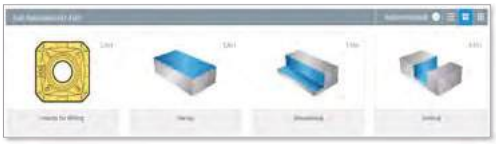
PC



Mobile

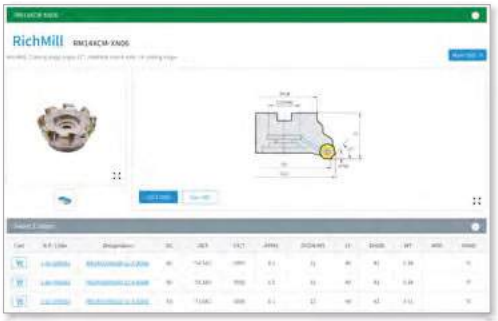
Details

» Sub application

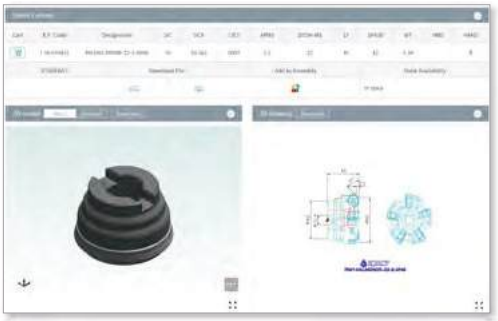


» Item group

» Item



» Item data, 2/3D modeling, etc.



INTRODUCTION OF ONLINE EXHIBITION

1) Get on the online exhibition hall on the PC or mobile.

» https://www.korloy.com/ko/prcenter/media_list.do#online

2) Main screen guide

① **Mini map** | Move the wanted hall

② **Information desk** | Introduction in Korean/English

③ **Side menu** | Searchable wanted sections

④ **Product names / Explanation** | In Korean/English

⑤ **Video** | Item promotion video

⑥ **Tech news** | Checking tech news

⑦ **Detailed information of product** | Checking the information of product and promotion video

⑧ **3D modeling** | Checking 3D modeling view

* **Connectable on mobile**

Detailed screen

» **New product hall**

» **Industry hall**

» **Tooling guide**

» **History hall**

» **Smart factory**

» **Poster**

TOOL KEEPER C/L(COIL/LOCKER) TYPE SYSTEM

The smart tool storage control system which is a 24-hour running unmanned system that can simultaneously store and manage tools and tool holders in real time. It is designed to improve the efficiency and security of tool management in operation sites and other industrial settings.

Efficient and transparent hybrid tool management control system + customer-customized S/W applied

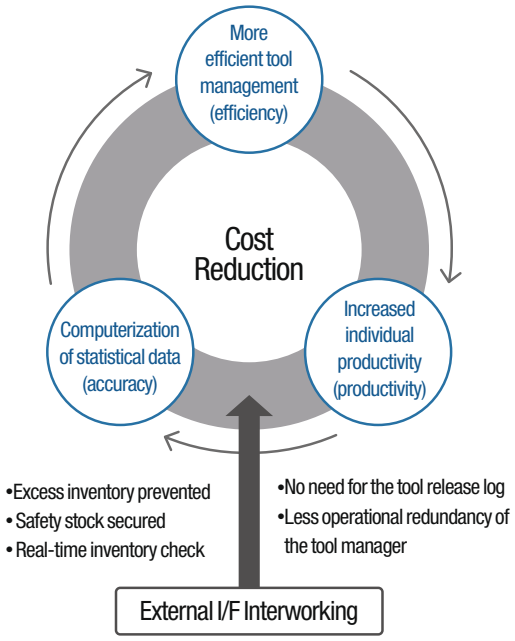
C/L Type

- Storage CAPA: Coils (81 types) + Lockers (21 types)
- Transparent Shipping (Packaging Units)
- Easy Tool Selection/Shipping with Touch Monitor

[Option] L Type

- Storage CAPA: 59 types
- Maximum Length: Up to 380mm
- Can Add Up to: 10 units

- Monthly performance data search (quantity / sum)
- Warehousing history and status search
- Computerization of statistical data (application history, etc.)



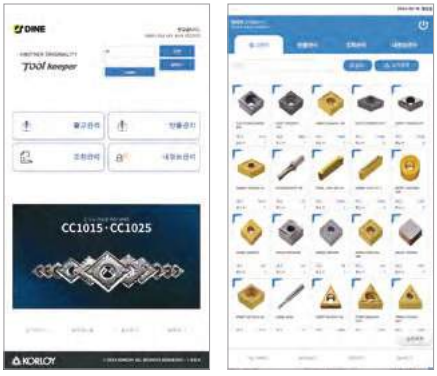
- Excess inventory prevented
- Safety stock secured
- Real-time inventory check

- No need for the tool release log
- Less operational redundancy of the tool manager

Software Configuration: Administrator Program + User Program

» Administrator Program

» User Program

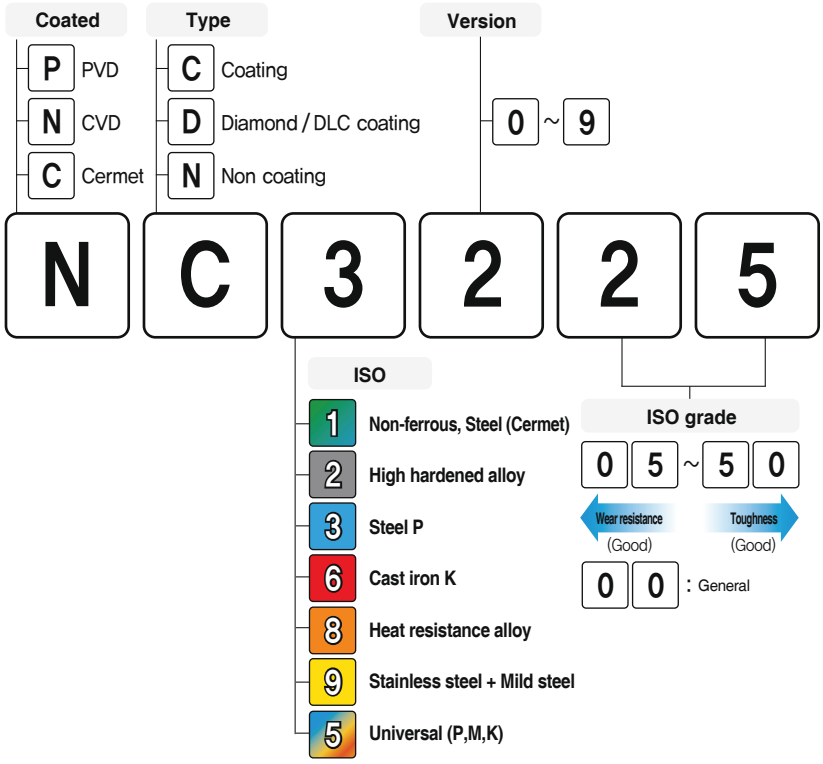


Key features

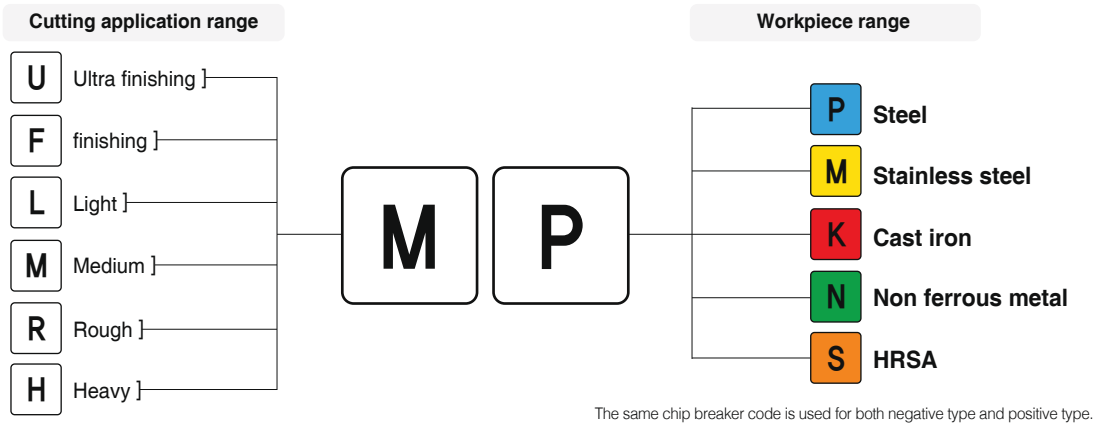
1. Safety Stock Alert Management (Automatic Email/SMS Notifications)
2. Multilingual Language Settings/Remote Diagnosis/SW
3. Automatic Updates Monthly Tool Usage(Average)/Expenditure/Inbound Quantity Management

INTRODUCTION OF ONLINE EXHIBITION

1 Grade name for coated carbide



2 Chip breaker



The same chip breaker code is used for both negative type and positive type.

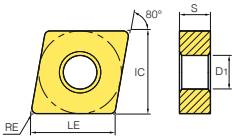
3 Terminology of tool formula

TERM	CODE	UNIT
Tool diameter	D	mm
Cutting speed	vc	m/min
Revolution per minute	n	min^{-1}
Feed per minute	vf	mm/min
Feed per revolution	fn	mm/rev
Feed per tooth	fz	mm/t
Tooth	z	-
Axial depth of cut	ap	mm
Radial depth of cut	ae	mm
Peak feed	pf	mm

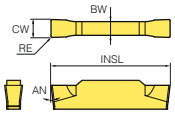
TERM	CODE	UNIT
Horse power requirement	Pc	kW
Specific cutting resistance	kc	MPa
Torque	Mc	N.m
Thrust	Tc	N
Cycle time	tc	min
Tool life	T	min
Flank wear	V_B	mm
Crater wear	Kt	mm
Nose radius	r	mm

ISO13399 GLOSSARY

Insert



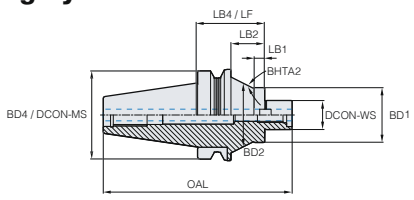
ex 1



ex 2 (Grooving)

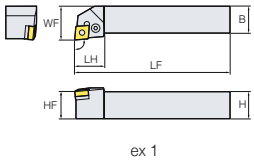
ISO13399 Property Symbols	Property Name
AN	Clearance Angle Major
APMX	Depth of Cut Maximum
BW	Insert Body Width
CBMD	Chip Breaker Manufacturers Designation
CDX	Cutting Depth Maximum
CEDC	Cutting Edge Count
CUTDIA	Work Piece Parting Diameter Maximum
CW	Cutting Width
D1	Fixing Hole Diameter
DCON-MS	Connection Diameter - Machine Side
DMIN	Minimum Bore Diameter
HAND	Cutting Direction, Hand
IC	Inscribed Circle Diameter
INSL	Insert length
KRINS	Cutting Edge Angle Major
LE	Cutting Edge Effective length
LF	Functional length
PDX	Profile Distance ex
PDY	Profile Distance ey
PSIRL	Cutting Edge Angle Major Left Handed
PSIRR	Cutting Edge Angle Major Right Handed
RE	Corner Radius
S	Insert Thickness
SSC	Insert Seat Size Code
WF	Functional Width
WT	Weight of Item

Tooling System

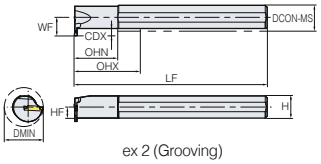


ISO13399 Property Symbols	Property Name
ADJ	Adjust Screw
BD	Body Diameter
CCKZ	Cutter Connecter Key Size
CRKS	Connection Retention Knob Thread Size
DC	Cutting Diameter
DCON-WS	Connection Diameter Workpiece Side
DCX	Cutting Diameter Maximum
H	Shank Height
HF	Functional Height
LB	Body Length
LF	Functional Length
MBCB	Mount Bolt, Clamp Bolt
SSL	Set Screw Length
SSZ	Set Screw Size
WF	Functional Width

Holder



ex 1



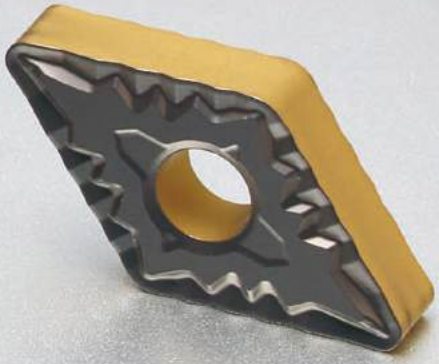
ex 2 (Grooving)

ISO13399 Property Symbols	Property Name
B	Shank Width
BD	Body Diameter
CDX	Cutting Depth Maximum
CUTDIA	Work Piece Parting Diameter Maximum
DAXIN	Axial Groove InSide Diameter Minimum
DAXX	Axial Groove OutSide Diameter Minimum
DC	Cutting Diameter
DCON-MS	Connection Diameter - Machine Side
DCON-WS	Connection Diameter - Work Side
DMIN	Minimum Bore Diameter
H	Shank Height
HAND	Cutting Direction, Hand
HBH	Head Bottom Offset Height
HF	Functional Height
HTPRM	Prism Height
KAPR	Tool Cutting Edge Angle
LB	Body Length
LF	Functional Length
LH	Head Length
LPR	Protruding Length
LS	Shank Length
LSCWS	Clamping Length WorkPiece Side
LU	Usable Length (Max. Recommended)
NOF	Flute Count
OAH	Overall Height
OAL	Overall Length
OAW	Overall Width
OHN	Overhang - Minimum
ULDR	Usable Length Diameter Ratio
WB	Body Width
WF	Functional Width
WTHPRM	Prism Width

A PART

GRADES

KORLOY's new grades are designed with optimal substrate for each application and are PVD coated for high temperature, high hardness and oxidation resistance, or CVD coated for high temperature and wear resistance. Additionally, the improved post-coating treatment provides superior surface finishes to ensure the highest levels of quality and productivity



Technical information for GRADES

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Turning Chip Breakers

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A53 Surface Insert

KORLOY Grade Index

Grade index

Workpiece	Coated	Grade	ISO						Turning	Multi functional tools	Thread (Turning)
			P	M	K	S	N	H			
			Steel	Stainless steel	Cast iron	HRSA	Non-ferrous	Hardened			
Coated carbide	CVD	NC3205	P05-P15						•		
		NC3215	P10-P20						•		
		NC3225	P20-P25						•	•	
		NC3120	P30-P40	M30-M40					•	•	
		NC3030	P20-P25						•	•	
		NC3235	P25-P35	M25-M35					•		
		NC5320	P15-P25		K15-K25				•		
		NC5330	P30-P35	M20-M30	K30-K35	S15-S25			•	•	
		NC515H	P10-P20						•		
		NC520H	P15-P20						•		
		NC525H	P20-P25						•		
		NC6310	P05-P10		K01-K10				•		
		NC6315			K10-K20				•	•	
		NC9115	P15-P20	M10-M20					•		
		NC9125		M20-M30		S15-S25			•		
		NC9135		M30-M40		S25-S35			•		
	PVD	PC3035	P30-P40							•	
		PC5300	P30-P40	M20-M30	K20-K25	S15-S25			•	•	•
		PC5400	P35-P45	M30-M40	K30-K35	S25-S35			•		
		PC8105		M05-M15		S01-S10		H01-H05	•		
		PC8110		M10-M20	K10-K20	S05-S15		H05-H10	•	•	
		PC8115		M15-M25		S10-S20		H10-H15	•		
		PC9030		M25-M35					•	•	
		PC9035		M25-M35		S20-S30			•		
		PC3030T	P25-P35	M25-M35							•
		PC9070T		M25-M35							•
	Non-coated	ST30A	P25-P35							•	
		H01			K01-K05	S01-S10	N10-N20	H05-H10	•	•	
		H05			K05-K15	S05-S15	N15-N25		•	•	
		G10			K15-K25		N20-N30		•	•	
Cermet	PVD	CC1015	P10-P20		K05-K15				•		
		CC1025	P15-P25		K10-K20				•		
	Non-coated	CN1500	P10-P20		K05-K15				•		
		CN2500	P15-P25		K10-K20				•	•	
cBN	PVD	DNC100						H01-H10	•		
		DNC250						H10-H20	•		
		DNC300						H15-H20	•		
		DNC350						H20-H30	•		
	Non-coated	DBNX20						H15-H20	•		
		DBN250						H01-H10	•		
		DBN350						H20-H30	•		
		DB1000						H01-H10	•		
		DB2000						H10-H15	•		
		DBN700A			K01-K20	S01-S10			•		
Dia coated	CVD	ND3000					N01-N05		•		
DLC coated	PVD	PD1005					N05-N10		•		
		PD1010					N10-N15		•		
PCD	Non-coated	DP90					N01-N20		•		
		DP150					N05-N25		•		
		DP200					N10-N30		•		

Grade System

Cutting tool

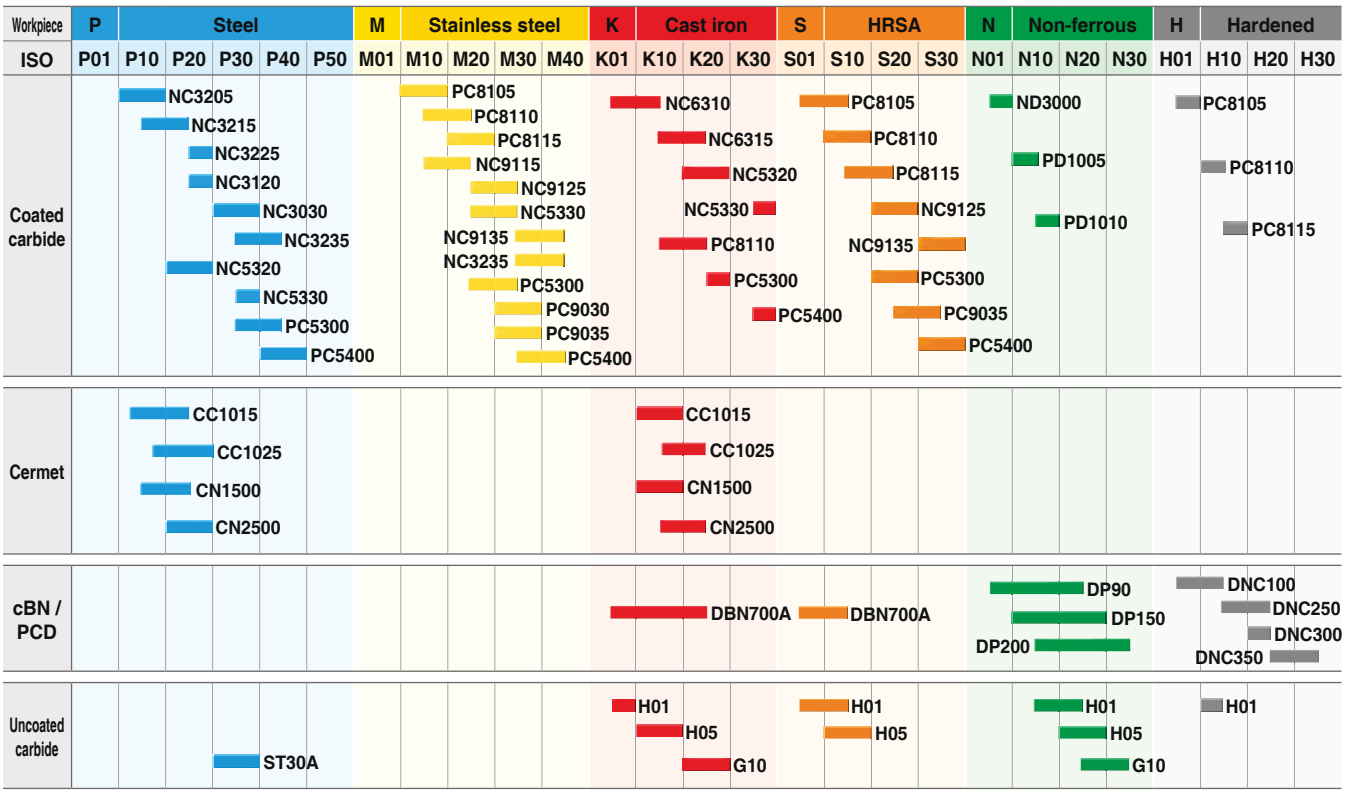
Uncoated carbide	P	Steel	ST30A			
	K	Cast iron	H01	H05	G10	
	S	HRSA	H01	H05		
	N	Aluminum alloy/Copper alloy	H01	H05	G10	
	H	Hardened	H01			
Cermet	P	Steel	CN1500	CN2500		
	K	Cast iron	CN1500	CN2500		
Cermet coated	P	Steel	CC1015	CC1025		
	K	Cast iron	CC1015	CC1025		
Dia coated	N	Non-ferrous	ND3000			
DLC coated	N	Non-ferrous	PD1005	PD1010		
PCD	N	Non-ferrous	DP90	DP150	DP200	
cBN	K	Cast iron	DBN700A			
	S	HRSA	DBN700A			
	H	Hardened	DBN250	DB1000	DB2000	DBNX20	DBN350
cBN coated	H	Hardened	DNC100	DNC250	DNC300	DNC350

Applications

Turning coated	P	Steel	NC3205	NC3215	NC3225	NC3235	NC3120	NC3030	NC6310	NC9115	NC5320	NC5330	PC5300	PC5400
		Steel (Heavy)	NC515H	NC520H	NC525H									
	M	Stainless steel	NC9115	NC9125	NC9135	PC9030	PC9035	PC8105	PC8110	PC8115	NC3030	NC3235	NC5330	PC5300	PC5400
	K	Cast iron	NC6310	NC6315	NC5320	NC5330	PC8110	PC5300	PC5400					
	S	HRSA	PC8105	PC8110	PC8115	PC9035	NC9125	NC9135	NC5330	PC5300	PC5400			
	N	Non-ferrous	ND3000	PD1005	PD1010									
	H	Hardened	PC8105	PC8110	PC8115									
Multi-functional	P	Steel	PC3035	PC5300	NC3225	NC3120	NC3030	NC5330						
	M	Stainless steel	PC5300	PC9030	NC3030	NC5330	PC8110							
	K	Cast iron	PC5300	NC5330	NC6315	PC8110								
	S	HRSA	PC5300	PC9030	NC5330	PC8110								
	H	Hardened	PC8110											
Thread coated	P	Steel	PC3030T	PC5300										
	M	Stainless steel	PC9070T	PC3030T	PC5300									
	K	Cast iron	PC5300											
	N	Non-ferrous	PC5300											

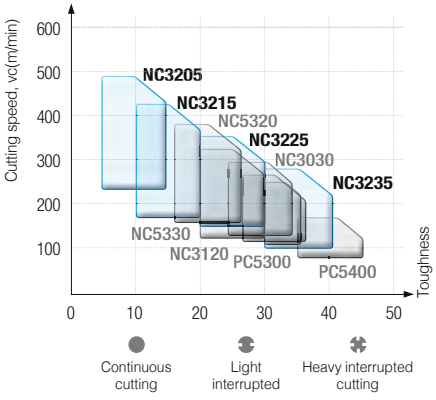
Turning Grade selections

Selection system

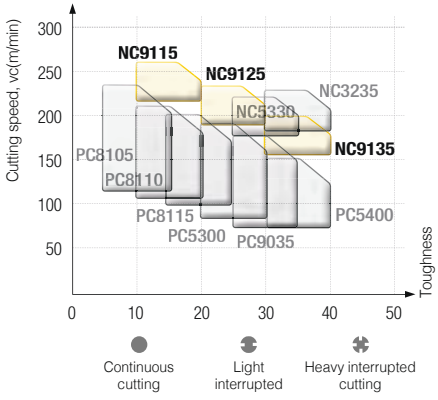


Application range of turning grades

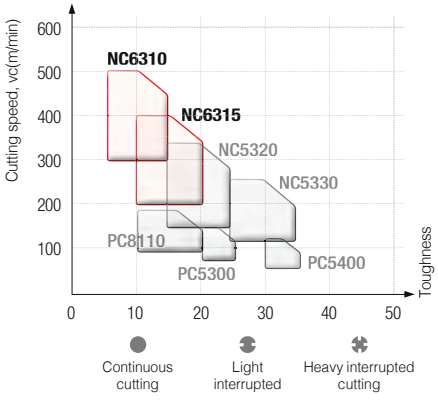
P Steel



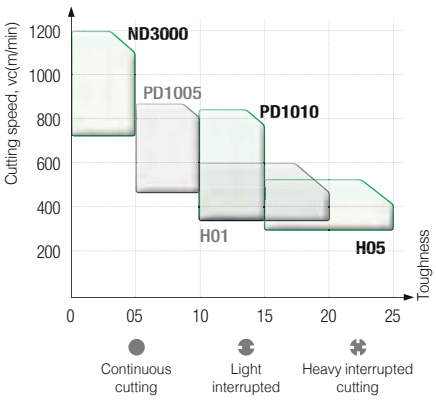
M Stainless steel



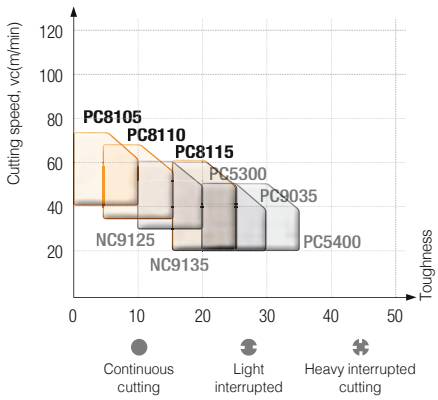
K Cast iron



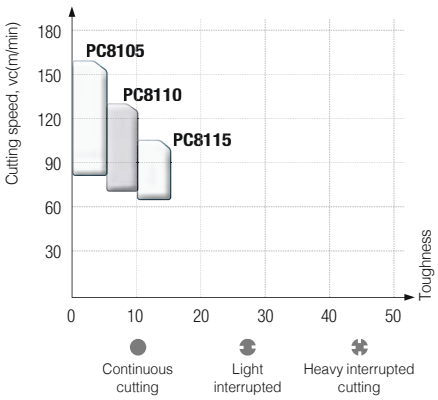
N Non-ferrous metal



S Heat resistant alloy



H Hardened steel



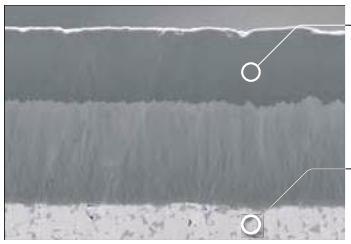
CVD Coated Grades

CVD insert series for Steel Turning

NC3205 / NC3215 / NC3225 / NC3235

- Optimal grade for high productivity on Steel cutting
- Exclusive substrate application per each grade
- Enhanced lubrication and chipping resistance

Features

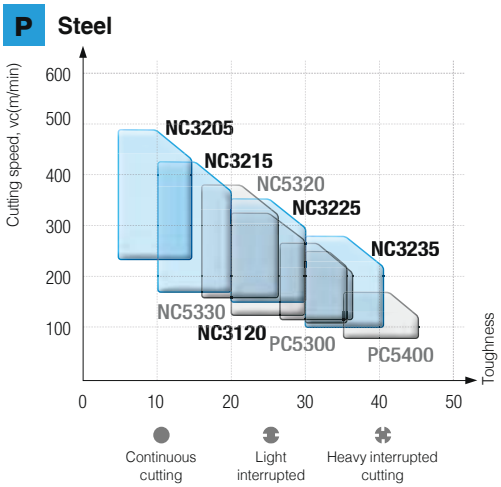


New CVD coating with good heat resistance and wear resistance
- Ensured stable tool life due to increased wear resistance, chipping resistance and heat resistance

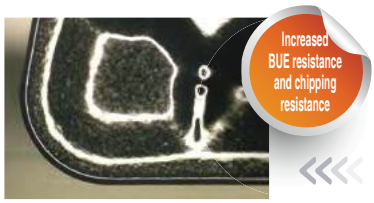
High toughness and heat resistance substrate
- Exclusive substrate per each grade increasing tool life

[NC3200 Series]

Application range

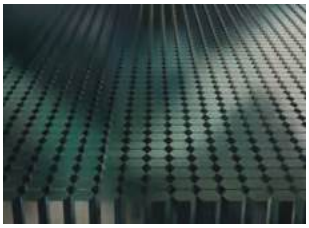
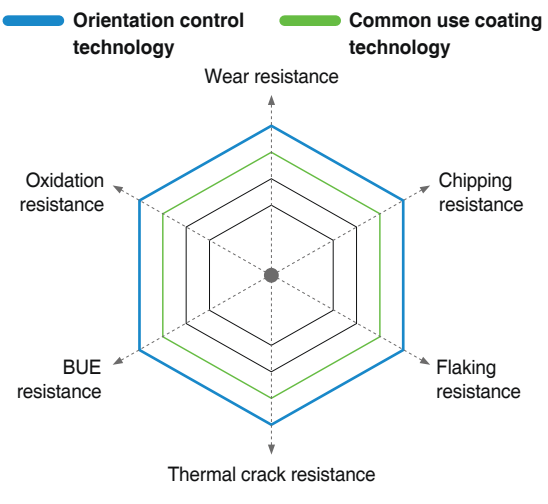


•Highly lubricative coating with fine surface finish application



[NC3205, NC3235]

[Existing grade]

Orientation control technology	Existing and common use coating technology	Comparison of coating technology
		
• Increased crystal orientation, tool life and stability of wear due to the New CVD coating technology	• Randomly generated crystal orientation • Limitation of wear resistance and cutting stability	

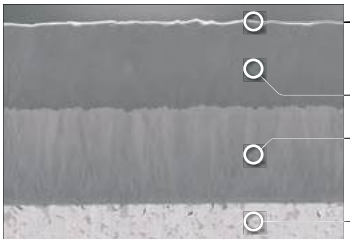
CVD Coated Grades

CVD coated grade for high efficiency and quality turning of cast iron

NC6310 / NC6315

- CVD coating with improved wear resistance and chipping resistance.
- Solutions for the most common issues in cast iron machining: Preventing excessive wear on rake and flank surfaces of insert, chipping and burr

Features



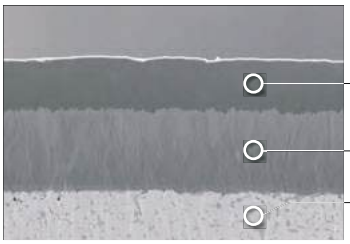
Titanium layer with excellent lubrication identifying wear

Alumina layer specialized for heat resistance

Titanium layer with improved fracture resistance

Functional substrate optimized for high speed cast iron machining

[NC6310]



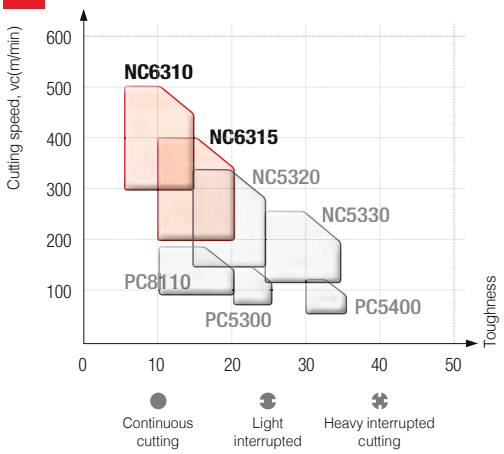
Alumina layer with better surface finish and improved wear resistance and welding resistance

Titanium layer with improved fracture resistance

Functional substrate optimized for high feed and heavy interrupted cast iron machining

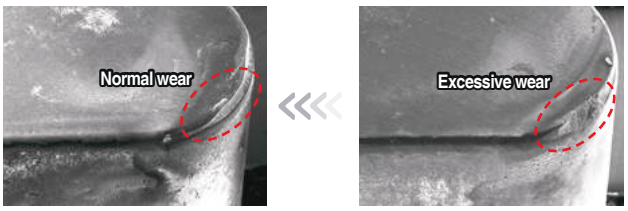
[NC6315]

Application range

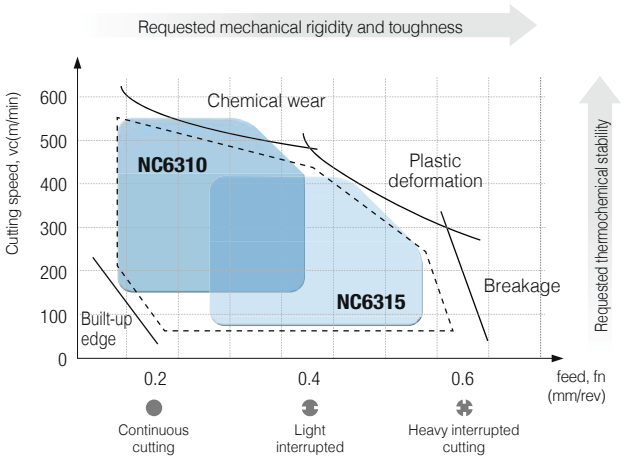


Features of NC6310

Normal wear on rake surface and nose radius

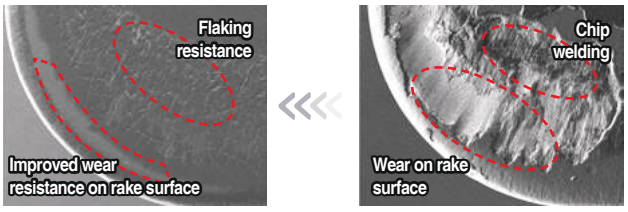


[NC6310] [Existing grade (K10)]



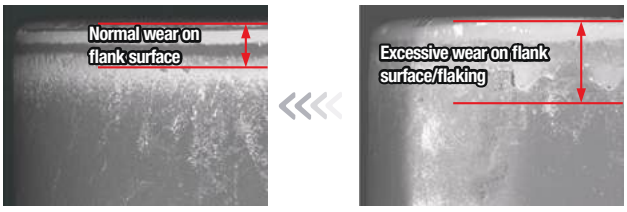
Features of NC6315

Improved flaking resistance and wear resistance on rake surface



[NC6315] [Existing grade (K15)]

Normal wear on flank surfacenose radius



[NC6315] [Existing grade (K15)]

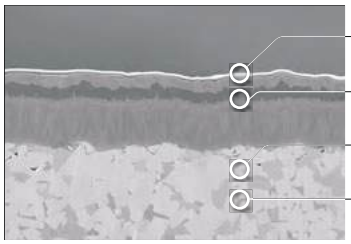
CVD Coated Grades

CVD insert series for Stainless Turning

NC9115 / NC9125 / NC9135

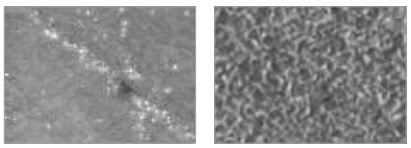
- Solutions for Most Common Issues in Stainless Steel Machining → Prevents built-up edge, notch wear, plastic deformation, and burr creation
- Machining of various workpieces such as austenitic, martensitic and ferritic stainless steel
- Stable tool life at high speeds, feeds, and depths of cut

Features



[NC9100 Series]

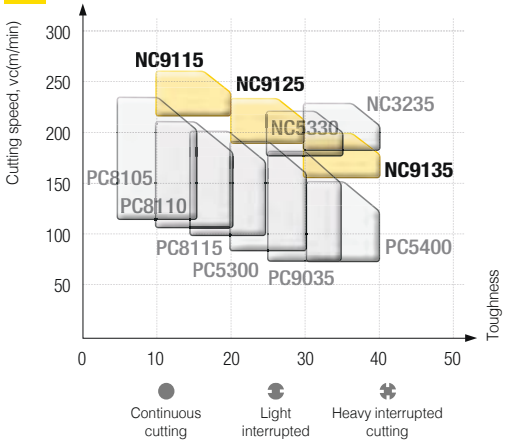
Lubricative coating layer to prevent built-up edge



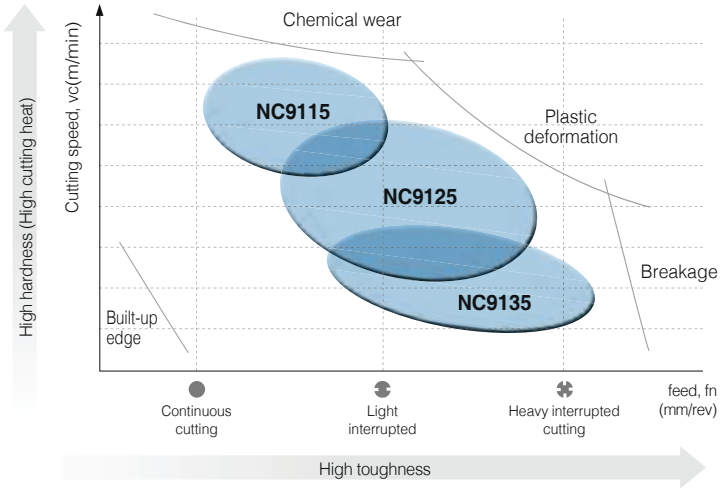
[NC9100 Series] [Existing coating]

Application range

M Stainless steel



Grades line-up



Recommended grade and chip breaker per stainless steel type

[Austenitic stainless steel]

Grade	Cutting speed (m/min)				
	50	100	150	200	250
NC9115			160	220	
NC9125			150	200	
NC9135		100	150		

[Duplex stainless steel]

Grade	Cutting speed (m/min)				
	50	100	150	200	250
NC9115			120	160	
NC9125			100	140	
NC9135		60	100		

[Ferritic / Martensitic stainless steel]

Grade	Cutting speed (m/min)				
	50	100	150	200	250
NC9115			150		250
NC9125		120			220
NC9135		100	150		

[Precipitation hardened (PH) stainless steel]

Grade	Cutting speed (m/min)				
	50	100	150	200	250
NC9115	50	110			
NC9125	40	110			
NC9135	30	100			

Selection system of CVD coated grade

ISO		Machining types	Recommended grade	Recommended cutting speed (m/min)
P	Steel	Continuous cutting	NC3205	300 (210~390)
			NC3215	260 (180~340)
		General cutting	NC5320	240 (170~310)
			NC3225	230 (160~300)
			NC3120	230 (160~300)
		Interrupted cutting	NC3030	190 (130~250)
			NC3235	180 (125~235)
			NC5330	175 (120~230)
M	Stainless steel	Continuous cutting	NC9115	180 (160~200)
		General cutting	NC9125	175 (155~195)
			NC5330	175 (155~195)
		Interrupted cutting	NC3235	170 (155~185)
			NC9135	160 (145~175)
K	Cast iron	Continuous cutting	NC6310	340 (255~425)
		General cutting	NC6315	280 (210~350)
			NC5320	220 (165~275)
		Interrupted cutting	NC5330	150 (110~190)
S	HRSA	Continuous cutting	NC9125	40 (30~50)
		Interrupted cutting	NC9135	35 (25~45)

ISO		Application range
P	P01	NC6310
	P10	NC3205
	P15	NC3215
	P20	NC5320 NC9115
	P25	NC3225 NC3120
	P30	NC3030
	P35	NC3235 NC5330
	P40	
M	M10	NC9115
	M20	NC9125 NC5330
	M30	NC3030
	M40	NC9135 NC3235
K	K01	NC6310
	K10	
	K20	NC6315 NC5320
	K30	NC5330
S	S20	NC5330 NC9125
	S30	NC9135

The features of CVD coated

CVD Coated grades	ISO	Features
NC3205	P05 ~ P15	• For high hardness general steel, forged steel and for high speed, continuous and medium finishing • Applying high plastic deformation resistance materials and high heat resistance and wear resistance Alumina (Al_2O_3) increase surface finish and lubrication • MT-TiCN + Al_2O_3 + TiN
NC3215	P10 ~ P20	• Continuous machining of general steel and forged steel at high speed • Substrate with excellent thermal crack/plastic deformation resistance, coating with improved chipping resistance for continuous machining • MT-TiCN + Al_2O_3 + TiN
NC3225	P20 ~ P25	• Universal grade for general steel and forged steel • 1st recommended grade for general machining with the use of high toughness substrate and coating layer with improved welding/ chipping resistance • MT-TiCN + Al_2O_3 + TiN
NC3235	P30 ~ P40 M30 ~ M40	• For general steel, forged steel, and stainless steel and for medium low speed cutting, high interruption cutting, roughing • Applying high chipping resistance and fracture resistance materials and heat resistance, wear resistance alumina(Al_2O_3) coating increase surface finish and lubrication • MT-TiCN + Al_2O_3 + TiN
NC3120	P20 ~ P25	• Medium to roughing for steel • Combining excellent fracture resistance substrate with chipping resistance and heat resistance Al_2O_3 increased stability • MT-TiCN + TiC + Al_2O_3
NC3030	P25 ~ P35 M25 ~ M35	• Medium to low speed machining of steel and interrupted roughing • Harmony between substrate with excellent wear/fracture resistance and Al_2O_3 film with excellent thermal/chipping resistance • Increased stability in wide ranges of cutting conditions • MT-TiCN + TiC + Al_2O_3 + TiN
NC5320	P15 ~ P20 K15 ~ K25	• For medium hardness general steel, bearing steel, cast iron, medium to high speed cutting, medium interruption cutting, general cutting and medium cutting • Applying fracture resistance, chipping resistance and wear resistance Alumina(Al_2O_3) coating and materials increase tool life in hub bearing cutting • MT-TiCN + Al_2O_3 + TiN
NC5330	P30 ~ P35 M20 ~ M30 K30 ~ K35 S15 ~ S25	• Stainless Steel - General cutting for mild steel & forging steel • Excellent cutting performance in hard to cut materials which are vulnerable to built up edge, due to the high tough substrate with improved fracture resistance and the coated layers • MT-TiCN + Al_2O_3 + TiN
NC6310	K01 ~ K10 P05 ~ P10	• High speed and continuous cutting of grey cast iron • Increased tool life due to coating layer with high wear resistance • MT-TiCN + Al_2O_3 + TiN
NC6315	K10 ~ K20	• Universal grade for ductile and gray cast Iron • Excellent performance thanks to the alumina (Al_2O_3) coating's improved grip on the tough substrate • MT-TiCN + Al_2O_3
NC9115	M10 ~ M20 P15 ~ P20	• For ferrite, martensitic stainless steel, high speed cutting, continuous cutting and medium finishing • Applying high plastic deformation resistance materials and high heat resistance Alumina(Al_2O_3) increases surface finish and lubrication •MT-TiCN + Al_2O_3 + TiN
NC9125	M20 ~ M30 S15 ~ S25	• For stainless steel and heat resistance alloy cutting, heat resisting alloy cutting, medium high speed cutting, continuous cutting and medium roughing • Applying high chipping resistance materials and high heat resistance Alumina(Al_2O_3) increases surface finish and lubrication • MT-TiCN + Al_2O_3 + TiN
NC9135	M30 ~ M40 S25 ~ S35	• For stainless steel and heat resistance alloy cutting, heat resisting alloy cutting, medium low speed cutting, interruption cutting and roughing • Applying high fracture resistance materials and high heat resistance Alumina(Al_2O_3) increases surface finish and lubrication • MT-TiCN + Al_2O_3 + TiN

PVD Coated Grades

Turning grade for heat resistant alloy and stainless steel

PC8105

- Micro grain carbide minimizes chipping of cutting edge due to enhanced edge strength
- Latest PVD coating technology with high hardness and high temperature oxidation resistance
- Excellent tool life when finishing heat resistant alloys and stainless steels at high speeds

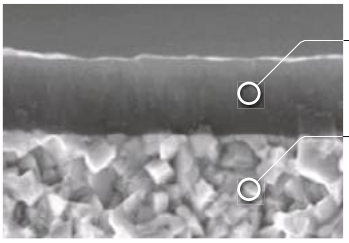
PC8110

- Substrate with superior wear resistance and plastic deformation resistance at high temperature
- PVD coating technology with high hardness and oxidation resistance at high temperature
- Long tool life when machining heat resistant alloy and stainless steel at high speed

PC8115

- Ultra fine matrix technology increases wear resistance and chipping resistance
- PVD coating technology with high hardness and oxidation resistance at high temperature
- Strong cutting edge and excellent chipping resistance guarantees stable machining
- Longer tool life when machining heat resistant alloy and stainless steel at medium to low speed and medium cutting to roughing

Features



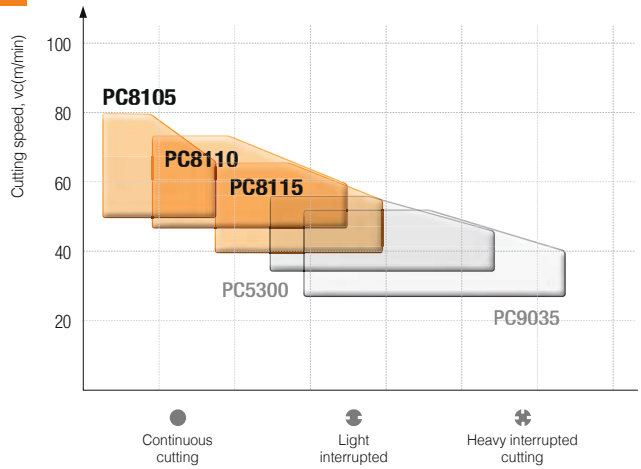
It prevents wear at a high temperature to apply excellent surface roughness and coating with oxidation resistance and high hardness

It improves wear resistance to equalize submicron matrix, secure stability between corners and improve chipping and wear resistance

[PC8100 series]

Application range

S Heat resistant alloy



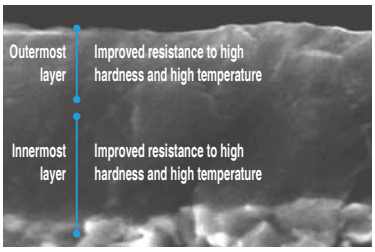
PVD Coated Grades

Universal PVD grade

PC5300

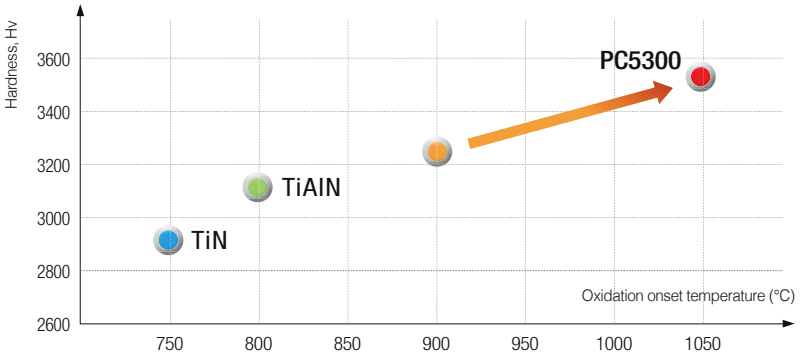
- Advanced PVD coating with high hardness and high temperature stability
- High tough substrate and coating films produce excellent surface finish
- Universal tooling capability covering P, M, K, S with this single grade, PC5300
- Stable machining resulting from excellent edge hardness and chipping resistance

Features



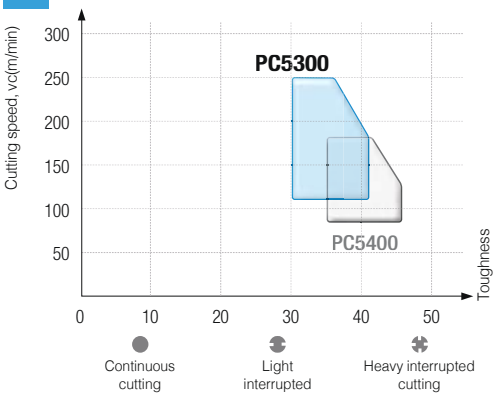
- Latest PVD coating technology developed by KORLOY
- New concept of coating equipped with high temperature oxidation resistance and high hardness

High temp properties

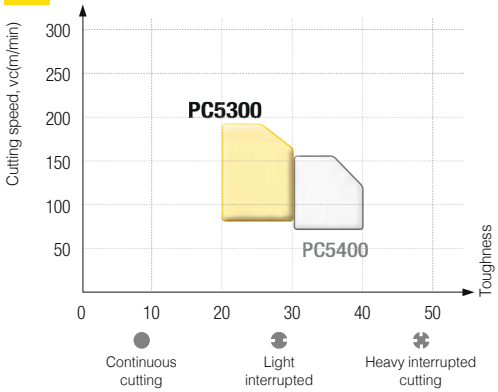


Application range

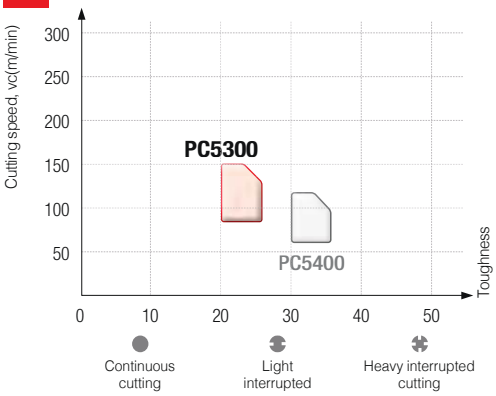
P Steel



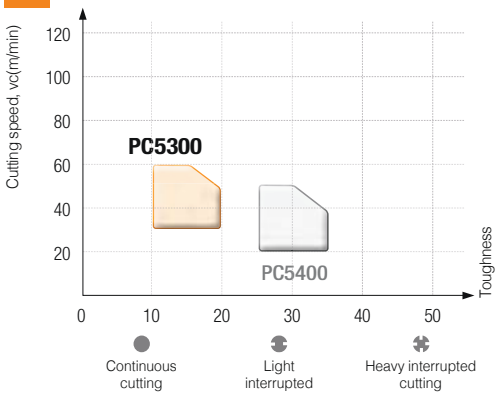
M Stainless steel



K Cast iron



S Heat resistant alloy



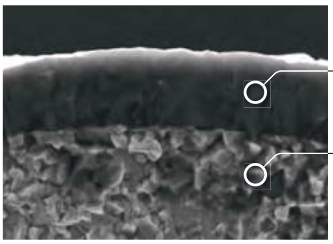
PVD Coated Grades

PVD grade for Stainless steel turning

PC9030

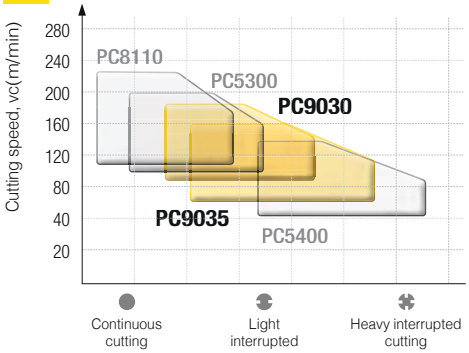
- The optimal PVD grade for stainless steel turning and continuous cutting
- Applied high welding resistance coating layer technology
- Applied high wear resistance materials

Features

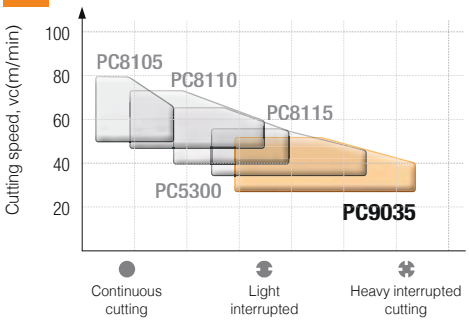


Application range

M Stainless steel



S Heat resistant alloy

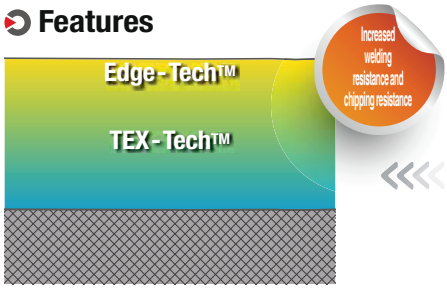


Stainless steel Turning insert

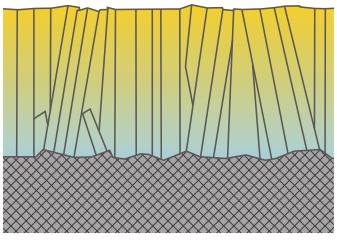
PC9035

- Optimally designed PVD grade for medium to finish cutting and interrupted cutting of Stainless steel turning
- High stability of cutting due to applying high toughness PVD coating layer technology with chipping resistance and fracture resistance
- Good chipping resistance and welding resistance in the beginning of cutting through the Edge-Tech™ technology

Features



[PC9035]



[Existing grade]

Selection system of PVD coated grade

ISO		Machining types	Recommended grade	Recommended cutting speed (m/min)
P	Steel	Continuous cutting	PC5300	140 (105~175)
		Interrupted cutting	PC5400	125 (90~160)
M	Stainless steel	Continuous cutting	PC8105	175 (130~220)
			PC8110	160 (120~200)
			PC8115	145 (110~180)
		Interrupted cutting	PC5300	130 (95~165)
			PC9030	120 (90~150)
			PC9035	120 (90~150)
			PC5400	110 (80~140)
K	Cast iron	Continuous cutting	PC8110	135 (100~170)
		Interrupted cutting	PC5300	105 (80~130)
			PC5400	85 (65~105)
S	HRSA	Continuous cutting	PC8105	55 (40~70)
			PC8110	50 (35~65)
			PC8115	45 (35~55)
		Interrupted cutting	PC5300	40 (30~50)
			PC9035	38 (25~50)
			PC5400	35 (25~45)
H	Hardened	Interrupted cutting	PC8105	110 (80~140)
			PC8110	100 (75~125)
			PC8115	90 (65~115)

ISO		Application range
P	P30	PC5300
	P40	PC5400
M	M01	
	M10	PC8105
	M20	PC8110
	M30	PC8115
	M40	PC5300
K	K10	PC9030
	K15	PC9035
	K20	PC5400
	K25	PC8110
	K30	PC5300
	K35	PC5400
S	S01	
	S10	PC8105
	S20	PC8110
	S30	PC8115
H	H01	PC5300
	H05	PC9035
	H10	PC5400
	H15	PC8105
		PC8110
		PC8115

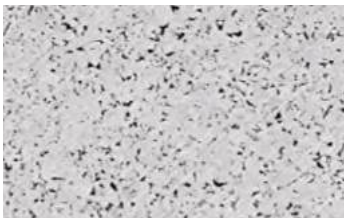
The features of PVD coated grades

PVD Coated grades	ISO	Features
PC5300	P30 ~ P40 M20 ~ M30 K20 ~ K25 S15 ~ S25	• Universal grade for stainless,HRSA,steel and interrupted cast iron machining • High chipping and welding resistance for longer tool life • New TiAlN coating and ultra fine grain substrate adopted
PC5400	P35 ~ P45 M30 ~ M40 K30 ~ K35 S25 ~ S35	• For medium cutting for hard-to-cut materials, stainless steel, steel, and cast iron at medium or low speed • Stable machinability with chipping resistance, fracture resistance and welding resistance • Ultra fine substrate with high toughness and new AlCIN layer
PC8105	S01 ~ S10 M05 ~ M15 H01 ~ H05	• For high speed and continuous finishing of hard-to-cut materials and STS • Excellent cutting performance with high wear resistance and oxidation resistance • Ultra fine substrate and the new TiAlN coating layer
PC8110	S05 ~ S15 M10 ~ M20 H05 ~ H10 K10 ~ K20	• For high speed and continuous medium cutting of hard-to-cut materials and STS • Excellent tool life with high wear/plastic deformation resistance at high temperature • New TiAlN coating layer and substrate with excellent thermal resistance
PC8115	S10 ~ S20 M15 ~ M25 H10 ~ H15	• For medium to low speed and medium to rough cutting of hard-to-cut materials and STS • Excellent tool life with high wear resistance and chipping resistance • Ultra fine substrate and the new TiAlN coating layer
PC9030	M25 ~ M35 S20 ~ S30	• Medium,roughing and heavy interrupted cutting for stainless steel • TiAlN coating and ultra fine grain substrate adopted • High chipping and welding resistance for stable machining
PC9035	M25~M35 S20~S30	• Optimally designed PVD grade for medium to finish cutting and interrupted cutting of Stainless steel turning • High stability of cutting due to applying high toughness PVD coating layer technology with chipping resistance and fracture resistance • Good chipping resistance and welding resistance in the beginning of cutting through the Edge-Tech™ technology

Uncoated Carbide Grades

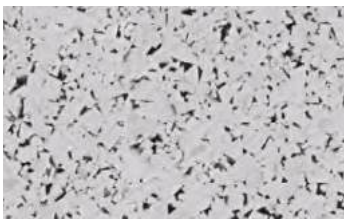
Uncoated carbide grades for turning application of titanium

H01



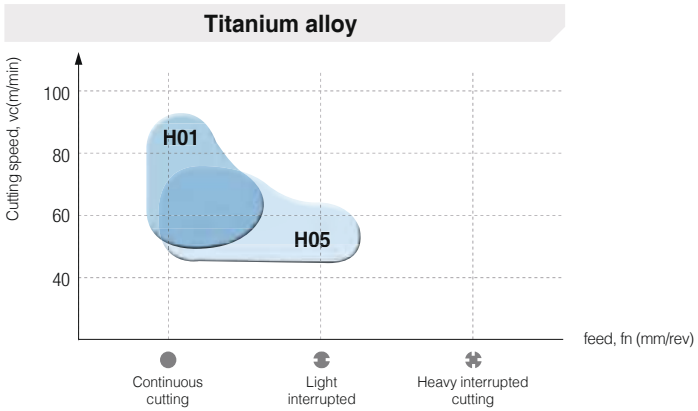
- Increased wear resistance and chipping resistance with the use of ultra fine substrate
- Improved welding resistance and chipping resistance with the use of special surface treatment and sharp cutting edge of VP chip breaker
- Excellent tool life when finishing titanium alloy at high speed

H05



- The 1st recommended grade for machining titanium alloy in a variety of cutting conditions
- Improved welding resistance and chipping resistance with the use of special surface treatment and sharp cutting edge of VP chip breaker
- Ideal for medium cutting of titanium alloy

Grades line-up



Selection system

Workpiece		Recommended grade	Recommended cutting speed (m/min)	ISO	Application range
P	Steel	ST30A	80(60 ~ 100)	P30	ST30A
K	Cast iron	H01	120(90 ~ 150)	K01	H01
		H05	105(80 ~ 130)	K10	H05
		G10	90(65 ~ 115)	K20	
N	Aluminum alloy	H01	440(220 ~ 660)	N10	H01 / G10
	Copper alloys	H05	395(195 ~ 595)	N20	H05
		G10	350(170 ~ 530)	N30	G10
S	Titanium alloy	H01	35(25 ~ 45)	S01	H01
		H05	33(25 ~ 41)	S10	H05
H	High hardness steel	H01	80(55 ~ 105)	H10	H01

Main composition and application range

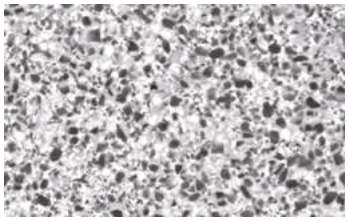
Workpiece	Composition	Composition	Workpiece
P	WC-TiC-TaC-Co	Heat resistance, excellent plastic deformation resistance	Carbon steel, Alloy steel, Stainless steel
M	WC-TiC-TaC-Co	General tools stable heat resistance with strength	Carbon steel, Alloy steel, Stainless steel
K	WC-Co	High strength and superior wear resistance	Cast iron, Non-ferrous metal, Plastic, etc.
S	WC-Co	Excellent wear resistance and chipping resistance	Titanium alloy

Cermet Grades

Solution for turning application of steel

CN1500

- For continuous machining of cold/hot forged steel and sintered ferrous alloy at high speed and low depth of cut
- Excellent wear resistance and crater resistance
- Improved surface roughness acquired by optimized cutting edges



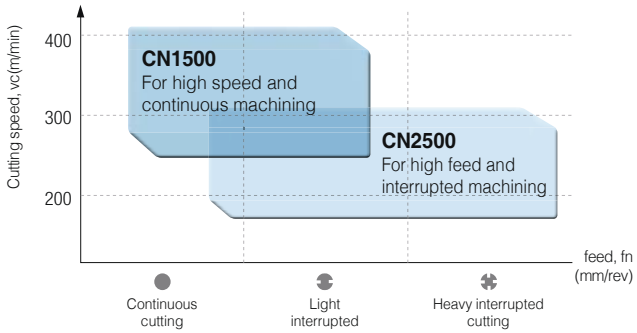
CN2500

- For high interrupted machining of cold/hot forged steel and sintered ferrous alloy at high feed and high depth of cut
- Excellent resistance against chipping, fracture and thermal crack
- Improved surface roughness acquired by optimized cutting edges

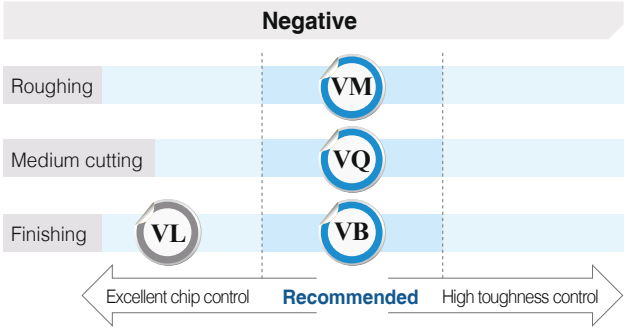
Recommended cutting conditions

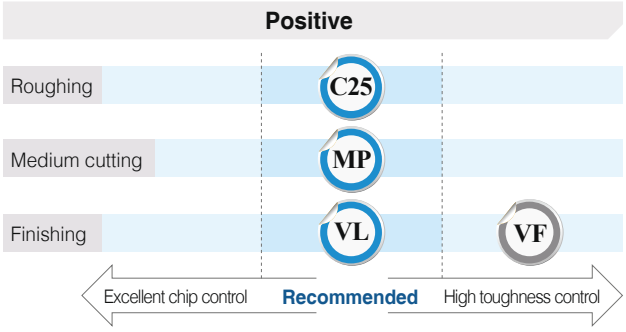
Division	Workpiece	Grade	Recommended cutting speed (m/min)		
			Minimum	Recommended	Maximum
Turning	SM10C, SS440	**CN1500**	150	**270**	400
		CN2500	130	**240**	350
	SM45C	**CN1500**	150	**250**	350
		CN2500	130	**220**	300
	SCM440 Sintered ferrous alloy	**CN1500**	120	**220**	300
		CN2500	100	**200**	250

Grades line-up



Chip breakers line-up





Selection system

Workpiece		Machining types	Recommended grade	Recommended cutting speed (m/min)	ISO	Application range
P	Steel	Continuous cutting	CN1500	250 (150 ~ 350)	P10	CN1500
		Interrupted cutting	CN2500	220 (130 ~ 300)	P20	CN2500
					P30	
K	Cast iron	Continuous cutting	CN1500	200(100 ~ 300)	K10	CN1500
		Interrupted cutting	CN2500	165(80 ~ 250)	K20	CN2500

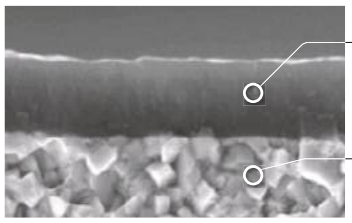
Coated Cermet Grades

Coated cermet for machining carbon steel, alloy steel and sintered ferrous components

CC1015

- Maximized resistance to built-up edge and oxidation in continuous cutting at high speeds and low depth of cuts
- Excellence in wear resistance, compared to the existing tools

Features



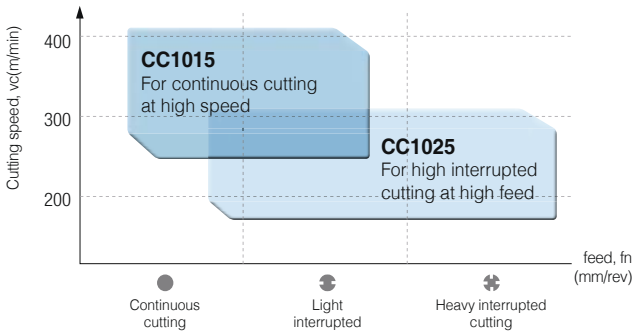
CC1025

- Maximized resistance to built-up edge and oxidation in interrupted cutting at high feeds and high depth of cuts
- Excellence in breakage prevention, compared to the existing tools

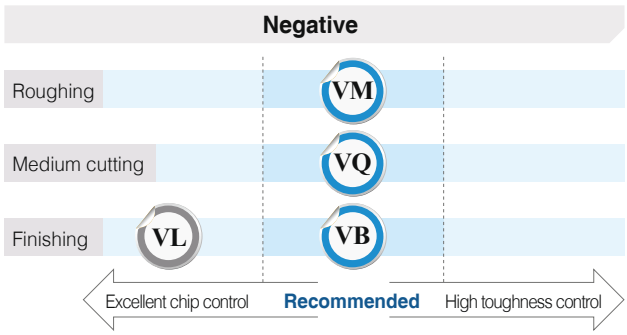
Recommended cutting conditions

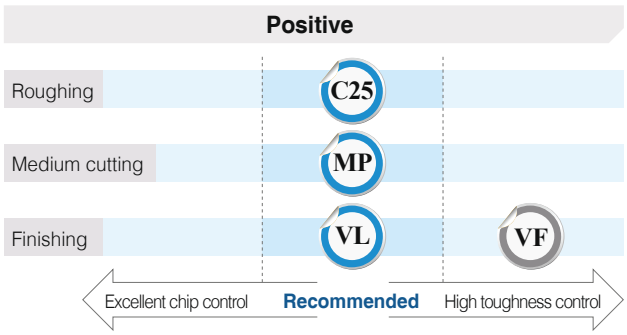
Division	Workpiece	Grade	Recommended cutting speed (m/min)		
			Minimum	Recommended	Maximum
Turning	SM10C, SS440	CC1015	200	**350**	450
		CC1025	180	**290**	400
	SM45C	CC1015	200	**300**	400
		CC1025	180	**270**	350
	SCM440 Sintered ferrous alloy	CC1015	180	**270**	350
		CC1025	150	**250**	300

Grades line-up



Chip breakers line-up





Selection system

Workpiece		Machining types	Recommended grade	Recommended cutting speed (m/min)	ISO	Application range
P	Steel	Continuous cutting	CC1015	325 (200 ~ 450)	P10	CC1015
		Interrupted cutting	CC1025	265 (180 ~ 350)	P20	CC1025
					P30	
K	Cast iron	Continuous cutting	CC1015	270 (180 ~ 350)	K10	CC1015
		Interrupted cutting	CC1025	250 (150 ~ 300)	K20	CC1025

The features of coated cermet grade

Coated cermet	ISO	Features
CC1015	P10 ~ P20 / K05 ~ K15	• High quality of surface finish • Applicable for non-coated Cermet range • Optimal for finishing of various workpiece cutting
CC1025	P15 ~ P25 / K10 ~ K20	

Diamond Coated Grades

Diamond coating grade for Non-ferrous metals

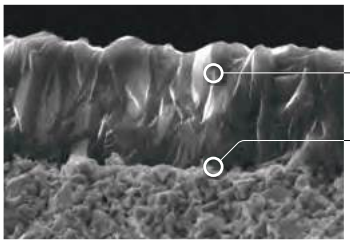
ND3000

- SP3-crystalline diamond coatings of high purity and high hardness
- Improved adhesion between coated layers and the substrate that is specialized for diamond coatings
- Excellent tool life when machining graphite and ceramic

Features

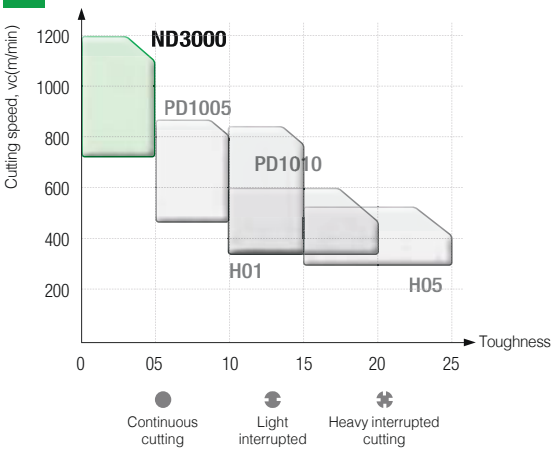
ND3000

Cross section of ND3000's coated layers



Application range

N Non-ferrous metal



Selection system

Workpiece			Grade	ISO	Application range
N	Non-ferrous	Graphite/ Ceramic	**ND3000**	N01	ND3000
		Al alloy	**ND3000**	N05	

The features of diamond coated grades

Grade	ISO	Features
ND3000	N01 ~ N05	• For continuous roughing of graphite, ceramic, and Al alloy at high speeds • Exceptional cutting performance due to high resistance to wear and flaking • High hardness diamond coatings of high purity SP3-crystalline structure

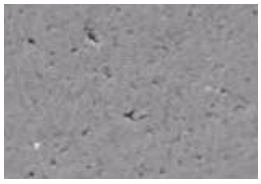
DLC Coated Grades

DLC-Coated Inserts for Non-Ferrous Metals

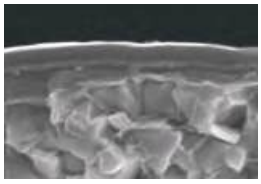
PD1005 / PD1010

- High hardness and low friction DLC coating technology
- Lubrication and maximized wear resistance increase machinability and machining quality.
- Optimal substrate for each workpiece ensures stable and long tool life
- For non-ferrous metals such as aluminum, Al-Si alloy, copper and etc. machining

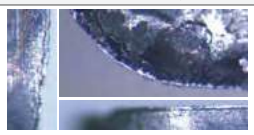
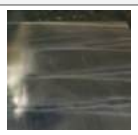
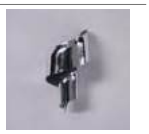
Features



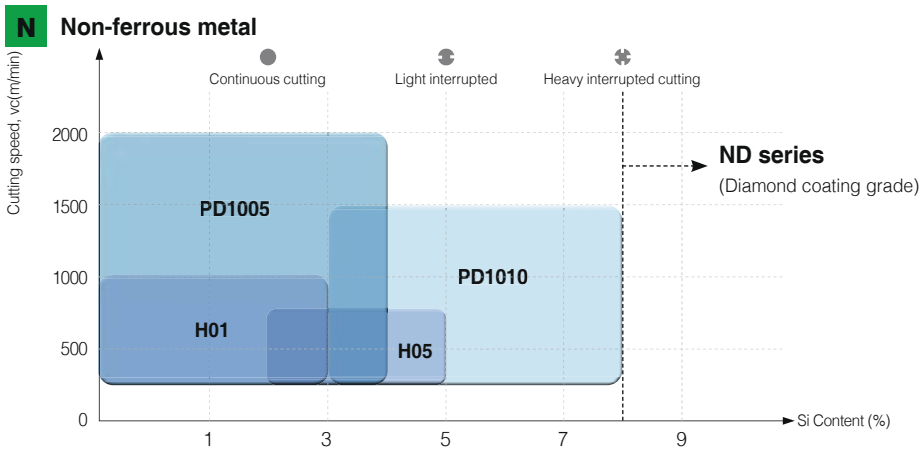
Smooth coating surface



Hard DLC coating

Grade	Wear resistance and Welding resistance	Surface finish	Chip curl
Carbide non coated			
DLC (PD1010)			

Application range



Selection system

Workpiece			Grade	ISO	Application range
N	Non-ferrous	Aluminum and copper (Soft non-ferrous metals)	PD1005	N05	PD1005
		Aluminum alloy	PD1005 PD1010	N10	
		Al-Si alloy (Hardened non-ferrous metals)	PD1010	N15	PD1010

The features of DLC coating grades

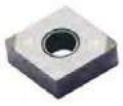
Grade	ISO	Features
PD1005	N05~N10	• For high speed and continuous machining of Aluminum and copper • High wear and welding resistance realize good machinability • High performance of DLC coating with high hardness and low friction
PD1010	N10~N15	• For medium to high and interrupted machining of aluminum alloy and Al-Si alloy • Stable tool life due to substrate with chipping resistance • High performance DLC coating with high hardness and low friction

cBN Insert Grades

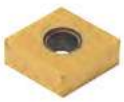
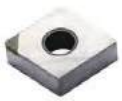
Features

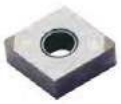
- Excellent hardness and thermal resistance by adding a special ceramic binder at high pressure and high temperature in sintering process
- Excellent hardness and wear resistance for higher productivity in machining cast iron and heat-treated alloy at high speed

► Insert type

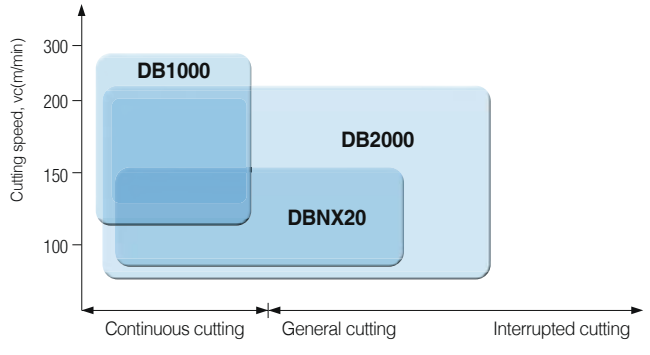
High resistance		Wear resistance		Productivity	
					
For regrinding type	One use type	Multi-corner type	Multi-corner type (coated)	Solid type	Grooving type

cBN inserts

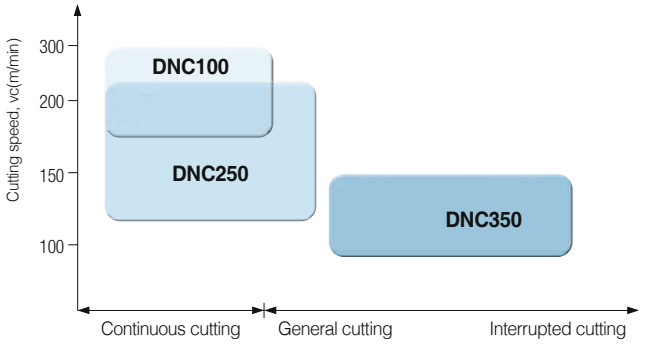
Multi edge coated type		One use type	
	 2NU-CNGA120408		 NU-CNGA120408
• Easy handling of corners • Strong Brazing • Excellent tool life compared to non-coated inserts		• Economic price • Easy handling of tools • A wide variety of series • Smaller than expensive cBN and dramatic cost down • Strong weld face and stable cutting performance	

Multi edge type		Regrinding type	
	 2NU-CNGA120408		CNMA120408
• Price per edge is more reasonable compare to normal single cornered, one-used type • Insert with several brazed cBN • Wide application of continuous to interrupted machining		• Long tool life • Excellent wear resistance, High hardness • Saved tool cost due to the regrinding insert 3~4 time	

cBN application range



Coated cBN application range



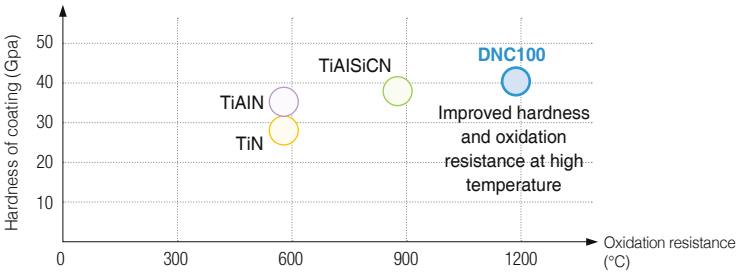
Cutting conditions of cBN grades

ISO		Grades		Insert color	Application	Cutting speed, vc (m/min)	Feed, fn (mm/rev)	Depth of cut, ap (mm)
H	High hardness steel	Coated	DNC100		Continuous cutting at high speed	180 – 300	0.03 ~ 0.3	0.03 ~ 0.3
			DNC250		Continuous and low interrupted cutting at high speed	120 – 220	0.05 ~ 0.3	0.05 ~ 0.3
			DNC300		Medium and low interrupted cutting	90 – 250	0.05 ~ 0.2	0.05 ~ 0.2
			DNC350		Medium and high interrupted cutting	90 – 150	0.05 ~ 0.3	0.05 ~ 0.3
		Non coated	DB1000		Continuous cutting at high speed	130 – 250	0.03 ~ 0.15	0.03 ~ 0.2
			DB2000		Medium and high interrupted cutting	80 – 200	0.03 ~ 0.2	0.03 ~ 0.3
			DBNX20		Highly efficient cutting	120 – 150	0.03 ~ 0.3	0.03 ~ 0.5
			DBN250		Medium and high interrupted cutting	80 – 120	0.03 ~ 0.2	0.03 ~ 0.3
			DBN350		Highly efficient cutting	120 – 220	0.03 ~ 0.2	0.03 ~ 0.3
S	HRSA		DB7000		Continuous cutting at high speed	100 – 300	0.05 ~ 0.2	0.1 ~ 1.0
K	Cast iron		DBN700A		Continuous cutting at high speed	500 – 2000	0.10 ~ 0.4	0.1 ~ 0.4

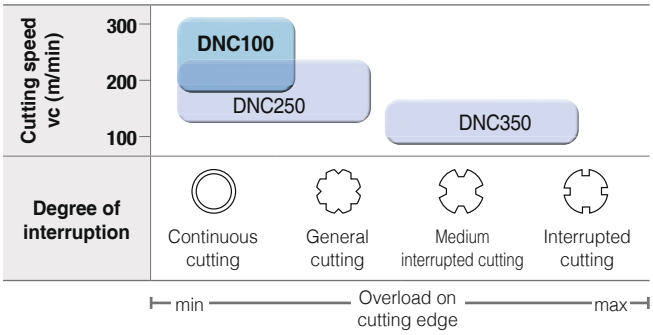
Coated cBN

DNC100

- Excellent thermal resistance
- Coating layer with high hardness, oxidation resistance and chipping resistance



Application range



Recommended cutting conditions

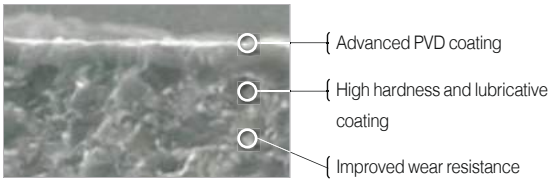
Cutting speed vc (m/min)	180 – 300
Feed fn (mm/rev)	0.03 – 0.3
Depth of cut ap (mm)	0.03 – 0.3

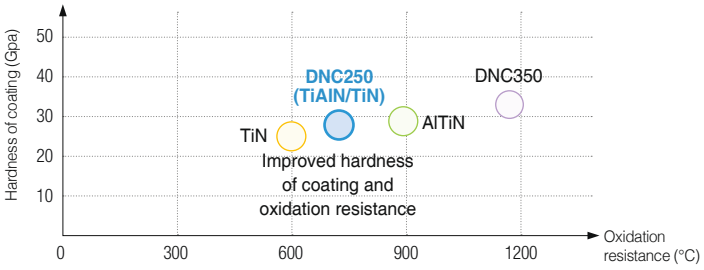
- Increased oxidation resistance and wear resistance due to high hardness coating layer
- Dramatically improved fracture resistance and chipping resistance

Multi-corner coated cBN for high efficient cutting of heat-treated alloy

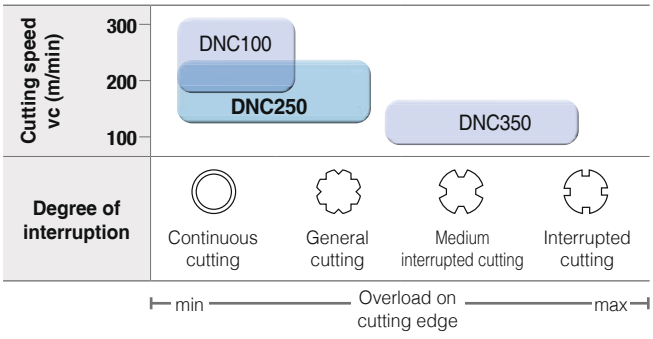
DNC250

- Stable and long tool life
- Cost effective by multi-cornered one-use insert





Application range



Recommended cutting conditions

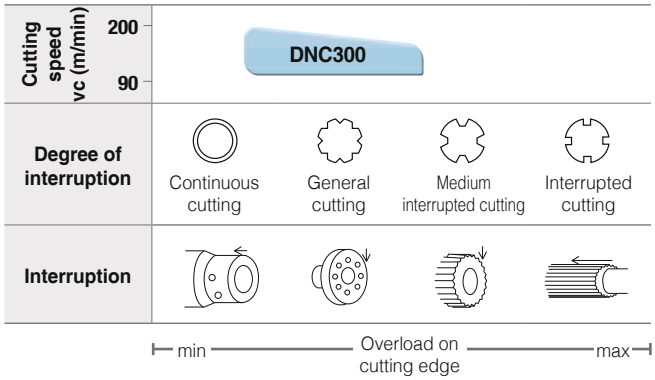
Cutting speed vc (m/min)	120 – 220
Feed fn (mm/rev)	0.05 – 0.3
Depth of cut ap (mm)	0.05 – 0.3

Coated cBN

DNC300

- 1st recommended grade for low to medium interrupted cutting
- Enhanced chipping resistance and wear resistance comparing to competitor's grade
- Minimized flaking of coating by stable coating

Application range



Recommended cutting conditions

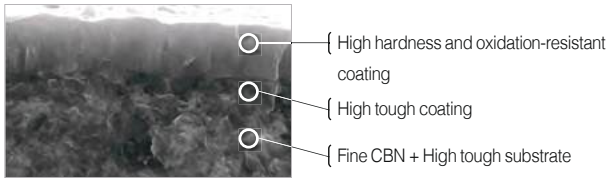
Cutting speed vc (m/min)	90 – 200
Feed fn (mm/rev)	0.05 – 0.3
Depth of cut ap (mm)	0.05 – 0.25

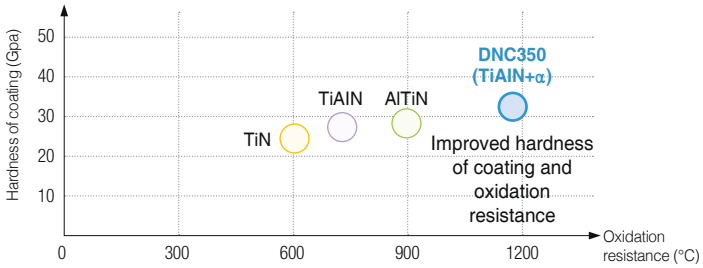
- Enhanced oxidation resistance and wear resistance due to high hardness layer
- Highly increased chipping resistance, fracture resistance and wear resistance

Coated cBN for high interrupted cutting

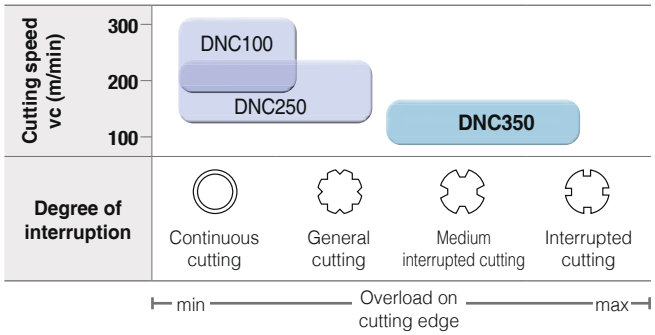
DNC350

- Excellent tool life and productivity in interrupted cutting
- New PVD coating applied with high hardness and oxidation resistance





Application range



Recommended cutting conditions

Cutting speed vc (m/min)	90 – 150
Feed fn (mm/rev)	0.05 – 0.3
Depth of cut ap (mm)	0.05 – 0.3

Non-coated cBN

DB1000

- Non-coated cBN with the highest wear resistance at high speed
- Excellent tool life in continuous to light interrupted cutting
- Improved fracture resistance along with high wear resistance
  - Higher thermal resistance and hardness due to pure TiCN ceramic binder

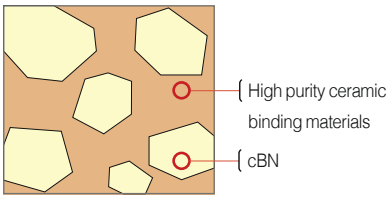
Non-coated cBN

DB2000

- Universal grade for overall machining of heat-treated
  - Stable tool life in continuous to low/medium interrupted cutting
- Both fracture resistance and wear resistance acquired with the use of pure ceramic binder
- Stable surface roughness

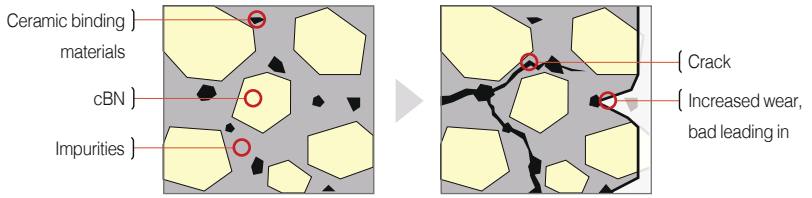
New technology of high purity ceramic binding materials

DB1000/DB2000



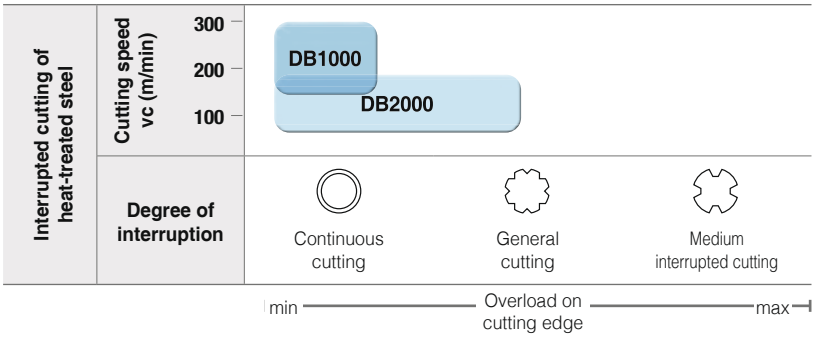
DB2000 dramatically minimizes impurities with the use of high purity ceramic binding materials and enhances thermal resistance and toughness.

Conventional grade



Impurities included in conventional grade's ceramic binder caused inferior thermal resistance and hardness of sintered compounds, which led to crack (fracture) and wear

Application range



Recommended cutting conditions (DB1000)

Cutting speed vc (m/min)	130 – 250
Feed fn (mm/rev)	0.03 – 0.15
Depth of cut ap (mm)	0.03 – 0.2

Recommended cutting conditions (DB2000)

Cutting speed vc (m/min)	80 – 200
Feed fn (mm/rev)	0.03 – 0.2
Depth of cut ap (mm)	0.03 – 0.3

PCD Insert Grades

- Excellent tool life for aluminum alloy and copper alloy
- Excellent tool life for ceramic, high-silicon aluminum and rock or stone
- Excellent tool life for rubber, carbon, graphite and wood

Features

KORLOY PCD products are manufactured by using high quality PCD tips under ultra high temperatures and pressure. The PCD tip is welded on the qualified KORLOY carbide insert
KORLOY high quality PCD products meet a wide range of application needs in turning, milling, and endmills.

PCD grade

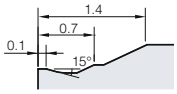
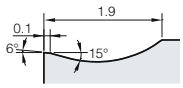
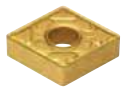
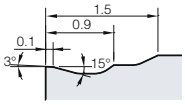
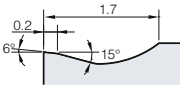
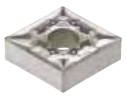
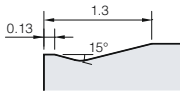
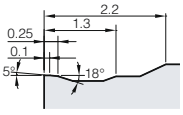
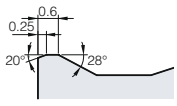
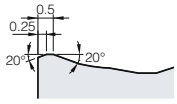
Grade	Features	Application	Grain size (㎛)	Force of resistance(Gpa)
DP90	Coarse diamond grain has been used to get excellent wear resistance enough to machine cemented-carbide, high Si aluminum alloy	Cemented carbide Ceramic roughing High Si aluminum alloy Rock, Stone	25 ~ 30	≒1.10
DP150	By use of fine diamond grain having good bonding property, it is suitable for machining of Non-ferrous metal, graphite	High Si aluminum alloy Copper, Bronze alloy Rubber, Wood, Carbon	5 ~ 10	≒1.95
DP200	By use of ultra fine diamond grain, it is possible to make sharp cutting edge. Thus it is appropriate grade to machine Non-ferrous material	Plastic Wood Precise finishing of aluminum	~ 2	≒2.45

Recommended cutting conditions

Workpiece	Cutting speed (m/min)	Feed Turning(mm/rev) Milling(mm/t)	Depth of cut (mm)	Recommended grade	
				1st	2nd
Aluminum alloy (4%~8%Si)	1000 ~ 3000	0.1 ~ 0.6	~ 3	DP150	DP200
Aluminum alloy (9%~14%Si)	600 ~ 2500	0.1 ~ 0.5	~ 3	DP150	DP200
Aluminum alloy (15%~18%Si)	300 ~ 700	0.1 ~ 0.4	~ 3	DP150	DP200
Copper, Bronze alloy	~ 1000	0.05 ~ 0.2	~ 3	DP150	DP200
Reinforced plastic	~ 1000	0.1 ~ 0.3	~ 2	DP150	DP200
Wood	~ 4000	0.1 ~ 0.4	-	DP150	DP200
Cemented carbide	10 ~ 30	~ 0.2	~ 0.5	DP90	DP150

Chip Breakers for Turning

V series

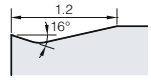
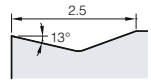
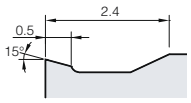
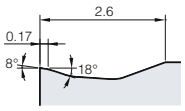
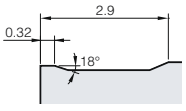
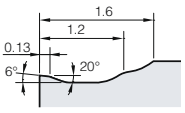
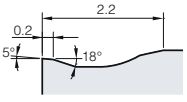
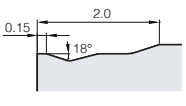
Picture	Cutting edge	Application range	Features
VL		0.10~0.35 0.2~1.5	**For Finishing** • Stable chip control in high toughness material; low carbon steel, pipe steel & steel plates • Improved chip control for facing, copy machining and better surface finish
VB		0.15~0.45 0.5~2.0	**For Finishing** • Improved chip control for smaller depth of cuts • Excellent chip control in copying, corner R machining
VF 		0.05~0.35 0.5~1.5	**For Finishing** • Good chip control quality on varied depth of cut • Excellent cutting edge strength has been acquired due to the special chip-breaker
VC		0.12~0.45 0.5~3.5	**For Medium to finish cutting** • Stable chip control in copying and internal machining with various depths of cut
VQ 		0.10~0.40 1.0~3.0	**For Medium to finish cutting** • Medium to finishing cutting edges offer improved edge hardness • Increased chip control in low depth of cut cutting range • For cermet
VM		0.10~0.50 1.0~5.0	**For Medium cutting** • Wide available chip control range from medium-finishing to medium-roughing • Suitable chip breaker for CNC machining
VH		0.70~1.40 6.0~15.0	**For Heavy duty cutting** • Designed specifically for heavy machining • Specialized chip breaker for the heavy industries like Ship building, Power plant industry
VT		0.75~1.60 7.0~17.0	**For Heavy duty cutting** • Designed specifically for heavy machining • Specialized chip breaker for the heavy industries like Ship building, Power plant industry

Application range — feed rate fn (mm/rev): 0.04 0.063 0.10 0.16 0.25 0.4 0.63 1.0 1.6 2.5 4.0 6.3

Application range — depth of cut ap (mm): 0.1 0.16 0.25 0.4 0.63 1.0 1.6 2.5 4.0 6.3 10.0 11.6 13

Notice: Application ranges are based on main cutting material

Chip Breakers for Turning

	Picture	Cutting edge	Application range	Features
V series	VP1		0.05~0.20; 0.1~1.5	**For Finishing** • High positive cutting edge • Reduced contact chip with rake face minimizes temperature to improve tool life
V series	VP2		0.05~0.40; 0.5~4.0	**For Medium to finish cutting** • Stable chip control and high machinability in copying with various depths of cut
V series	VP3		0.05~0.45; 0.5~4.5	**For Medium cutting** • High positive cutting edge with wide land • Stable cutting performance in interrupted machining with high toughness • Stable machinability and chip control in machining with high depth of cut
V series	VP4		0.15~0.45; 1.0~4.5	**For Roughing** • The first recommended chip breaker for inconel cutting • High hard and resistant rake angle to prevent notch wear in roughing of rugged surfaces
V series	VR		0.25~0.55; 1.2~7.0	**For Roughing** • High feed machining with the combination of wide land and pockets • Shallow chip breaker design prevents chip blocking at high feed • Decreased wear on major cutting edge due to special treatment on blade
-P series	LP		0.10~0.40; 0.5~2.5	**For Medium to finish cutting** • Angle land decreases cutting resistance for better surface roughness • Special dot design prevents chip blocking by clear chip breaking
-P series	MP		0.15~0.45; 0.5~4.5	**For Medium cutting** • Increased productivity due to excellent chip control in various conditions • Stable tool life by reducing cutting load at high speed and high feed
-P series	CP		0.12~0.35; 0.5~3.5	**For Medium to finish cutting** • Chip breaker with strong cutting edge in high interrupted finishing and medium cutting • Effective chip control in low depth of cut to high depth of cut due to 2-step rear angle

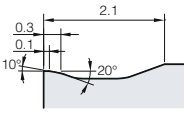
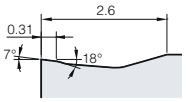
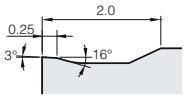
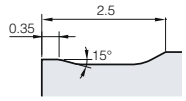
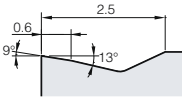
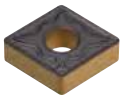
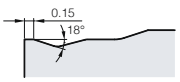
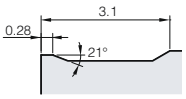
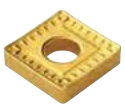
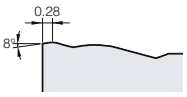
Application range

feed rate fn (mm/rev): 0.04 | 0.063 | 0.10 | 0.16 | 0.25 | 0.4 | 0.63 | 1.0 | 1.6 | 2.5 | 4.0 | 6.3

depth of cut ap (mm): 0.1 | 0.16 | 0.25 | 0.4 | 0.63 | 1.0 | 1.6 | 2.5 | 4.0 | 6.3 | 10.0 | 11.6 | 13

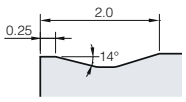
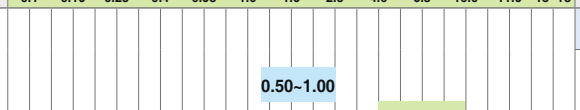
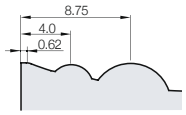
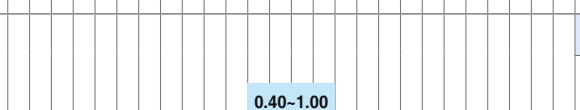
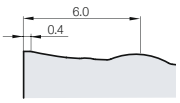
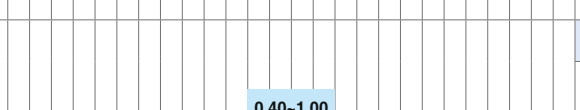
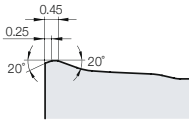
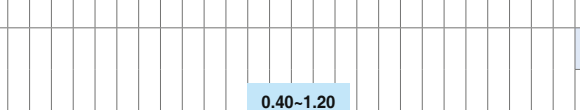
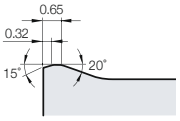
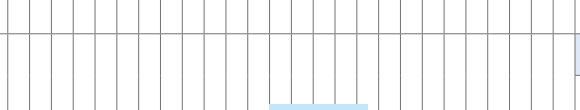
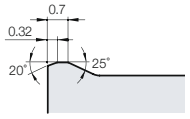
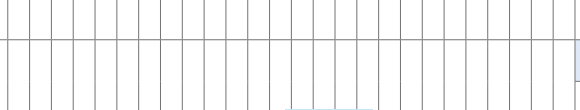
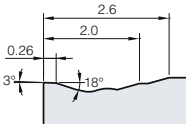
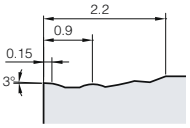
Notice: Application ranges are based on main cutting material

Chip Breakers for Turning

		Picture	Cutting edge	Application range	Features
				feed rate fn (mm/rev): 0.04 0.063 0.10 0.16 0.25 0.4 0.63 1.0 1.6 2.5 4.0 6.3 depth of cut ap (mm): 0.1 0.16 0.25 0.4 0.63 1.0 1.6 2.5 4.0 6.3 10.0 11.6 13	
-M series	MM			0.12~0.45 0.5~5.5	**For Medium cutting** • The first recommended chip breaker for continuous stainless applications cutting • Improved tool life and surface finish due to dual lands combining both machinability and toughness • Wide chip pockets for stable chip evacuation at high depth of cuts and high feeds
	RM			0.15~0.55 2.0~6.0	**For Roughing** • The first recommended chip breaker for interrupted cutting or roughing of stainless steel • Inhibited notch wear and burr creation at high depth of cuts and feeds • Reduced cutting loads and longer tool life at high feeds
-K series	MK			0.10~0.50 1.0~5.5	**For Medium cutting** • 1st recommended chip breaker for cast iron continuous cutting • Suitable for continuous cutting of ductile and gray cast iron • Excellent tool life and surface finish thanks to angle lands improving cutting performance
	RK			0.20~0.60 1.5~6.0	**For Roughing** • 1st recommended chip breaker in cast iron continuous cutting and roughing • Suitable for machining ductile and gray cast iron at high speeds and high feeds • Improved toughness and chipping resistance due to flat lands
H series	HA			0.03~0.30 0.5~2.5	**For Medium to finish cutting** • Sharp cutting edge generates low cutting force • Specially designed main cutting edge with high toughness • Suitable for cutting of low carbon steel, stainless steel, aluminum
	HM			0.20~0.55 1.0~5.0	**For Medium to finish cutting** • Suitable for deep depth of cut and high feed cutting of steel and cast iron • Suitable for intermittent cutting
G series	GR			0.30~0.80 3.0~8.0	**For Roughing** • Suitable for deep depth of cut and high feed cutting of steel and cast iron • Suitable for intermittent cutting
	GH			0.30~1.30 3.0~11.0	**For Heavy duty cutting** • Suitable for heavy duty cutting due to strong cutting edge • Wide chip control range with low cutting force

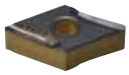
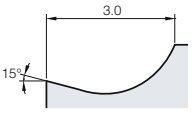
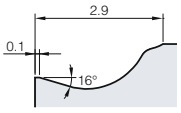
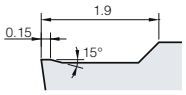
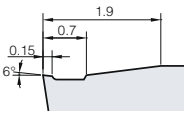
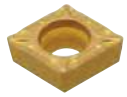
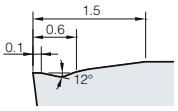
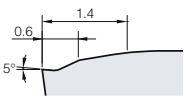
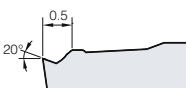
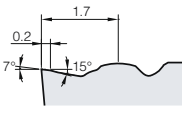
Notice: Application ranges are based on main cutting material

Chip Breakers for Turning

	Picture	Cutting edge	Application range	Features
G series	B25			**For General cutting** • Suitable for general cutting condition
Heavy series	HP			**For Medium to finish cutting** • Recommended in low carbon steel and stainless steel cutting due to sharp cutting edge with low cutting resistance • Recommended chip breaker for excellent chip control cutting by main rounded point bump and assisting bumps
	HL			**For Medium to finish cutting** • Recommended in low carbon steel and stainless steel cutting due to sharp cutting edge with low cutting resistance • Better chip evacuation and low cutting resistance in various cutting conditions
	HG			**For Roughing** • Recommended in general cutting (in horizontal lathe) by nick-designed cutting edge and reduced cutting resistance • Better chip evacuation due to improved chip flow in high feed cutting
	HV			**For Roughing** • 1st recommended chip breaker in vertical machining • Longer tool life in high feed machining due to improved chip flow and reduced wear on the minor cutting edge
	HX			**For Roughing** • Recommended in high feed and high depth of cut machining due to strong cutting edge • Longer tool life from smooth chip flow even in tough cutting conditions
Wiper series	LW			**For Medium to finish cutting** • Guarantees excellent surface roughness and good chip controls at high feed machining
	VW			**For Medium to finish cutting** • Improved surface roughness at shallow depth of cut and high feed due to strong cutting edge

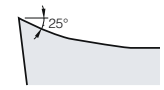
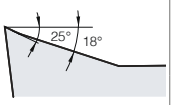
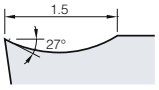
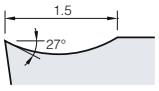
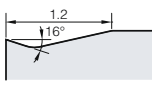
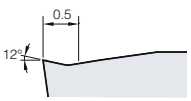
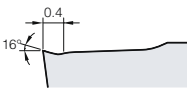
Notice: Application ranges are based on main cutting material

Chip Breakers for Turning

		Picture	Cutting edge	Application range	Features
				feed rate fn (mm/rev): 0.04 0.063 0.10 0.16 0.25 0.4 0.63 1.0 1.6 2.5 4.0 6.3 depth of cut ap (mm): 0.1 0.16 0.25 0.4 0.63 1.0 1.6 2.5 4.0 6.3 10.0 11.6 13	
Shaft series	SR			0.12~0.45 1.0~4.5	**For Medium to finish cutting** • Shallow depth of cut with sharp edge • Longer tool life at high speed cutting due to low cutting force • Good surface finish
	SH			0.15~0.50 1.5~5.0	**For Medium cutting** • Good chip flow increases tool life and machinability.
Posi-C series	C25			0.10~0.35 1.0~3.0	**For Roughing** • Suitable for interrupted cutting and cast iron machining • Good surface finish due to low cutting force • Suitable for both boring and outer diameter turning
Posi-H series	HMP			0.08~0.40 0.5~3.5	**For Medium cutting** • Excellent chip control at wide range of cutting conditions • Machining versatility over a wide range of materials
Posi-V series	VF			0.05~0.25 0.1~1.5	**For Finishing** • Improved surface finish and size accuracy due to stable inner boring
	VL			0.05~0.20 0.1~1.0	**For Finishing** • Superior chip control in low carbon steel, pipes, and steel plates
Posi-P series	FP			0.01~0.20 0.1~1.0	**For Finishing** • For chip control in low depth of cut mild cutting • Enhanced surface finish and reduced cutting load
	MP			0.05~0.30 0.3~3.0	**For Medium cutting** • Sharp cutting edge and wide chip pocket for low cutting load • Stable chip control at varying depth of cuts • Excellent cutting performance when machining automobile components

Notice: Application ranges are based on main cutting material

Chip Breakers for Turning

	Picture	Cutting edge	Application range	Features
AL series	AK		feed rate fn (mm/rev): 0.03~0.40; 0.1~4.0	**For Medium to finish cutting** • Exclusive chip breaker for aluminum and aluminum alloy cutting
AL series	AM		feed rate fn (mm/rev): 0.03~0.45; 0.3~4.0	**For Medium to finish cutting** • Exclusive chip breaker for aluminum and aluminum alloy cutting • Balanced surface finish and toughness from 2 step side rake angle
AL series	AR		feed rate fn (mm/rev): 0.05~0.50; 0.5~4.0	**For Medium to finish cutting** • High stability of cutting edge secures great performance in high speed and interrupted machining • High speed of medium and interrupted operation
Auto tool series	KF		feed rate fn (mm/rev): 0.01~0.12; 0.01~1.0	**For Finishing** • Suitable for shallow depth of cut machining with sharp edge • Longer tool life at high speed cutting due to low cutting force • Good surface finish
Auto tool series	KM		feed rate fn (mm/rev): 0.04~0.15; 0.05~1.5	**For Medium to finish cutting** • Improved chip control makes tool life long and better machining
Auto tool series	VP1		feed rate fn (mm/rev): 0.05~0.3; 0.5~4.0	**For Medium cutting** • For medium cutting with strong cutting edge • For wide range of cutting by optimal width of chip breaker for each cutting depth
Auto tool series	MS		feed rate fn (mm/rev): 0.03~0.25; 0.3~3.0	**For medium cutting (for surface roughness)** • Reduced welding and cutting heat by sharp cutting edge • Enhanced chip evacuation in low to high feed cutting
Auto tool series	FS		feed rate fn (mm/rev): 0.01~0.20; 0.1~2.0	**For Finishing** • For various workpiece (P, M, S) cutting • Good surface finish and low cutting load due to sharp cutting edge

Application range

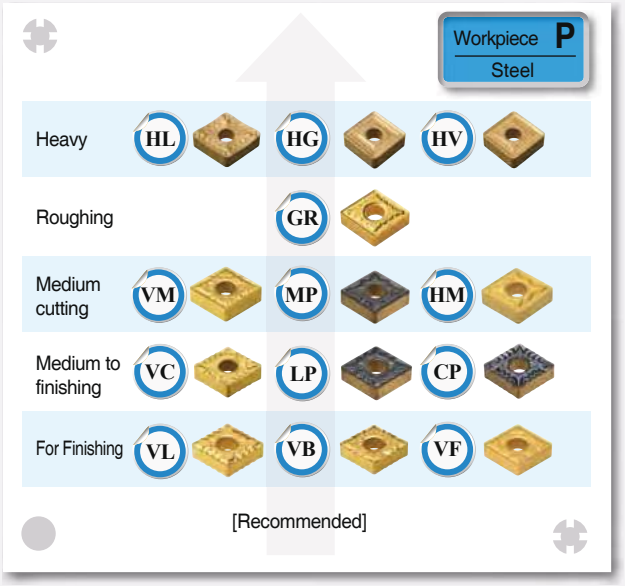
feed rate fn (mm/rev): 0.04 0.063 0.10 0.16 0.25 0.4 0.63 1.0 1.6 2.5 4.0 6.3

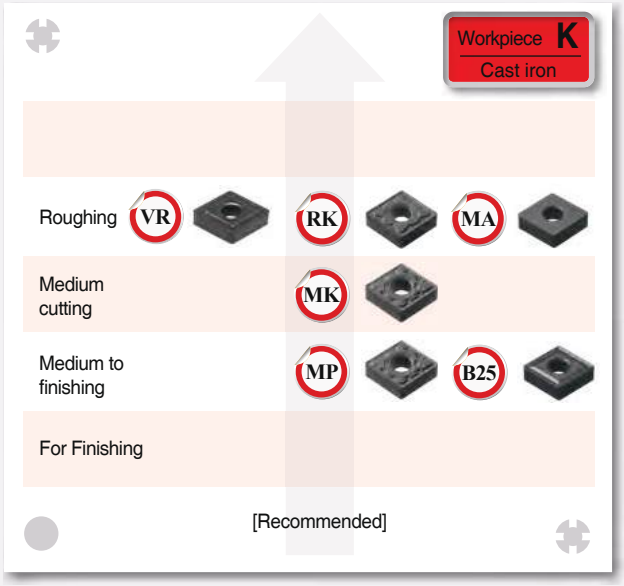
depth of cut ap (mm): 0.1 0.16 0.25 0.4 0.63 1.0 1.6 2.5 4.0 6.3 10.0 11.6 13

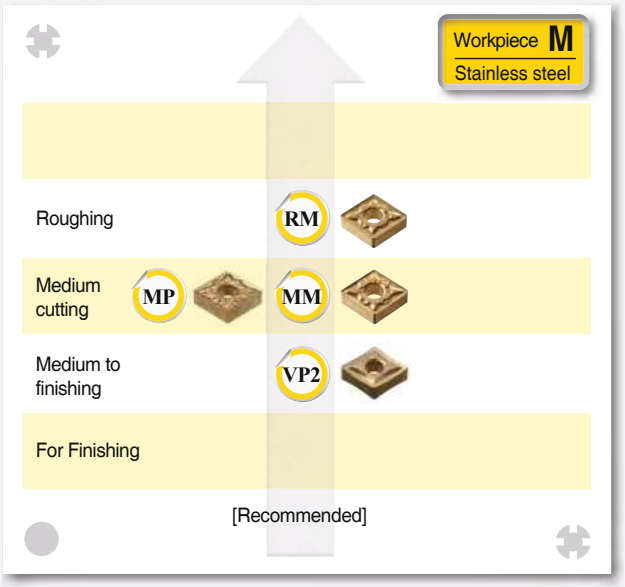
Notice: Application ranges are based on main cutting material

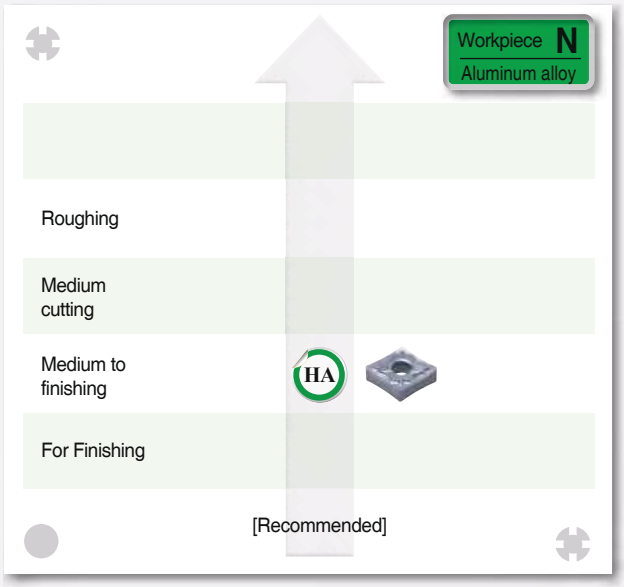
Application Range of KORLOY Main Chip Breakers

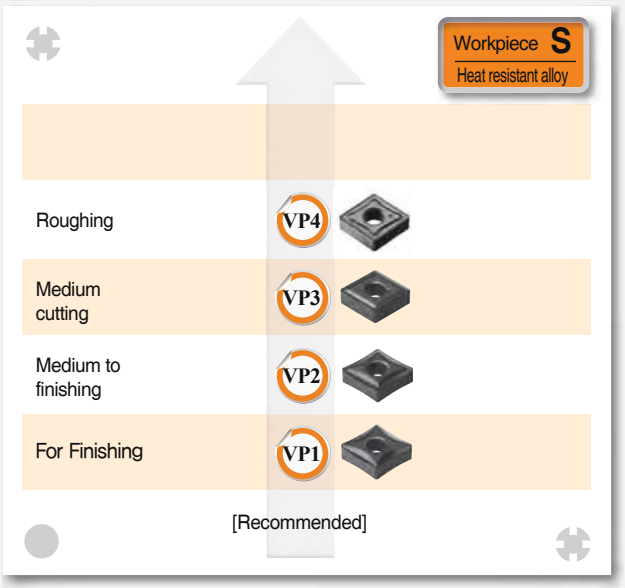
Negative inserts











Application Range of KORLOY Main Chip Breakers

Positive inserts

Workpiece P — Steel

Roughing			C25			
Medium cutting	HMP		MP			
Medium to finishing			VL		VF	
For Finishing			FP			

[Recommended]

Workpiece K — Cast iron

Roughing			C25			
Medium cutting			MP			
Medium to finishing						
For Finishing						

[Recommended]

Workpiece M — Stainless steel

Roughing			C25			
Medium cutting	HMP		MP			
Medium to finishing			VL		VF	
For Finishing			FP			

[Recommended]

Workpiece N — Aluminum alloy

Roughing			AR			
Medium cutting			AM			
Medium to finishing						
For Finishing			AK			

[Recommended]

Workpiece S — Heat resistant alloy

Roughing						
Medium cutting			MP			
Medium to finishing			VL			
For Finishing						

[Recommended]

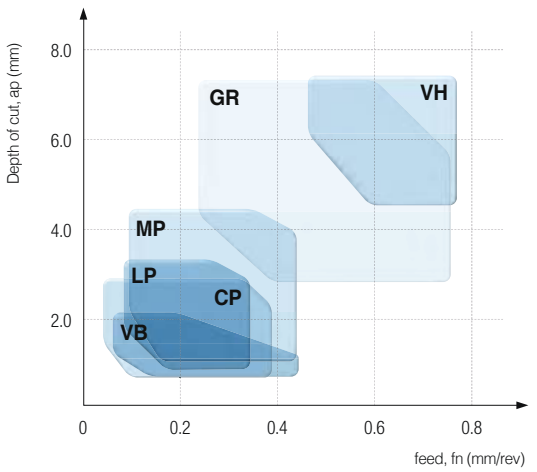
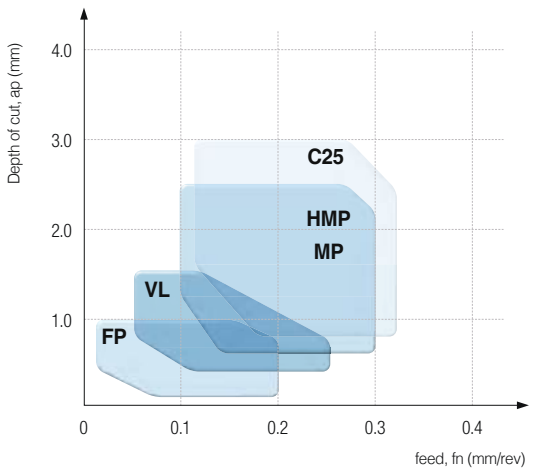
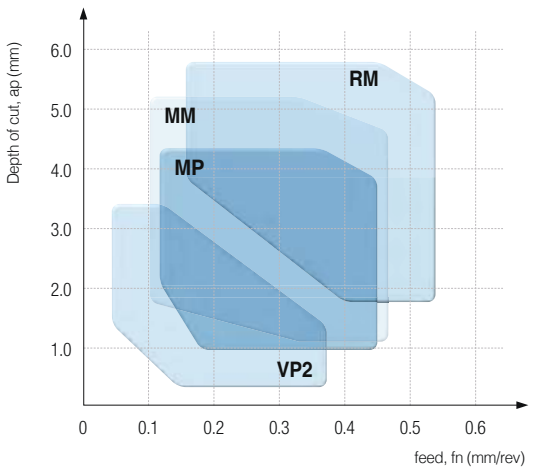
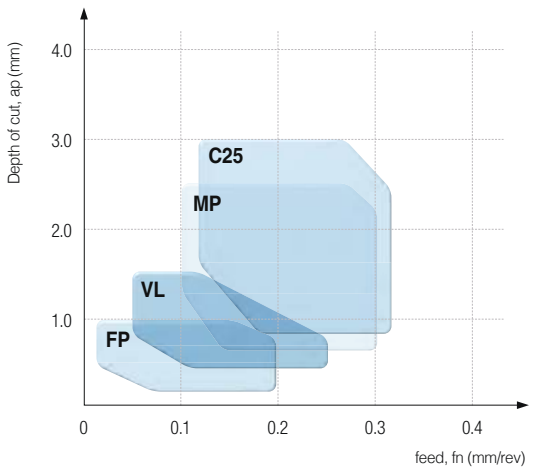
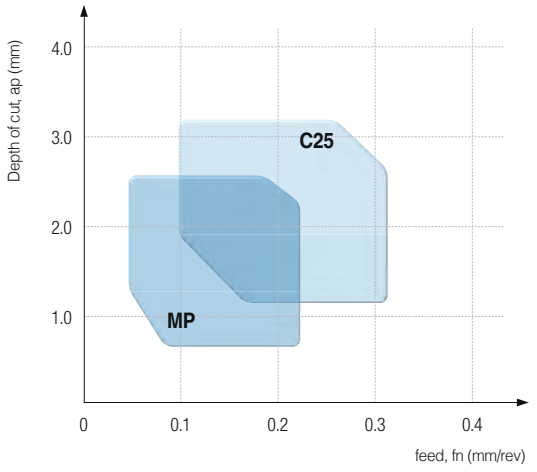
Automatic lathes — G grade

Roughing						
Medium cutting			VP1			
Medium to finishing	KM		MS			
For Finishing	KF		FS			

[Recommended]

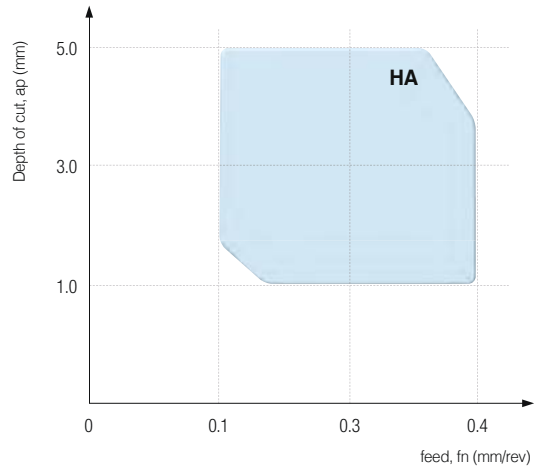
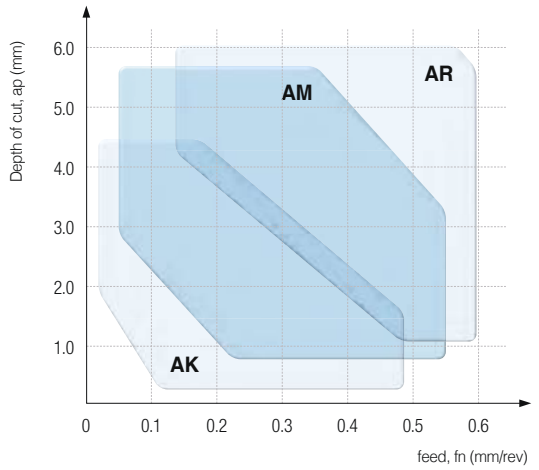
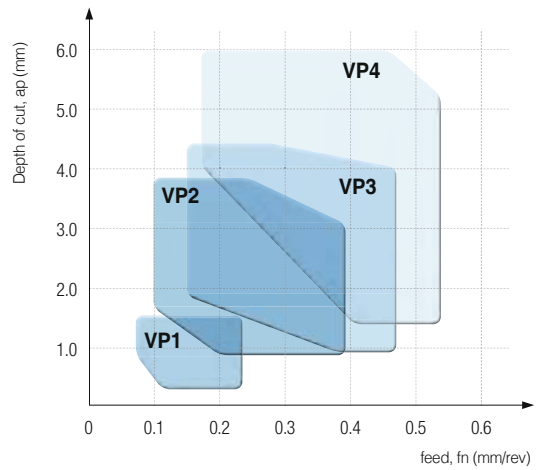
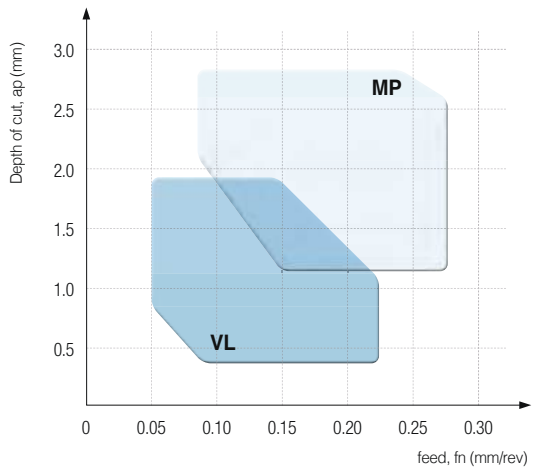
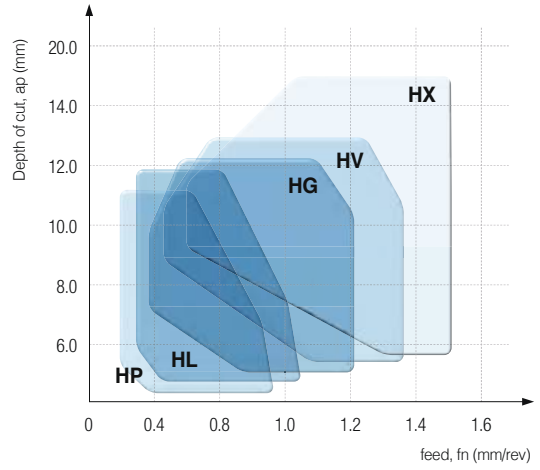
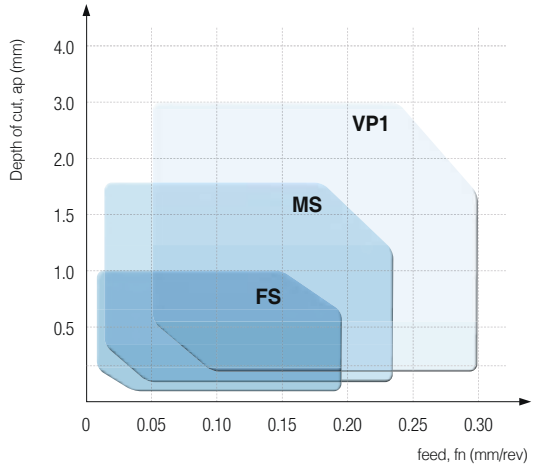
Application Range of KORLOY Main Chip Breakers

Application range

	Negative	Positive
P		
M		
K		

Application Range of KORLOY Main Chip Breakers

Application range

	Negative	Positive
N		
S		
	Heavy	**Automatic lathes**
etc.		

Negative insert

VL Chip Breaker [For Finishing]

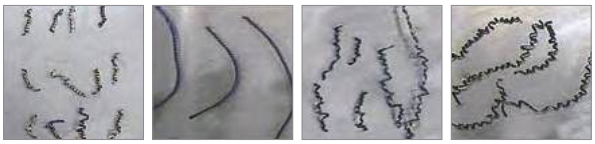
- Improved chip control for machining material that have high toughness such as low carbon steel, pipe, steel plate etc.
- Improved chip control and decreased cutting load on external, facing, and copying applications
- Improved strength of the cutting edge for measurable efficiency in automated production

Features

- **2 steps designed chip-breaker** - Suitable Mild steel
  - Stable chip control on the low feed and cutting depth
- **Designed with special dots** - Stable chip breaking on the low cutting depth
- **Applied side rake angle** - Improved chip control on facing, copying applications
  - Decreased cutting load and better surface finish

Chip control

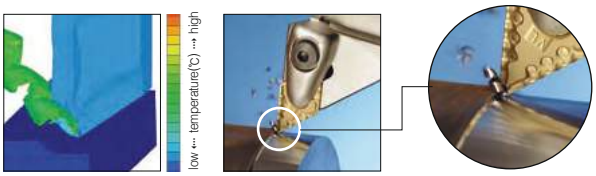
Workpiece	SM20C
Cutting conditions	vc = 250m/min, fn = 0.2mm/rev(Side), ap = 0.5mm, dry
Tools	DNMG150408-VL



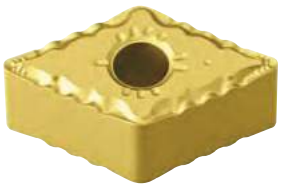
[VL Chip Breakers] [Competitor A] [Competitor B] [Competitor C]

FEM Cutting simulation analysis in the design

- For design of geometry, chip shapes and chip flow are predictable
- Optimal chip breaker design for various cutting conditions and workpieces



VB Chip Breaker [For Finishing]



- Excellent chip evacuation in continuous and high speed machining of various workpieces
- 3-dimensional chip breaker achieves lower cutting resistance, high rigidity of the cutting edge, and longer tool life
- Stable chip control in copying and internal machining

Features

- **6 bumps on the insert corner** - Superior chip control and chip cutting in copying with various depths of cut
- **Side rake angle** - Superb chip cutting in facing and copying. Superior tool life due to improved surface roughness and lower cutting resistance
- **Cutting edge on 100° part for medium machining (For CNMG)** - Excellent chip evacuation and toughness in machining with high depth of cut

[VB Chip Breakers] [Conventional chip breaker]

Negative insert

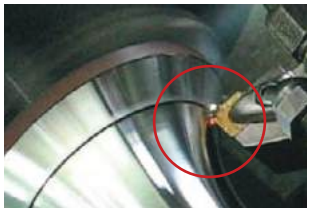
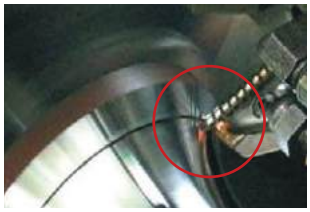
VC Chip Breaker [For medium to finishing]

- Superior chip evacuation in high speed and continuous machining of various workpieces (carbon steel, alloy steel etc.)
- KORLOY 3 dimensional chip breaker ensures longer tool life due to low cutting load and improved cutting edge strength
- Stable chip control in copying and internal machining

Features of VC chip breaker

- **4 bumps on the insert corner**
  - Excellent chip control in various depths of cut and superb chip cutting in external, internal, copy machining and facing

Evaluation of chip control (Copying)

VC Chip Breakers		Conventional chip breaker	
			

VQ Chip Breaker [For medium to finishing_For cermet]

- Excellent cutting performance and reinforced cutting edges
- Improved chip control at low depth of cuts

Features of VQ chip breaker

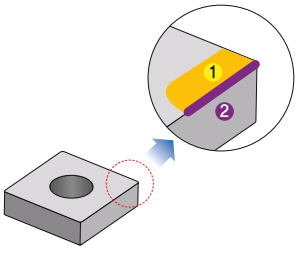
- **Three dimensional rake angle**
  - Improved surface finish thanks to sharp cutting performance
  - Less cutting heat and longer tool life thanks to low cutting resistance

- **Three dimensional rake angle**
  - Improved surface finish thanks to sharp cutting performance
  - Less cutting heat and longer tool life thanks to low cutting resistance

Performance evaluation

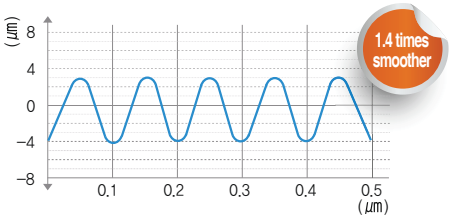
Workpiece	SCM440(Alloy steel), Ø100, External diameter turning
Cutting conditions	vc = 280m/min, ap = 1.5mm, fn = 0.25mm/rev
Tools	CNMG120408-VQ(CN2500)

Wear comparison

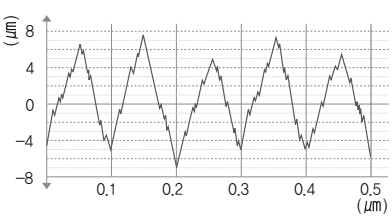


[CN2500-VQ] [Competitor]

Surface roughness comparison



CN2500 (Ra 3.0 ㎛)



Competitor (Ra 7.0 ㎛)

Negative insert

LP Chip Breaker [For medium to finishing]

- Chip breaker for forged steel of automobile parts and normal steel
- Quad dots improve productivity through efficient chip control at high feed
- Angle land minimizes cutting force

Features of LP chip breaker

Front dot

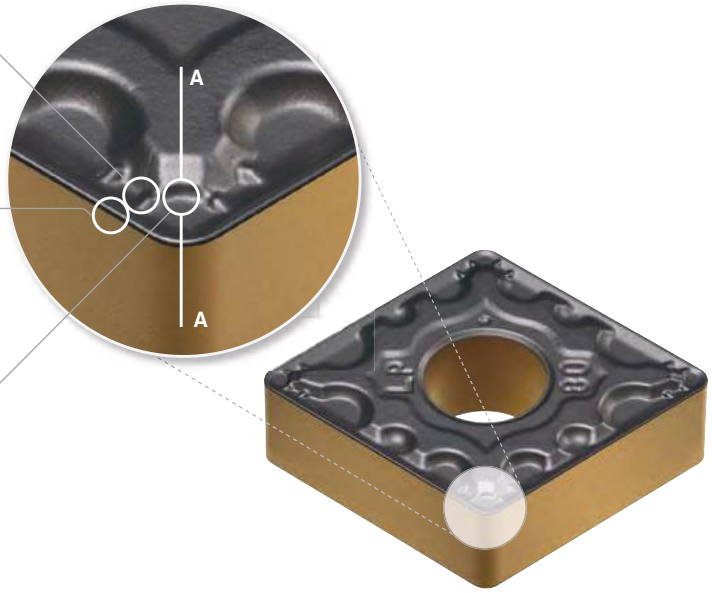
- Higher stability of chip curls at high feed
- Excellent chip control when copying
- Lower cutting force at low depth of cut and high feed

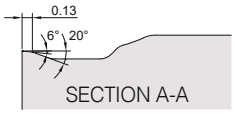
Variable land

- Less crater wear
- Prevents chipping on minor cutting edge

Flat zone

- Larger chip pocket for better chip evacuation at high feed
- Reduced cutting force with larger contact surface of chips

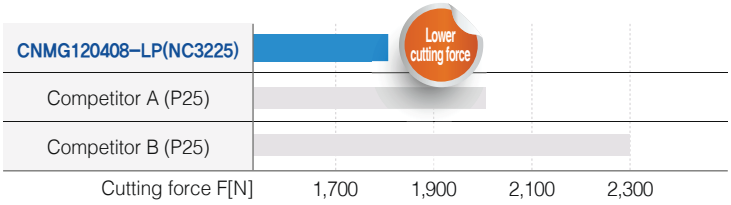




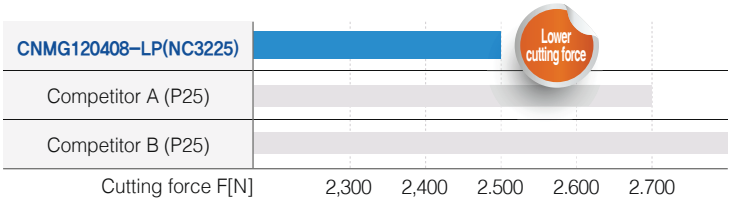
Performance evaluation

Workpiece	SM45C, Ø100, External machining
Cutting conditions	vc(m/min) = 250, ap(mm) = 1.0, fn(mm/rev) = 0.25 / 0.40, wet
Tools	CNMG120408 - MP

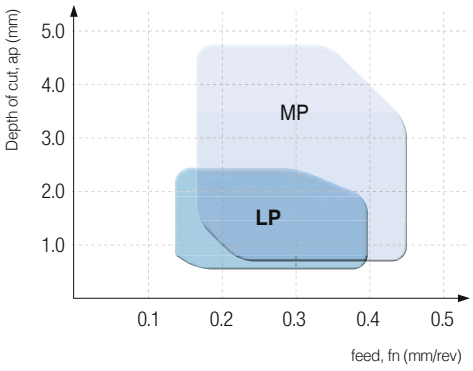
Medium feed (0.25 mm/rev)



High feed (0.40 mm/rev)



Application range



Negative insert

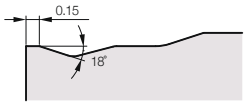
CP Chip Breaker [For medium to finishing]

- Chip breaker with strong cutting edge for heavy interrruption in the range of medium to finishing
- Effective chip control in the range from low depth of cut to high depth of cut due to 2-stepped back angle
- Stable chip evacuation and breaking long chip in deep cutting by side rake angle and continuous bumps

Features of CP chip breaker

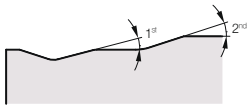
Flat land

- Strong cutting edge in interrupted roughing
- Kept the balance between continuous cutting and interrupted cutting
- Expanded versatility



2-steped back side

- Better chip control in low depth of cut machining
- Improved chip evacuation in high feed machining
- Expanded versatility by 2-stepped rake angle



Side rake angle + continuous bumps

- Enhanced surface finish
- Improved chip evacuation
- Breaking long chips

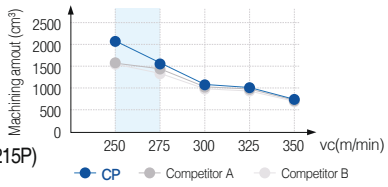
Performance evaluation

V-T (Vc-Tool life)

Workpiece Alloy steel(SCM440), External machining

Cutting conditions vc(m/min) = 250, 300, 350
fn(mm/rev) = 0.3,
ap(mm) = 0.5, wet

Tools Insert : CNMG120408-CP(NC3215P)
Holder : PCLNL2525-M12



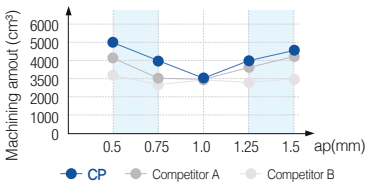
[CP] [Competitor A] [Competitor B]

D-T (Depth of cut-Tool life)

Workpiece Alloy steel(SCM440), External machining

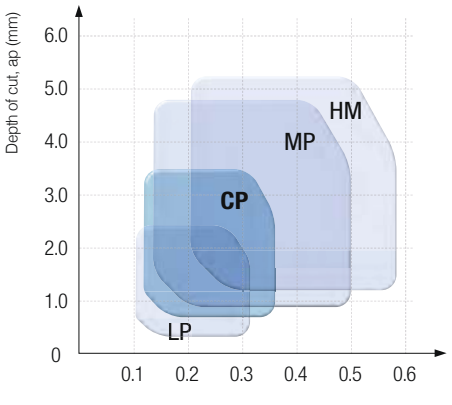
Cutting conditions c(m/min) = 250, fn(mm/rev) = 0.2
ap(mm) = 0.5, 0.75, 1.0, 1.25, 1.5, wet

Tools Insert : CNMG120408-CP (NC3215P)
Holder : PCLNL2525-M12



[CP] [Competitor A] [Competitor B]

Application range



Negative insert

MP Chip Breaker [For medium cutting]

- Chip breaker for forged steel of automobile parts and all other steels
- Quad dots improve productivity through efficient chip control at high feed
- Angle land minimizes cutting force

Features of MP chip breaker

Front two step dot

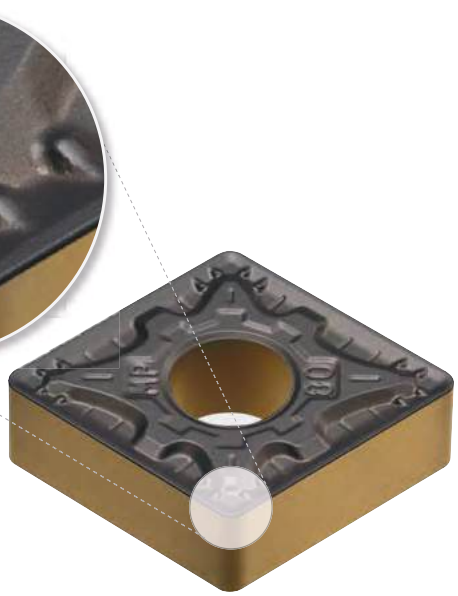
- Higher stability of chip curls at high feed
- Excellent chip control when copying
- Lower cutting force at high depth of cut

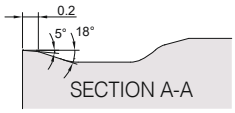
Variable land

- Less crater wear
- Prevents chipping on minor cutting edge
- Higher toughness at high depth of cut and interrupted cutting

Flat zone

- Larger chip pocket for better chip evacuation at high feed
- Reduced cutting force with larger contact surface of chips

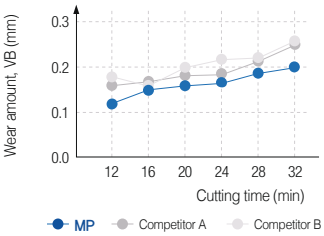




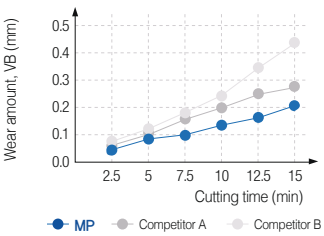
Performance evaluation

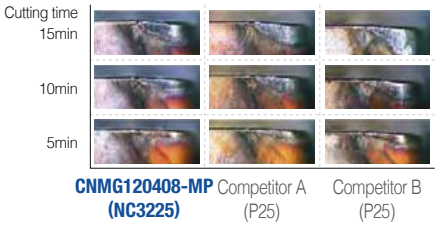
Workpiece	Alloy steel (SCM440), Ø100, External machining
Cutting conditions	vc (m/min) = 280, ap (mm) = 1.5, fn (mm/rev) = 0.25/0.40, wet
Tools	CNMG120408 - MP

Medium feed (0.25 mm/rev)

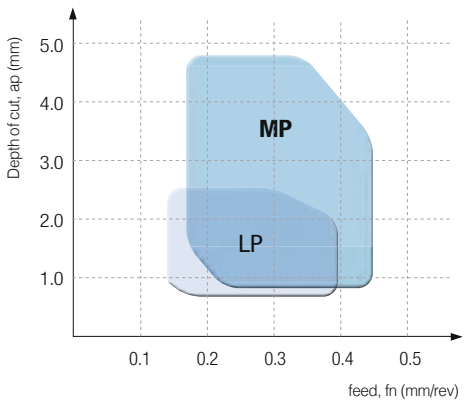


High feed (0.40 mm/rev)





Application range



Negative insert

MM Chip Breaker [For medium cutting]

- The 1st recommended chip breaker for stainless steel machining
- Change to: A dual land achieves sharp cutting performance and insert toughness
- Wide chip pockets for stable chip evacuation at high feeds/depths of cut

Features of MM chip breaker

Depth of cut land

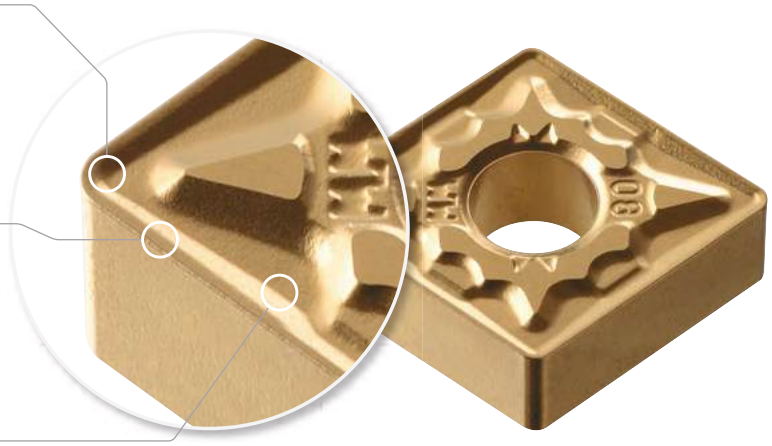
- Excellent chip control and sharp cutting at low depths of cut
- Delays crater wear
- Prevents plastic deformation

Dual land

- Balance between requirements of sharp and tough cutting edges
- Sharp cutting edge for high speed chining
- Prevents chipping in interrupted machining

Wide chip pocket

- Stable chip evacuation at high speeds/feeds
- Improved surface finishes by reduced workpiece scratches caused by work-hardened chips at high depths of cut
- Prevents built-up edge

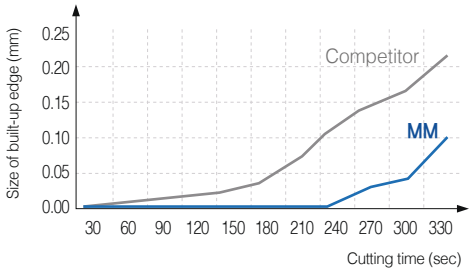


Performance evaluation

Built-up edge

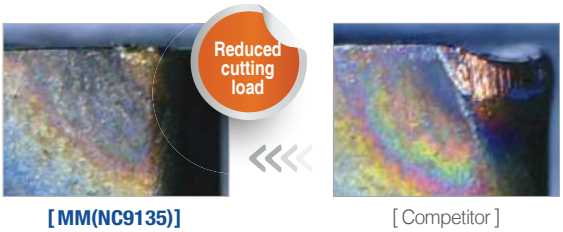
Workpiece	STS405 (Ferrite)
Cutting conditions	vc (m/min) = 180, fn (mm/rev) = 0.3,ap (mm) = 3.0, wet
Tools	Insert : CNMG120408-MM (NC9125) Holder : PCLNL2525-M12

[MM(NC9135)] [Competitor]

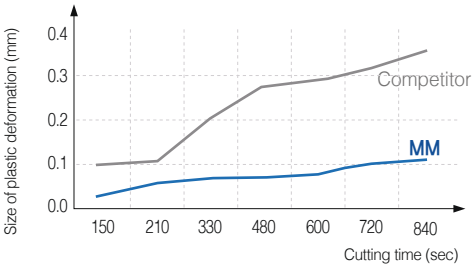


Plastic deformation

Workpiece	STS316 (Austenite)
Cutting conditions	vc (m/min) = 200, fn (mm/rev) = 0.35, ap (mm) = 2.0, dry
Tools	Insert : CNMG120408-MM (NC9135) Holder : PCLNL2525-M12



[MM(NC9135)] [Competitor]



Negative insert

RM Chip Breaker [For roughing]

- The 1st recommended chip breaker for rough and interrupted machining of stainless steel
- Prevents notch wear and burrs at high feeds and depths of cut
- Reduced cutting force extends tool life in high feed machining

Features of RM chip breaker

Depth of cut land

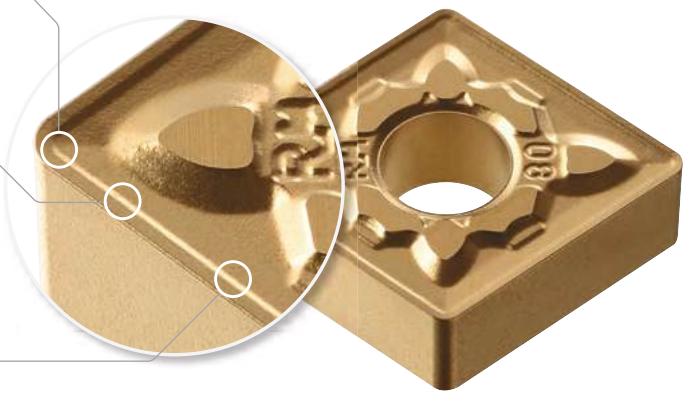
- Excellent chip control and sharp cutting at low depths of cut
- Delays crater wear
- Prevents plastic deformation

Wide land & Front angle

- Sharp cutting edges and a wide land reduce cutting force
- Reduced burrs
- Dispersed cutting load enables higher toughness

Step

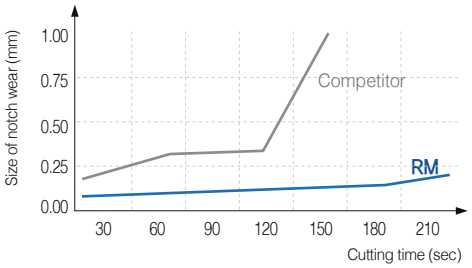
- Stepped design makes chip evacuation easier
- Smooth chip evacuation prevents plastic deformation



Performance evaluation

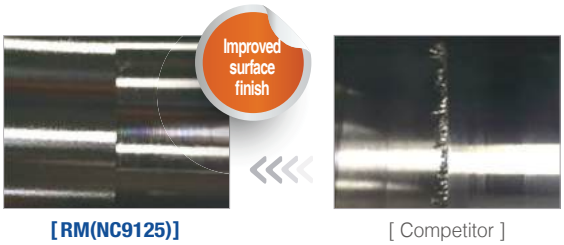
Notch wear

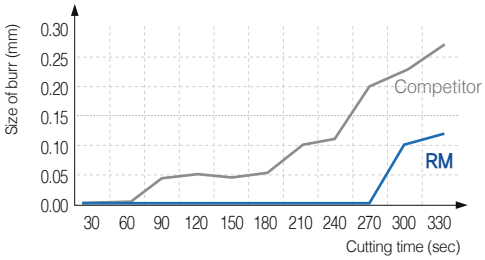
Workpiece	STS410 (Martensite)
Cutting conditions	vc (m/min) = 150, fn (mm/rev) = 0.25, ap (mm) = 3.0, wet
Tools	Insert : CNMG120408-RM (NC9125) Holder : PCLNL2525-M12



Burr

Workpiece	Duplex
Cutting conditions	vc (m/min) = 120, fn (mm/rev) = 0.2, ap (mm) = 2.0, dry
Tools	Insert : CNMG120408-RM (NC9125) Holder : PCLNL2525-M12





Negative insert

MK Chip Breaker [For medium cutting]

- Ideally suited for continuous cutting of ductile cast iron and gray cast iron
- Angle lands provide upgraded surface finish

Features of MK chip breaker

Angle land

- Angle lands provide sharper cutting performance
- Maximized wear resistance in continuous cutting
- High quality results in surface finish

Wide supporting area

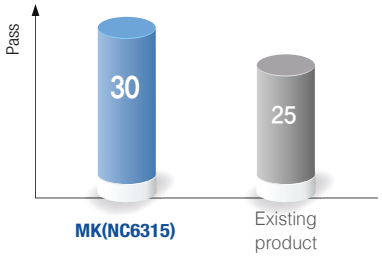
- Higher clamping stability
- Prevents chipping at vibrations during operation

Performance evaluation

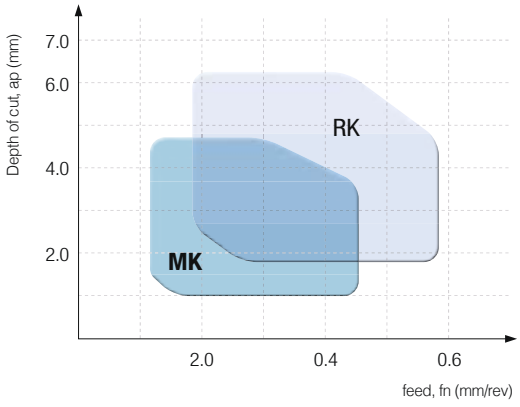
Wear resistance

Workpiece	GCD500(KS), Ø90 (Spherical tube) → Ø30 machining
Cutting conditions	vc (m/min) = 400, fn (mm/rev) = 0.35, ap (mm) = 2.5, wet
Cutting time	30 passes with results of normal wear on rake/flank surface
Tools	Insert : CNMG120408-MK (NC6315) Holder : DCLNR2525-M12

[MK(NC6315)] [Existing product]



Application range



Negative insert

RK Chip Breaker [For roughing]

- Ideally suited for high speed / high feed cutting of ductile cast iron and gray cast iron
- Flat lands provide upgraded toughness and chipping resistance

Features of RK chip breaker

Flat land

- Flat lands provide upgraded toughness and chipping resistance
- Stable machining availability under high cutting loads at high depth of cuts or interrupted cutting
- Optimized land width for high feed machining

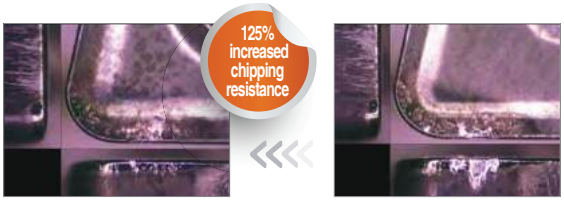
Wide supporting area

- Higher clamping stability
- Minimizes vibration and chipping.

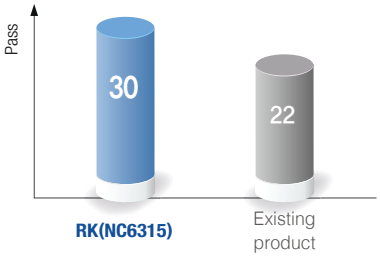
Performance evaluation

Impact resistance

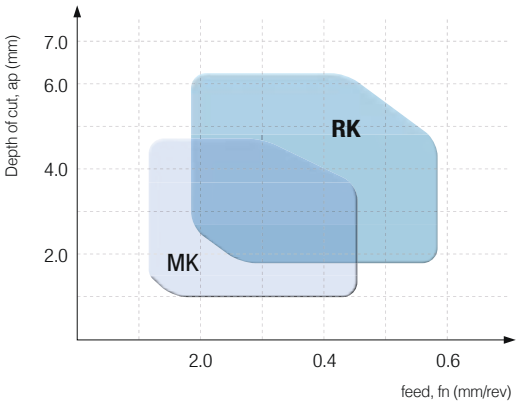
Workpiece	GCD500 (KS), Ø90 (Triangular tube) → Ø30 machining
Cutting conditions	vc (m/min) = 380, fn (mm/rev) = 0.35, ap (mm) = 2, wet
Cutting time	15 passes with results of normal rake surface wear and good chipping resistance
Tools	Insert : CNMG120408-RK (NC6315) Holder : DCLNR2525-M12



[RK(NC6315)] [Existing product]



Application range



Negative insert

VP1 Chip Breaker [For Finishing]

- Cutting edges designed in high-positive
  - Reduced contact area between rake surface and chip minimizes cutting heat and improved tool life
- **Recommended cutting conditions:** fn(mm/rev) = 0.05~0.2, ap(mm) = 0.1~1.5

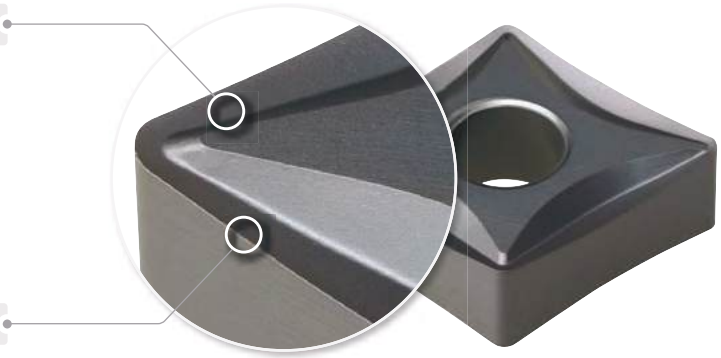
Features of VP1 chip breaker

Optimized design for finishing

- Obtains excellent cutting performance and quality surface finish at low depth of cut and high speed

High-positive blade design

- Minimizes cutting heat by reducing the contact area between flank surface and chips
- Prevents built-up edge and extends tool life



VP2 Chip Breaker [For medium to finishing]

- High-positive cutting edge design/Side rake angle applied
  - Stable chip control improves machinability when ball machining at variable depths of cut
- **Recommended cutting conditions:** fn(mm/rev) = 0.1~0.4, ap (mm) = 0.5~4.5

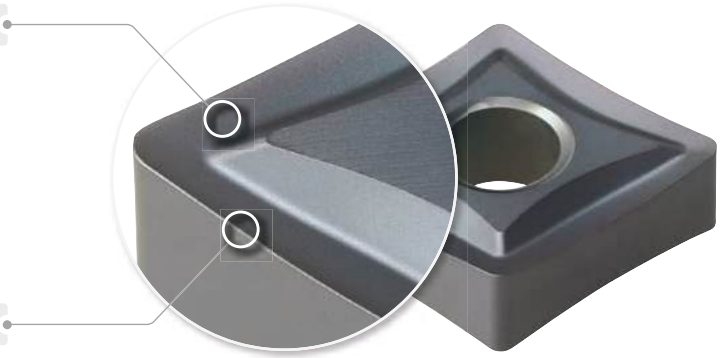
Features of VP2 chip breaker

Sharp blades and wide chip pockets

- Increase productivity
- Ideal for medium to finish cutting

High-positive blade design

- Improves cutting performance with its stable chip control at varying depth of cuts



Negative insert

VP3 Chip Breaker [For medium cutting]

- High-positive cutting edge design/Wide land applied
  - Improved stability at interrupted cutting when toughness is required. Stable chip control and machinability at high depth of cut
- **Recommended cutting conditions:** fn(mm/rev) = 0.1~0.45, ap (mm) = 0.5~5.0

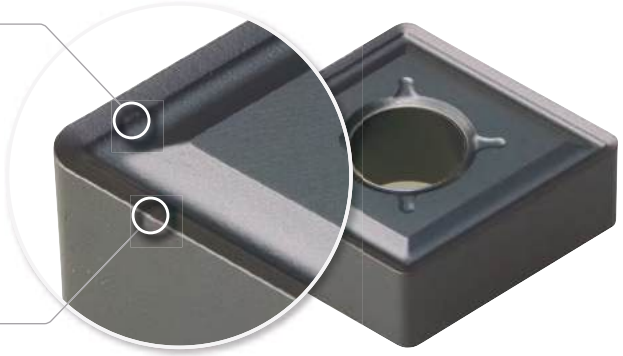
Features of VP3 chip breaker

Chip pocket design leading to a R-shaped cutting edge

- Creates a stepped space between edge and land to make smooth chip flow at low and high depth of cuts

High-positive blade design / Wide land

- Minimize heat concentration at high depth of cut
- Improves stability in interrupted machining of a tough workpiece



VP4 Chip Breaker [For roughing]

- The 1st recommended chip breaker for machining Inconel with high strength and high heat resistance at high temperatures.
- Rough machining stability resulting from reinforced cutting edges and wide chip pockets

Features of VP4 chip breaker

Rake angle design resistant to high hardness cutting

- Reinforces cutting edges and prevents notch wear in rough surface machining
- Prevents chipping in interrupted cutting

Wide chip pockets

- Reduce cutting loads and improve stability even at high depth of cut in roughing

Positive insert

FP Chip Breaker [For chip control in finishing]

- Chip breaker applied on one side of insert controls chip in mild steel machining with low depth of cut
- Chip control in poor machining (with lower depth of cut than nose R, in machining minor cutting edge and in back cutting)
- Decreased cutting load and excellent surface finish due to 3-dimensional cutting edge and side rake angle

Features of FP chip breaker

Semicircle-shaped bump

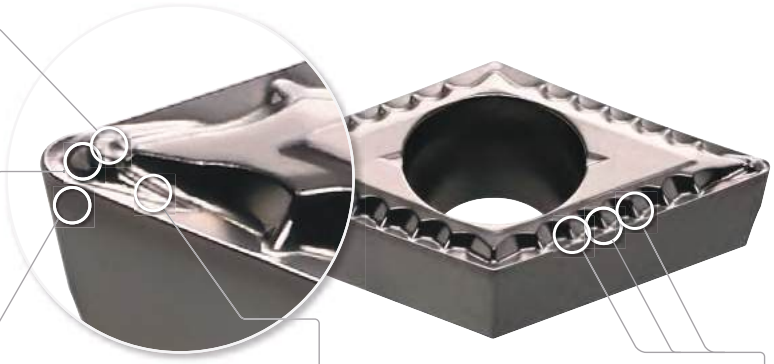
- Enhanced chip control in low depth of cut machining
- Advanced chip control in machining of minor cutting edge
- Improved chip control in machining with lower depth of cut than nose R

Concave form of semicircle-shaped bump

- Better chip curling in mild steel machining
- Enhanced chip control in low depth of cut and low feed machining

3-dimensional side rake angle

- Ensuring surface finish and guiding chip to right direction



Assistant bump on flank surface

- Better chip curling in high depth of cut and low feed machining
- Preventing chip twist

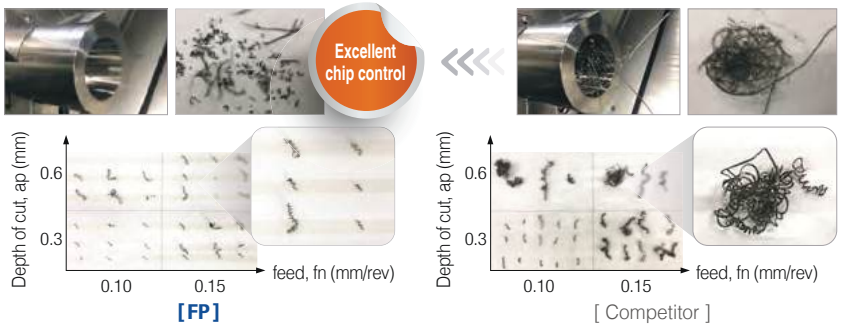
Continuous bump on flank surface

- Cutting long chip

Performance evaluation

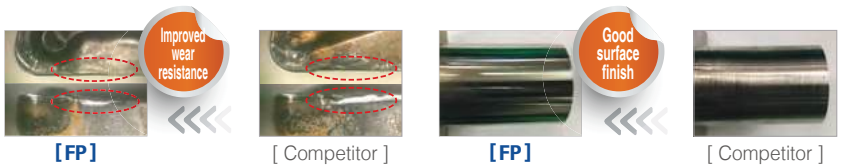
Chip control

Workpiece	Mild steel (SM20C), Ø40 Internal machining
Cutting conditions	vc (m/min) = 200, n (rpm) = 1,600, fn (mm/rev) = 0.1~0.15, ap (mm) = 0.5, wet
Tools	Insert : CCMT09T304-FP (NC3215) Holder : S16M-SCLCR-M09

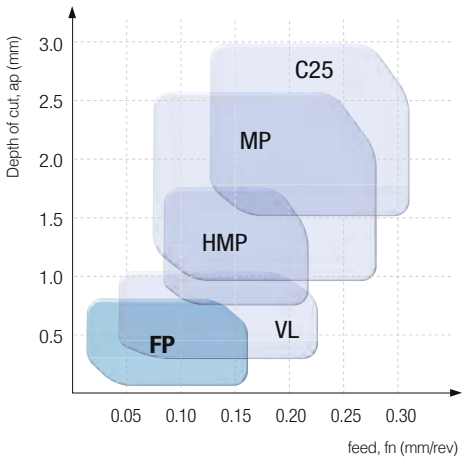


Surface finish

Workpiece	Mild steel (SM20C), Ø30 External machining
Cutting conditions	vc (m/min) = 200, n (rpm) = 2,000, fn (mm/rev) = 0.08, ap (mm) = 0.8, wet
Tools	Insert : CCMT09T304-FP (NC3215) Holder : SCLCR1616-M09

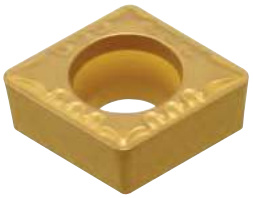


Application range



Positive insert

VL Chip Breaker [For finishing]



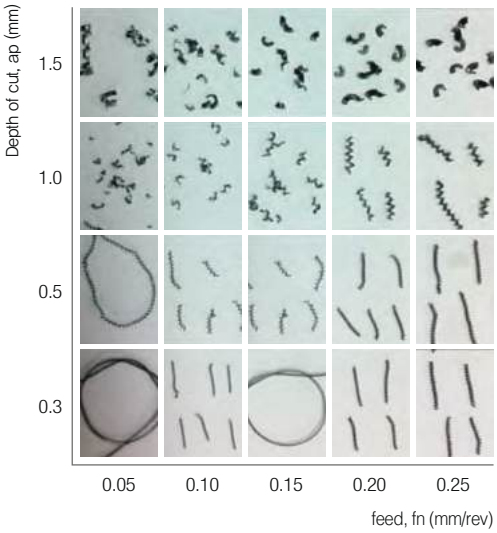
- The sharp flank surface and the chip breaker design significantly improve chip control when machining tough materials such as low carbon steel, pipe steel, and iron plates
- Sharp cutting edges reduce cutting resistance and provide excellent chip control at low depth of cuts, leading to stable machining on automated production lines

Features of VL chip breaker

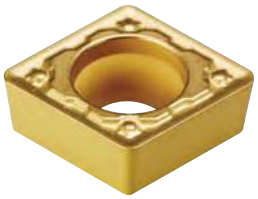
- **Sharp cutting edges**
  - High rake cutting edges provide improved surface finishes
  - Low cutting resistance reduces cutting heat
- **Step rear rake angle**
  - Stable chip control regardless of varying feed rates
  - Excellent machinability even when machining mild workpieces

Chip control test

Workpiece	SCM440(Alloy steel), Ø50, Internal diameter turning
Cutting conditions	vc = 250 m/min, ap = 0.3~1.5 mm, fn = 0.05~0.25 mm/rev
Tools	CCMT09T304-VL



MP Chip Breaker [For medium to finishing]



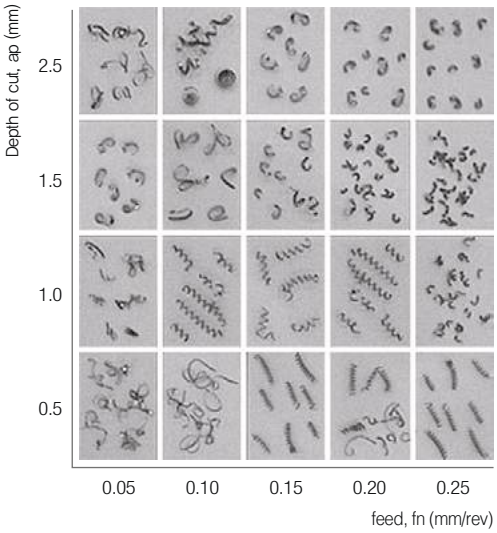
- For continuous cutting of forged steel at high feed
- Turning insert for internal Turning insert for machining internal components of automobile

Features of MP chip breaker

- **Three-dimensional 2 step chip breaker**
  - Stable chip control in unstable internal machining
  - Prevents chip blocking at internal diameter at varying depth of cut and feed
- **Stronger cutting edge and wide chip pocket**
  - Increased chipping resistance in unstable internal machining

Chip control test

Workpiece	SCM440
Cutting conditions	vc = 200 m/min, ap = 0.5~2.5 mm, fn = 0.05~0.25 mm/rev
Tools	CCMT09T304-MP



Positive insert

FS Chip Breaker [For finishing]

- Chip breaker for ultra-precision automatic Swiss lathe machining (for lower depth of cut and lower feed cutting range than VP1 and MS)
- Available for various workpieces, P, M and S
- Reduced cutting load and good surface finish due to sharp cutting edge

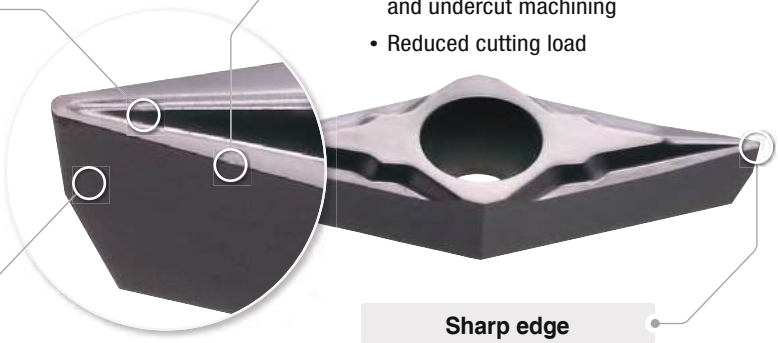
Features of FS chip breaker

Variable elevated triangular pyramid shape

- Applicable for various cutting range due to optimally designed chip breaker
- Enhanced chip evacuation function per variation of cutting depth
- Enhanced chip control with low depth of cut
- Lowered cutting load in high feed machining

Side grinding

- Periphery grinding G class
- High precision grinding



Side high rake angle

- Enhanced chip evacuation in deep grooving and undercut machining
- Reduced cutting load

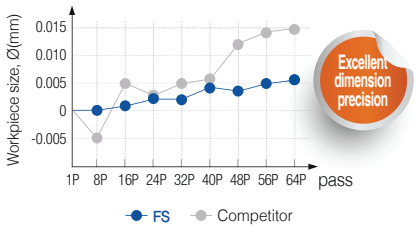
Sharp edge

- Reduced cutting resistance
- Improved chip control

Performance evaluation

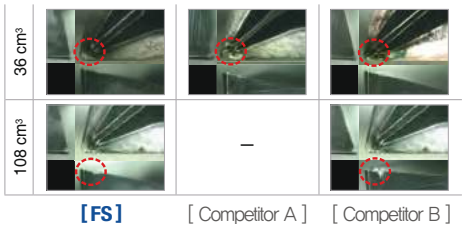
Workpiece size and surface finish

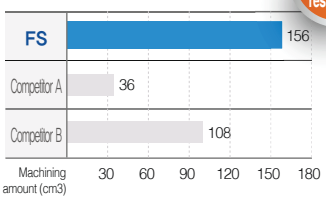
Workpiece	Stainless steel (STS406)
Cutting conditions	vc (m/min) = 80, n (rpm) = 1,000, fn (mm/rev) = 0.05, ap (mm) = 0.1, wet
Tools	Insert : VCGT110301-FS (PC8110) Holder : SVJCR1212-X11A



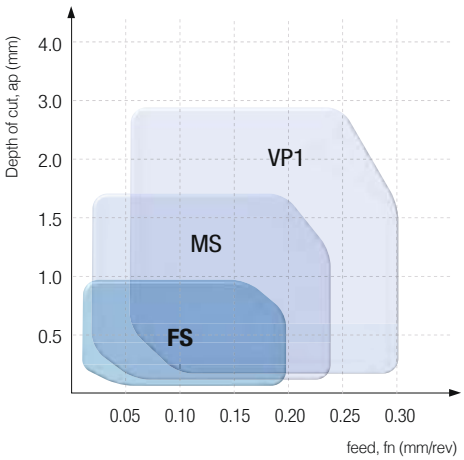
Wear resistance

Workpiece	Alloy steel (SCM440)
Cutting conditions	vc (m/min) = 100, n (rpm) = 1,000, fn (mm/rev) = 0.05, ap (mm) = 0.5, wet
Tools	Insert : CCGT09T304-FS (PC8110) Holder : SCLCR1212-X09A





Application range



Positive insert

MS Chip Breaker [For medium to finishing]

- Sharp cutting edge with welding resistance reducing the cutting heat is necessary for machining hard-to-cut materials
- Chip evacuation is increased in low to high feed cutting conditions

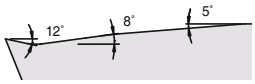
Features of MS chip breaker

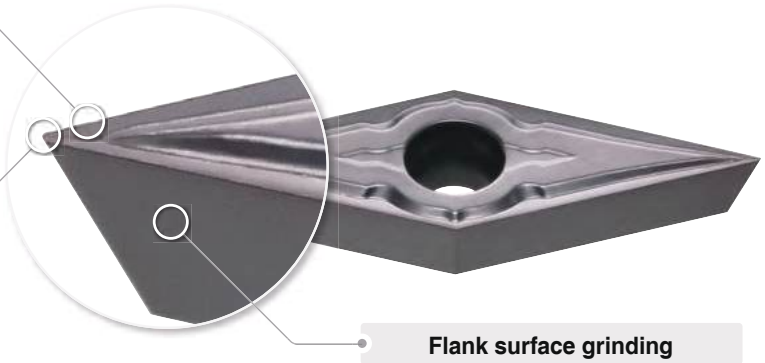
Sharp cutting edge

- Decreased cutting heat
- Minimized welding

2-level angle back area

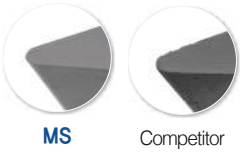
- Improved chip curl and chip control in low feed cutting range
- Better chip evacuation in high feed cutting range
- Reduced cutting resistance
- Protected cutting edge without chip blockage





Flank surface grinding

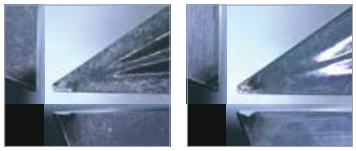
- G grade of periphery grinding
- Precise grinding



Performance evaluation

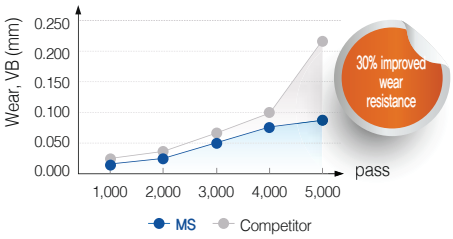
Wear resistance

Workpiece	Pure titanium (Grade4)
Cutting conditions	vc (m/min) = 100, n (rpm) = 3,500, fn (mm/rev) = 0.03, ap (mm) = 0.5, wet
Tools	Insert : VCGT1203008FN-MS (PC8110) Holder : SVJCR1212-X12A

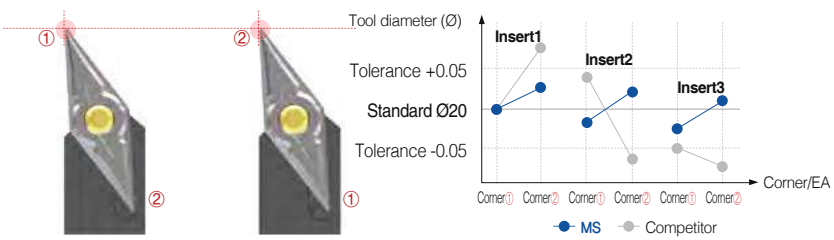


[MS] [Competitor]

▶ Ultra-fine substrate and high hardness coating ensure stable tool life.

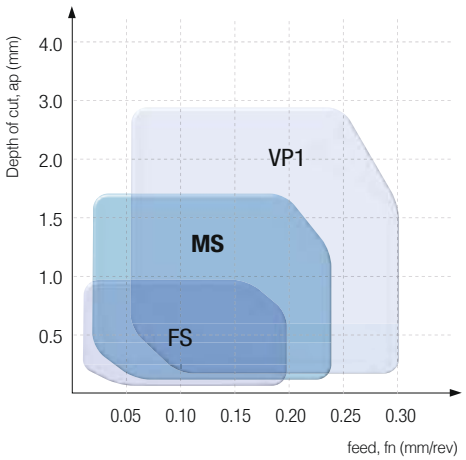


Dimension precision



▶ Changing tool offset in switching insert corners and items is not necessary using MS chip breaker due to tight dimension deviation management.

Application range



Positive insert

AM Chip Breaker [For medium Aluminum cutting]

- Preventing welding and chip jam with internal bridge structure enhancing smooth chip flow
- Balanced surface finish and toughness from nose R and 2 step side rake angle
- Preventing minor cutting edge fracture with divided bridge structure on the top surface bottom part blocks chips over minor cutting edge

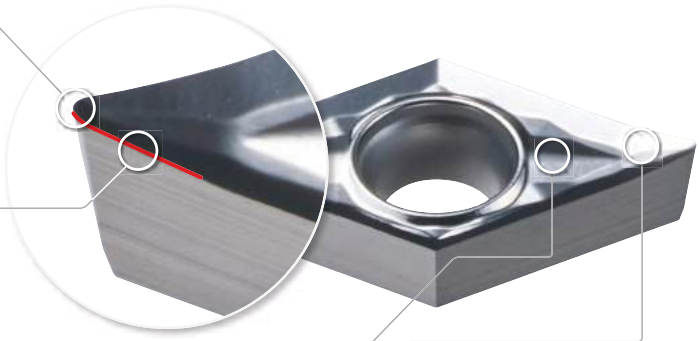
Features of AM chip breaker

Nose R and 2 step rake angle

- Balanced surface finish and toughness
- Smooth chip evacuation

Side 2 step rake angle

- Longer effective cutting edge
- Minimized cutting resistance
- Good surface finish



Trigonal knobs on the back

- Effective chip breaking in medium cutting
- Less cutting resistance due to smooth chip flow
- Directing flow of long chip for stable chip evacuation
- Protecting cutting edge with a structure preventing chip jam

Internal bridge

- Preventing welding and chip jam
- Smooth chip flow and chip control

Performance evaluation

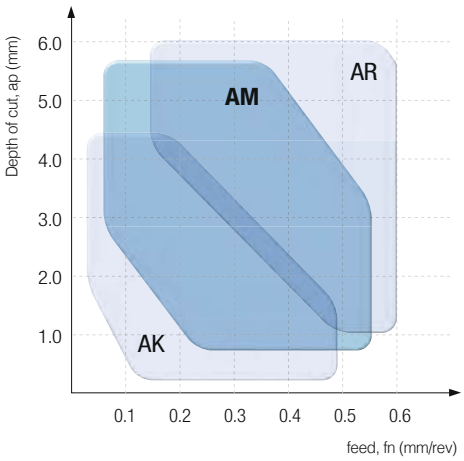
Welding and wear resistance

Workpiece	Aluminum (AlZn5.5MgCu)
Cutting conditions	vc (m/min) = 500, fn (mm/rev) = 0.25, ap (mm) = 0.5, wet
Tools	Insert : CCGT09T304-AM (H05) Holder : SCLCR2525-M09

[AM] [Competitor A] [Competitor B]

- Sharp cutting edge obtained good surface finish without any welding and chipping on the cutting edge
- Preventing overflowing chips with divided bridge structure

Application range



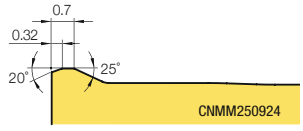
Heavy insert

Heavy Chip Breaker [For heavy duty machining]

- Chip breaker: HP, HL, HG, HV, HX / Grade : NC515H, NC520H, NC525H
- For various heavy turning as wind power, railway, power generation and shipbuilding industries, etc.
- Long tool life and good chip evacuation due to special designed chip breaker and optimal grade

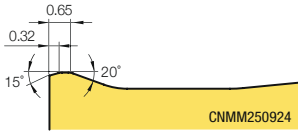
Features of Heavy chip breaker

HX



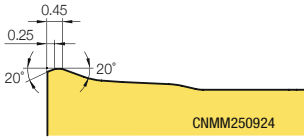
- Suitable for high interrupted machining due to strong cutting edge
- Increased tool life by smooth chip evacuation in high cutting condition

HV



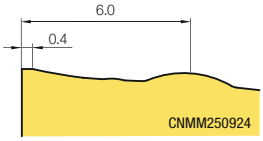
- 1st recommended chip breaker in vertical lathe machining
- Longer tool life in high feed cutting from improved chip flow reducing wear on the minor cutting edge

HG



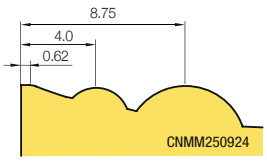
- Suitable for general horizontal lathe machining due to nicked cutting edge and low cutting resistance
- Good chip evacuation from chip flow in high feed condition

HL

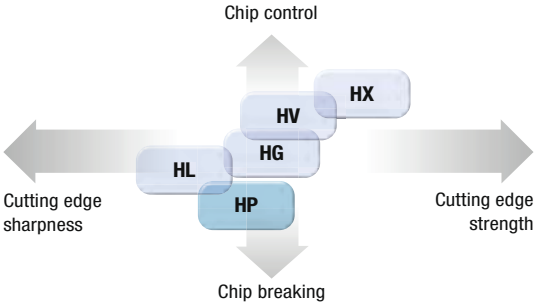


- For Stainless steel and low carbon steel machining with low cutting resistance and cutting edge
- Lower cutting resistance and good chip control in various cutting conditions

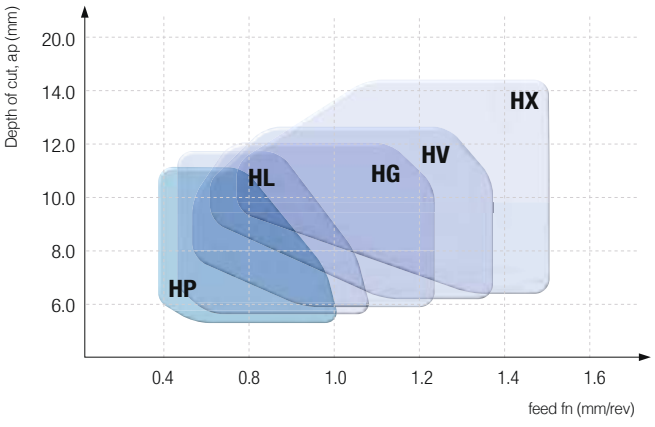
HP



- Suitable for Stainless steel and low carbon steel machining due to sharp cutting edge
- Recommended chip breaker for excellent chip control cutting by main rounded point bump and assisting bumps



Application range



Application range	Chip breaker	ap(mm)	fn(mm/rev)
High interrupted roughing	HX	4.5 ~ 18.0	0.6 ~ 1.5
Vertical lathe flange roughing	HV	4.0 ~ 13.0	0.5 ~ 1.4
Horizontal lathe shaft roughing	HG	3.0 ~ 13.0	0.4 ~ 1.2
Medium cutting for surface finish	HL	2.5 ~ 12.0	0.4 ~ 1.1
Good chip evacuation medium cutting and roughing	HP	2.5 ~ 11.0	0.4 ~ 1.0

Heavy insert

VH / VT Chip Breaker [For heavy duty machining]

- Heavy duty chip breaker suitable for Heavy machining in the shipbuilding and power plant industries
- Suitable for large vertical machines when machining shafts, rollers, rotors and optimal for the big flange machining

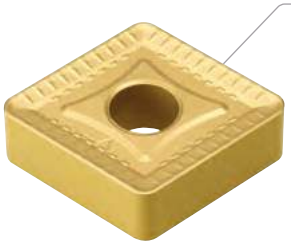
Features of VH chip breaker

[General]

For good chip control in heavy machining (comprehensive type)

- Designed from the study of heavy cutting mechanism
- Smooth chip control from the high rake angle
- Wider cutting edge land provides stronger cutting
- Unique cutting edge treatment provides smooth cutting
- Optimized chip pocket design provides smooth chip flow

Features of VT chip breaker

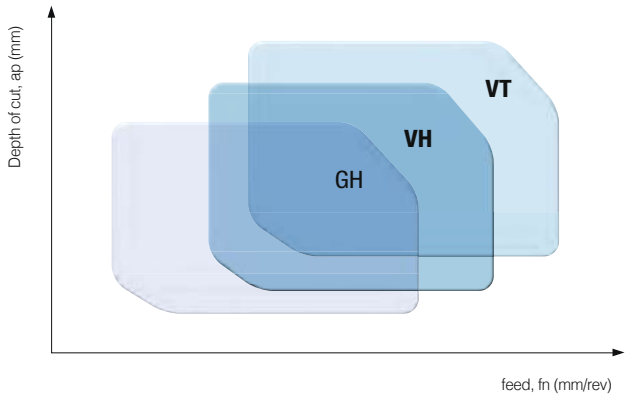


[Big depth, High feed]

For long tool life and stable cutting (higher feeds, big depth) in heavy machining

- Designed from the study of heavy cutting mechanism
- Strong edge design provides long and stable cutting
  (2 step rake angle of cutting edge)
- Varied cutting edge land strengthens the cutting edge
- The positioning of the chip breaking convex dot deflect the machining heat, optimizes inserts wear & absorb shock

Applications range of chip breakers

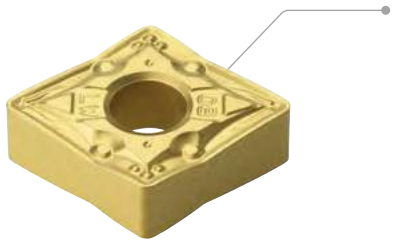


Wiper insert

LW/VW Chip Breaker [For high feed cutting]

- Improved productivity with higher feed rates and surface finishes
- Improved wear resistance and toughness

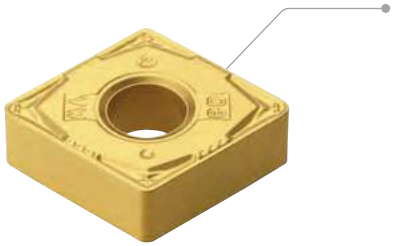
Features of LW chip breaker



[For medium cutting]

- **Curvilinear cutting edge** - Reduces cutting force
- **Cutting edge design able to handle deeper depth of cuts** - lower cutting load & reduces heat
- **Greater chip control at shallow depth of cut** - Chip pocket design improves smooth chip flow
- **For shallow depth cutting and low speed machining** - 3D design at the corner

Features of VW chip breaker

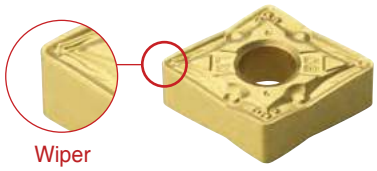


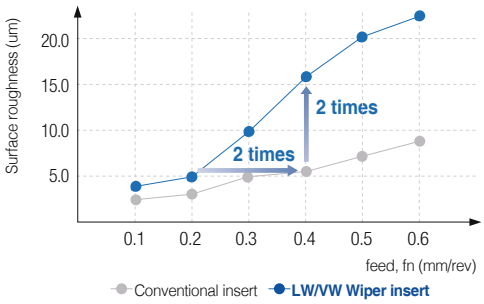
[Medium to finishing]

- **Excellent Finishing applications** - Excellent chip control
- **Insert design great for stable clamping** - Chip breaker designed close to the cutting edge
- **Similar cutting edge to C/B for medium** - strong cutting edge
- **3 Dimensional dot design on cutting corner**
  - reduces cutting force and good chip control at shallow depth of cut

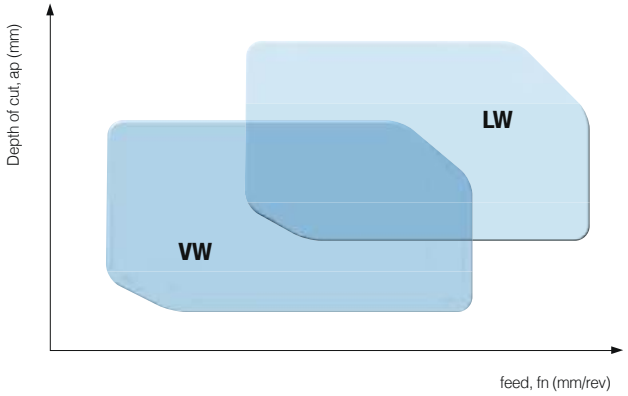
Wiper Insert

- High productivity
- Improved surface roughness
- High feed-reducing machining time
- Improved tool life due to reduce cutting force





Applications range

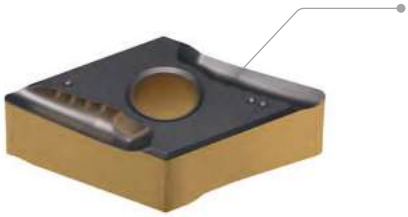


Surface insert

SR/SH Chip Breaker [For machining a shaft]

- Specialized for machining slender bars and thin walls
- High rake helix angle to reduce cutting resistance
- For machining steel and stainless steel

Features of SR chip breaker



[For finishing]

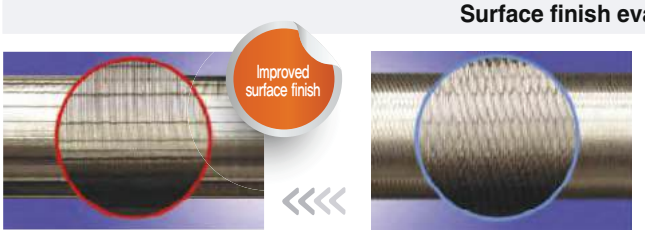
- The first recommended chip breaker for machining a shaft
- For continuous finishing
- Improved chip and heat evacuation due to high rake cutting edge and 3-dimensional shape
- Good surface finish
- Preventing fracture due to chamfering on the cutting edge

Features of SH chip breaker

[For medium cutting]

- Specialized for interrupted and medium cutting
- Efficient heat evacuation due to concave shaped back side of insert

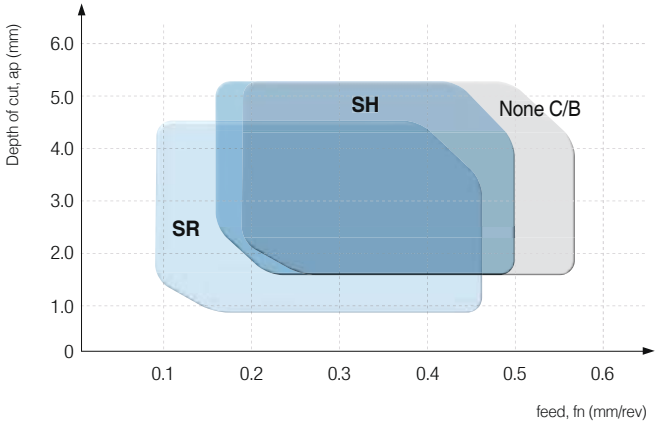
Surface finish evaluation



[SR chip breaker] [Competitor]

Machining	C/B	ap(mm)	fn(mm/rev)
Medium to rough cutting	None	1.5 ~ 5.0	0.20 ~ 0.55
Medium cutting	SH	1.5 ~ 5.0	0.15 ~ 0.50
Finish cutting	SR	1.0 ~ 4.5	0.12 ~ 0.45

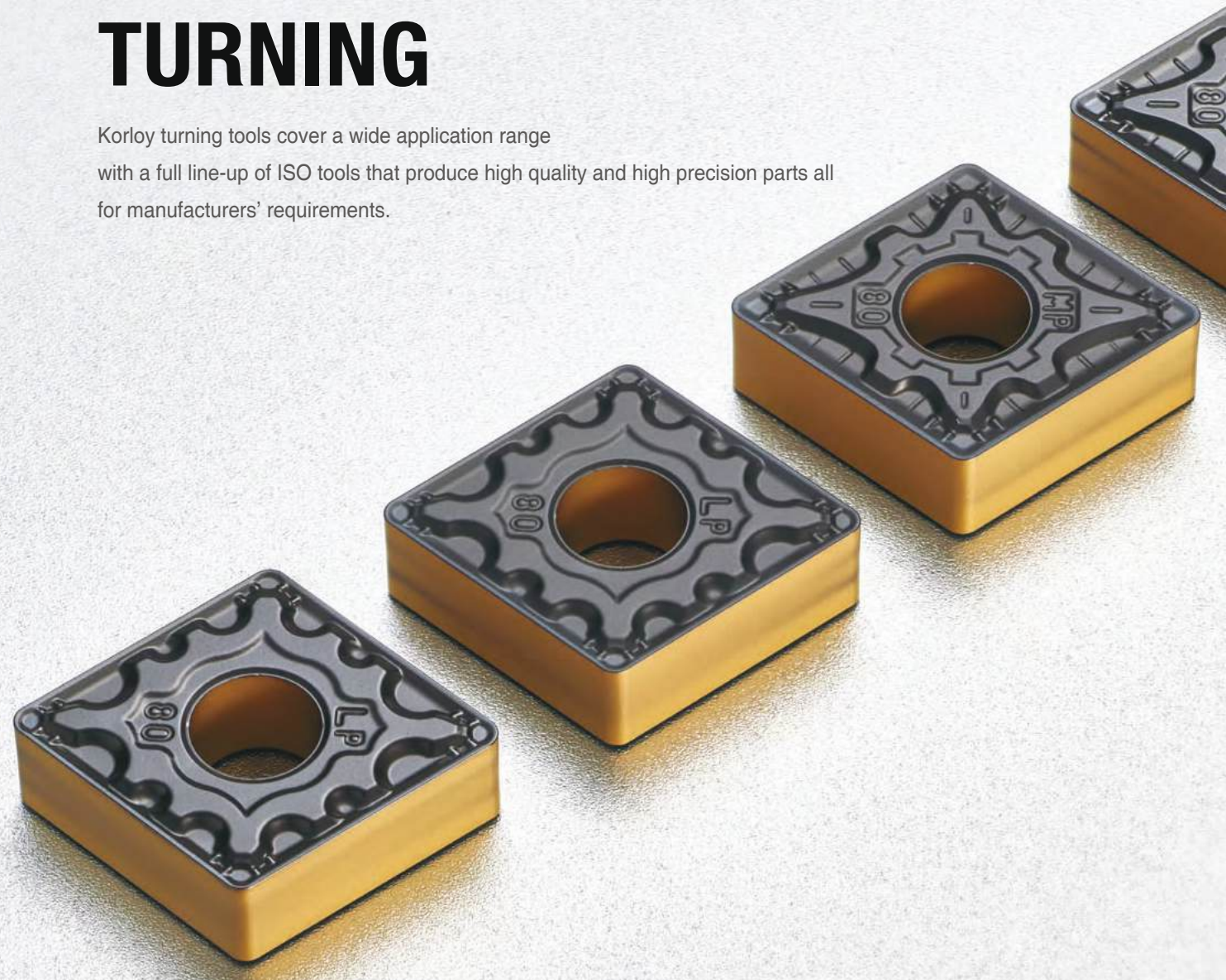
Applications range



PART 3

TURNING

Korloy turning tools cover a wide application range
with a full line-up of ISO tools that produce high quality and high precision parts all
for manufacturers' requirements.



Technical information for TURNING

Insert

B3 Turning Insert Code System
B5 Turning Inserts (Negative)
B44 Turning Inserts (Positive)
B73 Aluminum Insert
B82 cBN Inserts
B85 PCD Inserts

External Tool Holder

B86 External Tool Holder Code System (ISO)
B87 Index for External Holders
B90 Instruction of External Holders
B91 Double Clamp System
B96 Lever Lock System
B103 Wedge Clamp System
B105 Clamp on System
B107 Multi Lock System
B114 Screw on System

Boring Bar

B121 Boring Bar Code System (ISO)
B122 Index for Boring Bars
B124 Instructions of Boring Bar Assembly
B125 Double Clamp System
B127 Lever Lock System
B129 Clamp on System
B130 Multi Lock System
B132 Screw on System
B142 Compact Mini
B144 Sleeve

KHP Coolant

B145 Technical Information for KHP Coolant
B148 KHP Coolant
B150 Technical information for Auto Tools (KHP)
B152 Auto Tools (KHP)

Save Turn

B153 Technical Information for Save Turn
B154 Save Turn Inserts
B155 Save Turn Holders
B158 Save Turn Boring Bars

Auto Tools

B160 Auto Tools (ISO)
B172 Auto Tools (KHP)
B175 Auto Tools (Blade)
B178 Auto Tools (Multi Utility)
B181 Auto Tools (KGT/MGT)
B185 Auto Tools (MSB Plus)
B203 Auto Tools (MSB Tool)

Bearing Solutions

B210 Bearing Solutions
B216 Special Order Form for Bearing Inserts

HSK/KM Tooling System

B218 Index for HSK/KM Tooling System
B219 HSK Tooling System
B225 KM Tooling System

Cartridge

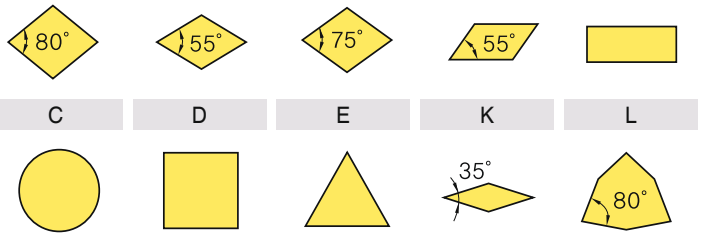
B230 Cartridge Code System (ISO)
B231 Index for Cartridges
B232 Clamp on System
B234 Screw on System

C N M G 12

1 Insert Shape | 2 Relief Angle | 3 Tolerance | 4 Cross Section Type | 5 Cutting Edge Length, Diameter of Inscribed Circle

1 Insert Shape

C N M G 12 04 08 - MP

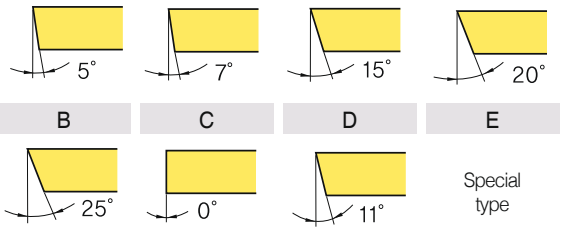


C D E K L

R S T V W

2 Relief Angle

C N M G 12 04 08 - MP



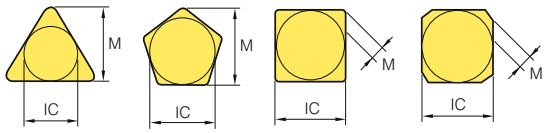
B C D E

F N P O

3 Tolerance

C N M G 12 04 08 - MP

IC: Inscribed circle
S: Thickness
M: Refer to figure



(mm)

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

* Sides are based on unground insert

Tolerance on C, H, R, T, W Insert Shape (Exceptional case)

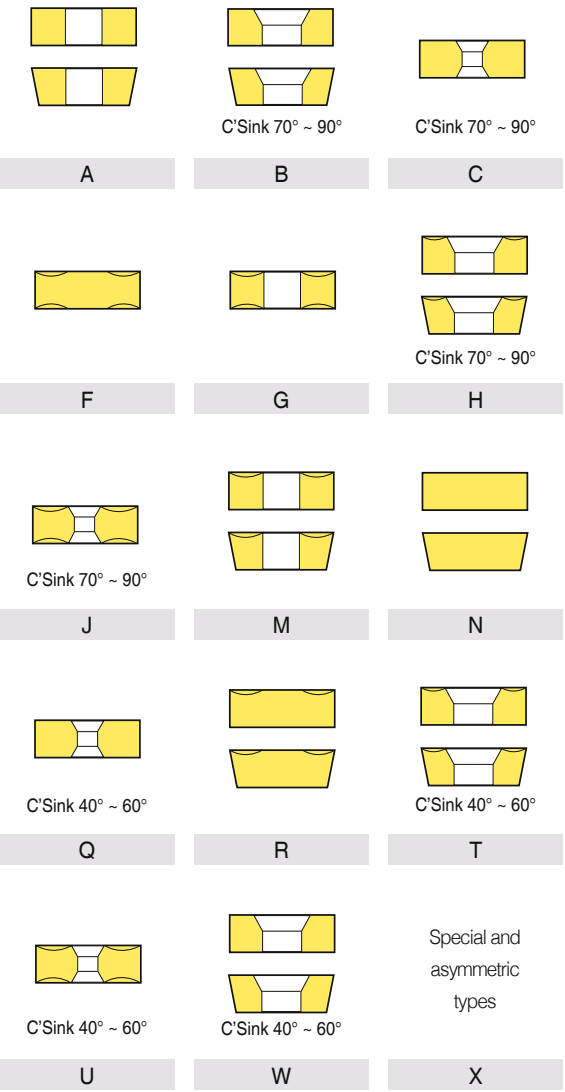
IC	Tolerance on IC		Tolerance on M	
	J, K, L, M, N	U	M, N	U
6.35	±0.05	±0.08	±0.08	±0.13
9.525	±0.05	±0.08	±0.08	±0.13
12.7	±0.08	±0.13	±0.13	±0.20
15.875	±0.10	±0.18	±0.15	±0.27
19.05	±0.10	±0.18	±0.15	±0.27
25.4	±0.13	±0.25	±0.18	±0.38

Tolerance on D Insert Shape (Exceptional case)

IC	Tolerance on IC	Tolerance on M
6.35	±0.05	±0.11
9.525	±0.05	±0.11
12.7	±0.08	±0.15
15.875	±0.10	±0.18
19.05	±0.10	±0.18

4 Cross Section Type

C N M G 12 04 08 - MP



A B C

F G H

J M N

Q R T

U W X

04 08 - MP

6 Height of Cutting Edge | 7 Nose "r" | 8 Chip Breaker for Turning

5 Cutting Edge Length, Diameter of Inscribed Circle

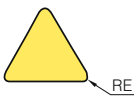
C N M G **12** 04 08 - MP

Symbol							Inch	IC
C	D	S	T	R	V	W		
Metric								
03	04	03	06	03	-	02	1.2(5)	3.97
04	05	04	08	04	08	S3	1.5(6)	4.76
05	06	05	09	05	09	03	1.8(7)	5.56
-	-	-	-	06	-	-	-	6.00
06	07	06	11	06	11	04	2	6.35
08	09	07	13	07	13	05	2.5	7.94
-	-	-	-	08	-	-	-	8.00
09	11	09	16	09	16	06	3	9.525
-	-	-	-	10	-	-	-	10.00
11	13	11	19	11	19	07	3.5	11.11
-	-	-	-	12	-	-	-	12.00
12	15	12	22	12	22	08	4	12.70
14	17	14	24	14	24	09	4.5	14.29
16	19	15	27	15	27	10	5	15.875
-	-	-	-	16	-	-	-	16.00
17	21	17	30	17	30	11	5.5	17.46
19	23	19	33	19	33	13	6	19.05
-	-	-	-	20	-	-	-	20.00
22	27	22	38	22	38	15	7	22.225
-	-	-	-	25	-	-	-	25.00
25	31	25	44	25	44	17	8	25.40
32	38	31	54	31	54	21	10	31.75
-	-	-	-	32	-	-	-	32.00

( ) Symbol for small size insert

7 Nose "r"

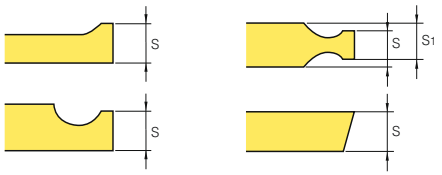
C N M G 12 04 **08** - MP



Symbol		Nose "r"	
Metric	Inch	Metric	Inch
003	0.1	0.03	0.0012
005	0.13	0.05	0.002
01	0.2	0.1	0.004
02	0.5	0.2	0.008
04	1	0.4	1/64
08	2	0.8	1/32
12	3	1.2	3/64
16	4	1.6	1/16
20	5	2.0	5/64
24	6	2.4	3/32
28	7	2.8	7/64
32	8	3.2	1/8
00	-	Round insert (Inch)	
M0	-	Round insert (Metric)	

6 Height of Cutting Edge

C N M G 12 **04** 08 - MP



Symbol		Height of Cutting Edge (S)	
Metric	Inch	mm	Inch
01	1(2)	1.59	1/16
T0	1.125	1.79	9/128
T1	1.2	1.98	5/64
02	1.5(3)	2.38	3/32
T2	1.75	2.78	7/64
03	2	3.18	1/8
T3	2.5	3.97	5/32
04	3	4.76	3/16
05	3.5	5.56	7/32
06	4	6.35	1/4
07	5	7.94	5/16
09	6	9.52	3/8
11	7	11.11	7/16
12	8	12.70	1/2

( ) Symbol for small size insert

8 Chip Breaker for Turning

C N M G 12 04 08 - **MP**

Negative Insert Chip Breaker

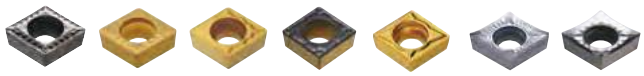
VL VF VB VC VQ VW LW

VM VR GH VH VT SR B25

HA HM GR VP1 VP2 VP3 VP4

LP MP MM RM MK RK CP

Positive Insert Chip Breaker

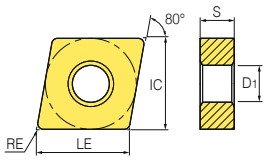


FP VL HMP MP C25 AK AM

AR FS MS VP1

CN○○

Rhombic 80° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	9.525	0.4~0.8	3.18	9.672	3.81
12	12.7	0.4~1.2	4.76	12.896	5.16
16	15.875	0.8~1.2	6.35	16.120	6.35

Workpiece

		Machining types
Steel	P	● Continuous cutting
Stainless steel	M	⬬ General cutting
Cast iron	K	✱ Interrupted cutting
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	
Hardened steel	H	

Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3215P	NC3225	NC3225P	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	H01	H05	fn (mm/rev)	ap (mm)
Finishing	VB	CNMG	120404-VB	●	●	●	●		●		●						●													0.15~0.35	0.30~2.00
			120408-VB	●	●	●	●	●	●		●					●	●												0.15~0.45	0.50~2.00
			120412-VB						●		●					●	●												0.20~0.50	0.50~2.00
Finishing	VF	CNMG	090304-VF								●		●																	0.07~0.30	0.50~1.50
			090308-VF																											0.10~0.30	0.50~1.50
			120404-VF		●								●				●													0.07~0.30	0.50~1.50
			120408-VF														●													0.10~0.40	0.50~1.50
			120412-VF																											0.10~0.50	0.60~1.50
Finishing	VL	CNMG	120404-VL	●	●												●													0.05~0.25	0.10~1.00
			120408-VL	●				●	●		●						●													0.10~0.35	0.20~1.50
			120412-VL						●																					0.10~0.35	0.20~1.50
Medium to finishing	LP	CNMG	090304-LP																											0.07~0.30	0.30~1.50
			090308-LP								●																			0.10~0.30	0.30~1.50
			120404-LP						●		●						●													0.10~0.35	0.30~2.00
			120408-LP						●		●						●													0.10~0.40	0.50~2.50
			120412-LP						●		●																			0.13~0.45	0.80~3.00
Medium to finishing	CP	CNMG	090304-CP																											0.08~0.30	0.40~3.00
			090308-CP																											0.10~0.30	0.40~3.00
			090404-CP																											0.08~0.30	0.40~3.00
			090408-CP																											0.10~0.30	0.40~3.00
			120404-CP					●	●	●		●																		0.10~0.35	0.50~3.50
			120408-CP					●	●	●		●				●														0.12~0.35	0.50~3.50
			120412-CP					●	●	●		●				●														0.13~0.35	0.80~3.50
			160608-CP					●	●	●		●																		0.15~0.40	0.80~4.50
			160612-CP					●	●	●		●																		0.18~0.40	1.00~4.50
Medium to finishing	VC	CNMG	120404-VC					●	●		●						●													0.10~0.35	0.30~2.00
			120408-VC					●	●		●					●	●													0.15~0.40	0.50~3.00
			120412-VC						●		●					●														0.15~0.45	0.50~3.00

● : Stock item

External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCBNR/L	B91	PCBNR/L	B96	MCKNR/L	B107
DCKNR/L	B91	PCKNR/L	B96	MCLNR/L	B107
DCLNR/L	B91	PCLNR/L	B97	MCMNN	B107
				MCRNR/L	B108

KHP Coolant	
TH	Page
PCLNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCLNR/L	B125	PCLNR/L	B127	MCLNR/L	B130

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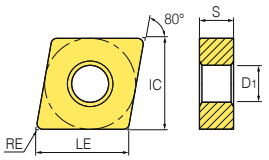
Rhombic 80° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	9.525	0.4~1.2	3.18	9.672	3.81
12	12.7	0.4~1.6	4.76	12.896	5.16
16	15.875	0.8~1.6	6.35	16.120	6.35
19	19.05	0.8~1.6	6.35	19.344	7.93

Workpiece		
Steel	P	● ✱ ● ● ● ● ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱
Stainless steel	M	✱ ✱ ✱ ✱ ● ● ● ✱ ✱ ✱ ✱ ✱ ● ● ●
Cast iron	K	● ✱ ● ● ✱ ✱ ✱ ● ● ✱ ✱ ● ● ● ●
Non-ferrous metal	N	● ●
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ● ● ✱ ● ●
Hardened steel	H	● ● ● ●

Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Medium cutting	HM	CNMG	090304-HM																											0.12~0.40	0.50~3.80
			090308-HM																											0.15~0.40	0.80~3.80
			120404-HM							●	●	●														●				0.05~0.30	0.90~5.00
			120408-HM							●	●	●									●					●				0.10~0.50	1.00~5.00
			120412-HM						●																	●				0.18~0.50	1.00~5.00
			190612-HM								●																			0.13~0.60	1.30~7.00
Medium cutting	MP	CNMG	090304-MP						●	●					●				●											0.10~0.40	0.40~3.80
			090308-MP						●	●					●				●											0.15~0.40	0.50~4.00
			090312-MP																											0.15~0.50	0.80~4.20
			090404-MP																											0.10~0.40	0.40~3.80
			090408-MP																											0.15~0.40	0.50~4.00
			090412-MP																											0.15~0.50	0.80~4.20
			120404-MP					●	●	●			●		●	●		●	●	●				●	●					0.10~0.40	0.40~4.00
			120408-MP					●	●	●		●	●	●	●	●		●	●	●			●	●	●					0.15~0.45	0.50~4.50
			120412-MP					●	●	●				●	●				●	●			●	●						0.15~0.50	0.80~5.00
			120416-MP					●	●	●				●																0.28~0.55	1.00~5.00
			160608-MP						●	●					●					●										0.15~0.50	0.50~7.00
			160612-MP						●	●					●			●		●										0.18~0.60	0.80~7.00
			160616-MP						●	●					●															0.15~0.60	1.00~7.00
			190608-MP								●																			0.15~0.60	0.50~8.50
			190612-MP								●																			0.18~0.60	0.80~8.50
			190616-MP															●	●											0.20~0.60	1.00~8.50
Medium cutting	VM	CNMG	090304-VM																											0.05~0.30	0.90~3.50
			090308-VM								●	●																		0.10~0.45	1.00~3.50
			120404-VM	●	●						●	●			●						●	●				●				0.05~0.30	0.90~5.00
			120408-VM	●	●					●	●	●			●						●	●		●		●				0.10~0.50	1.00~5.00
			120412-VM								●	●			●						●			●						0.13~0.60	1.30~5.00
			120416-VM												●															0.20~0.60	1.50~5.50
			160608-VM												●															0.10~0.50	1.00~6.70
			160612-VM																											0.13~0.60	1.30~6.70
			190608-VM									●																		0.13~0.65	1.30~7.00
			190612-VM												●															0.15~0.70	1.50~7.00
			190616-VM																											0.18~0.75	1.80~7.00

● : Stock item

External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCBNR/L	B91	PCBNR/L	B96	MCKNR/L	B107
DCKNR/L	B91	PCKNR/L	B96	MCLNR/L	B107
DCLNR/L	B91	PCLNR/L	B97	MCMNN	B107
				MCRNR/L	B108

KHP Coolant	
TH	Page
PCLNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCLNR/L	B125	PCLNR/L	B127	MCLNR/L	B130

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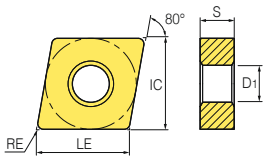
Rhombic 80° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	9.525	0.4~1.2	3.18	9.672	3.81
12	12.7	0.4~1.2	4.76	12.896	5.16
16	15.875	0.8~1.2	6.35	16.120	6.35
19	19.05	0.4~2.4	6.35	19.344	7.93
25	25.4	2.4	9.52	25.792	9.12

Workpiece			Machining types
Steel	P	● ✱ ● ● ● ● ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ●	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ● ● ● ● ● ✱ ✱ ● ● ● ● ●	● General cutting
Cast iron	K	● ✱ ● ● ✱ ✱ ● ● ✱ ✱ ✱ ✱ ● ●	✱ Interrupted cutting
Non-ferrous metal	N	● ●	
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ● ● ✱ ● ●	
Hardened steel	H	● ● ● ● ●	

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium to roughing	B25	CNMG	120404-B25		●				●		●			●							●								0.17~0.45	1.00~5.00
			120408-B25	●	●				●	●	●	●	●		●						●		●		●				0.23~0.60	1.50~5.00
			120412-B25						●	●		●			●														0.25~0.60	2.00~5.00
			160608-B25						●	●		●			●														0.25~0.60	2.00~6.50
			160612-B25						●	●					●														0.27~0.60	2.00~6.50
			160616-B25						●	●					●														0.27~0.60	2.00~6.50
			190604-B25									●			●														0.20~0.45	3.00~8.00
			190608-B25						●	●	●	●			●														0.25~0.60	3.00~8.00
			190612-B25						●	●	●	●			●						●	●		●					0.30~0.60	3.00~8.00
			190616-B25						●	●																			0.23~0.70	3.00~8.00
Roughing	GR	CNMG	120408-GR						●	●	●	●	●	●	●	●	●												0.20~0.50	1.00~7.00
			120412-GR							●	●	●	●	●	●	●	●												0.25~0.50	1.30~7.00
			120416-GR											●															0.25~0.60	1.80~6.00
			160608-GR						●	●	●	●	●																0.20~0.70	1.00~8.00
			160612-GR						●	●	●	●	●			●	●												0.25~0.70	1.30~8.00
			160616-GR						●	●	●	●	●																0.25~0.75	1.80~8.00
			190608-GR								●	●	●		●														0.20~0.70	1.70~10.00
			190612-GR						●	●	●	●	●		●	●													0.30~0.75	1.70~10.00
			190616-GR						●	●	●	●	●		●														0.30~0.80	1.80~10.00
			190624-GR								●	●	●		●														0.35~0.85	2.00~12.00
			250724-GR																										0.40~1.00	2.30~15.00
			250924-GR								●	●	●		●														0.40~1.00	2.30~15.00
Medium to finishing	VQ	CNMG	090304-VQ																										0.05~0.30	0.50~3.50
			090308-VQ																										0.08~0.30	0.80~4.00
			090408-VQ												●														0.05~0.30	0.50~3.50
			090412-VQ																										0.08~0.30	0.80~4.00
			120404-VQ	●	●	●	●																						0.05~0.30	0.80~4.00
			120408-VQ	●	●	●	●																						0.08~0.40	0.80~4.00
			120412-VQ																										0.10~0.40	0.80~4.00
Medium cutting	MK	CNMG	120404-MK											●		●	●												0.05~0.30	0.90~4.00
			120408-MK											●		●	●												0.10~0.50	1.00~5.00
			120412-MK											●		●	●												0.13~0.60	1.30~5.00
			120416-MK											●															0.15~0.60	1.30~5.00
			160608-MK																										0.28~0.70	1.80~7.00
			160612-MK																										0.28~0.72	2.00~8.00
			160616-MK																										0.28~0.74	2.00~8.00
			190608-MK														●												0.33~0.78	2.50~9.00
			190612-MK														●												0.35~0.78	2.60~9.50
			190616-MK																										0.35~0.80	2.60~10.00

● : Stock item

External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCBNR/L	B91	PCBNR/L	B96	MCKNR/L	B107
DCKNR/L	B91	PCKNR/L	B96	MCLNR/L	B107
DCLNR/L	B91	PCLNR/L	B97	MCMNN	B107
				MCRNR/L	B108

KHP Coolant	
TH	Page
PCLNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCLNR/L	B125	PCLNR/L	B127	MCLNR/L	B130

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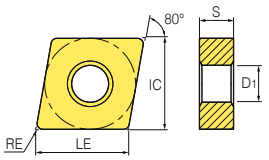
Rhombic 80° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
09	9.525	0.8	3.18	9.672	3.81
12	12.7	0.4~1.6	4.76	12.896	5.16
16	15.875	0.8~1.6	6.35	16.120	6.35
19	19.05	0.8~1.6	6.35	19.344	7.93

Workpiece			Machining types
Steel	P	● ✱ ● ◆	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ● ◆ ● ◆ ✱ ● ◆ ◆ ✱	◆ General cutting
Cast iron	K	● ✱ ● ◆ ✱ ✱ ● ◆ ✱ ✱ ● ◆	✱ Interrupted cutting
Non-ferrous metal	N	● ◆	
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ◆ ◆ ✱ ● ◆	
Hardened steel	H	● ◆ ◆ ● ◆	

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Roughing		CNMA	090308														●											0.10~0.30	0.50~3.00
			120404														●										●	0.15~0.60	1.00~5.00
			120408													●	●										●	0.15~0.60	1.00~6.00
			120412													●	●											0.15~0.70	1.50~6.00
			120416													●	●											0.20~0.80	2.00~6.00
			160608																									0.15~0.70	2.00~6.00
			160612														●											0.15~0.70	2.00~6.00
			160616														●											0.15~0.70	2.00~6.00
			190608														●											0.15~0.70	2.00~10.00
			190612														●											0.15~0.70	2.00~10.00
			190616													●	●											0.20~1.00	3.00~10.00
Roughing	RK	CNMG	120404-RK														●											0.20~0.47	1.30~6.00
			120408-RK													●	●											0.20~0.50	1.50~6.00
			120412-RK													●	●											0.28~0.53	1.80~6.00
			120416-RK														●											0.28~0.63	2.00~6.00
			160608-RK														●											0.28~0.70	1.80~7.00
			160612-RK													●	●											0.28~0.72	2.00~8.00
			160616-RK														●											0.28~0.74	2.00~8.00
			190612-RK														●											0.35~0.78	2.60~9.50
			190616-RK														●											0.35~0.80	2.60~10.00
Roughing	VR	CNMG	120404-VR																									0.20~0.50	1.00~6.50
			120408-VR																									0.25~0.55	1.20~7.00
			120412-VR																									0.30~0.60	1.50~7.00
			120416-VR																									0.35~0.65	1.70~7.00
			120508-VR																									0.25~0.55	1.20~7.00
			120512-VR																									0.30~0.60	1.50~7.00
			160612-VR																									0.35~0.70	2.00~8.00
			160616-VR																									0.35~0.75	2.20~8.00
			190612-VR						●	●																		0.35~0.70	2.00~10.00
			190616-VR						●	●																		0.35~0.75	2.20~10.00

● : Stock item

External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCBNR/L	B91	PCBNR/L	B96	MCKNR/L	B107
DCKNR/L	B91	PCKNR/L	B96	MCLNR/L	B107
DCLNR/L	B91	PCLNR/L	B97	MCMNN	B107
				MCRNR/L	B108

KHP Coolant	
TH	Page
PCLNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCLNR/L	B125	PCLNR/L	B127	MCLNR/L	B130

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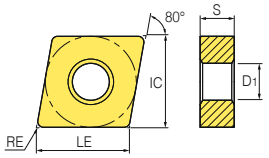
Rhombic 80° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	9.525	0.4~1.2	3.18	9.672	3.81
12	12.7	0.4~1.6	4.76	12.896	5.16
16	15.875	0.8~1.6	6.35	16.120	6.35
19	19.05	0.8~2.4	6.35	19.344	7.93
25	25.4	2.4	9.52	25.792	9.12

Workpiece

		CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05
Steel	P	●	✱	●	◒	●	◒	✱	✱	✱	✱	✱	✱						✱	✱							
Stainless steel	M									✱	✱		✱			●	◒	●	✱	✱	●	◒	◒	✱	✱		
Cast iron	K	●	✱	●	◒							✱	✱	●	◒				✱	✱						●	◒
Non-ferrous metal	N																									●	◒
Heat resistant alloy, Titanium alloy	S																●		✱	✱	●	◒	◒	✱		●	◒
Hardened steel	H																				●	◒	◒			●	◒

Machining types
- ● Continuous cutting
- ◒ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Medium cutting	MM	CNMG	090304-MM	0.08~0.35	0.50~5.00
			090308-MM	0.10~0.40	0.50~5.00
			090312-MM	0.12~0.45	0.50~5.00
			090404-MM	0.08~0.35	0.50~5.00
			090408-MM	0.10~0.40	0.50~5.00
			090412-MM	0.12~0.45	0.50~5.00
			120404-MM	0.10~0.40	0.50~5.50
			120408-MM	0.12~0.45	0.50~5.50
			120412-MM	0.15~0.60	0.50~5.50
			120416-MM	0.20~0.65	0.50~5.50
			160608-MM	0.12~0.45	0.50~7.00
			160612-MM	0.15~0.60	0.50~7.00
			160616-MM	0.18~0.65	0.50~7.00
			190608-MM	0.12~0.45	0.50~8.50
			190612-MM	0.15~0.60	0.50~8.50
			190616-MM	0.18~0.65	0.50~8.50
Roughing	RM	CNMG	120404-RM	0.10~0.50	2.00~6.00
			120408-RM	0.15~0.55	2.00~6.00
			120412-RM	0.20~0.60	2.00~6.00
			120416-RM	0.25~0.70	2.00~6.00
			160608-RM	0.15~0.55	2.00~8.00
			160612-RM	0.20~0.60	2.00~8.00
			160616-RM	0.25~0.70	2.00~8.00
			190608-RM	0.15~0.55	2.00~10.00
			190612-RM	0.20~0.60	2.00~10.00
			190616-RM	0.25~0.70	2.00~10.00
			250924-RM	0.40~1.20	4.00~14.00
Finishing	VP1	CNMG	120404-VP1	0.05~0.15	0.10~1.50
			120408-VP1	0.07~0.20	0.10~1.50
Finishing	VP1	CNGG	120402-VP1	0.01~0.10	0.10~1.00
			120404-VP1	0.05~0.15	0.10~1.50
			120408-VP1	0.07~0.20	0.10~1.50

● : Stock item

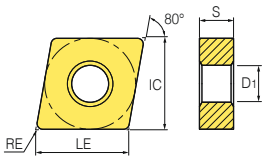
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCBNR/L	B91	PCBNR/L	B96	MCKNR/L	B107
DCKNR/L	B91	PCKNR/L	B96	MCLNR/L	B107
DCLNR/L	B91	PCLNR/L	B97	MCMNN	B107
				MCRNR/L	B108

KHP Coolant	
TH	Page
PCLNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCLNR/L	B125	PCLNR/L	B127	MCLNR/L	B130

CN○○

Rhombic 80° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
12	12.7	0.4~1.6	4.76	12.896	5.16
16	15.875	0.8~1.6	6.35	16.120	6.35
19	19.05	0.8~1.6	6.35	19.344	7.93

Workpiece			Machining types
	Steel	P	● Continuous cutting
	Stainless steel	M	⬌ General cutting
	Cast iron	K	✱ Interrupted cutting
	Non-ferrous metal	N	
	Heat resistant alloy, Titanium alloy	S	
	Hardened steel	H	

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium to finishing	VP2	CNMG	120404-VP2							●											●	●	●	●	●		●			0.05~0.30	0.10~3.00
			120408-VP2																		●	●	●	●	●		●			0.10~0.40	0.50~4.50
			160608-VP2																											0.12~0.45	0.80~5.00
			190608-VP2																											0.12~0.50	1.00~5.20
			190612-VP2																											0.15~0.50	1.20~5.50
			190616-VP2																											0.18~0.50	1.50~5.50
Medium cutting	VP3	CNMG	120404-VP3																		●	●	●	●	●		●			0.05~0.30	0.10~3.00
			120408-VP3																		●	●	●	●	●		●	●	●	0.10~0.40	0.50~4.50
			120412-VP3																		●	●		●	●			●		0.12~0.50	0.50~5.00
			120416-VP3																											0.25~0.45	1.00~4.00
			160608-VP3																											0.15~0.35	0.80~6.00
			160612-VP3																											0.20~0.40	1.00~6.00
			160616-VP3																											0.20~0.40	1.00~6.00
			190608-VP3																											0.20~0.50	1.00~7.00
			190612-VP3																											0.25~0.55	1.00~8.00
			190616-VP3																											0.30~0.60	1.00~8.00
Medium cutting	VP3	CNGG	120404-VP3																									●		0.05~0.30	0.10~3.00
			120408-VP3																					●				●		0.10~0.40	0.50~4.50
			120412-VP3																											0.12~0.50	0.50~5.00
Roughing	VP4	CNMG	120404-VP4																								●			0.15~0.35	1.00~4.00
			120408-VP4																						●		●			0.15~0.35	1.00~4.00
			120412-VP4																						●					0.20~0.40	1.00~4.00
			160608-VP4																											0.20~0.45	1.00~6.50
			160612-VP4																											0.25~0.50	1.50~6.50
			190608-VP4																						●					0.15~0.45	1.00~8.00
			190612-VP4																						●					0.20~0.50	1.20~8.50
Medium to finishing	HA	CNMG	120404-HA																		●			●		●		●		0.05~0.20	0.80~3.50
			120408-HA																		●			●		●		●		0.10~0.40	0.80~3.50
			120412-HA																							●				0.13~0.55	0.80~3.50
Finishing	VW	CNMG	120404-VW																											0.10~0.30	0.50~3.00
			120408-VW						●																					0.15~0.50	0.50~4.00
			120412-VW																											0.20~0.55	1.00~4.50

● : Stock item

External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCBNR/L	B91	PCBNR/L	B96	MCKNR/L	B107
DCKNR/L	B91	PCKNR/L	B96	MCLNR/L	B107
DCLNR/L	B91	PCLNR/L	B97	MCMNN	B107
				MCRNR/L	B108

KHP Coolant	
TH	Page
PCLNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCLNR/L	B125	PCLNR/L	B127	MCLNR/L	B130

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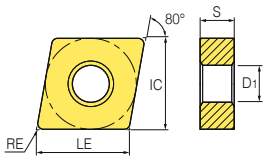
Rhombic 80° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
12	12.7	0.8~1.2	4.76	12.896	5.16
16	15.875	1.2~2.4	4.76~6.35	16.120	6.35
19	19.05	0.8~2.4	6.35	19.344	7.93
25	25.4	1.6~3.2	7.94~9.52	25.792	9.12

Workpiece

		Machining types
Steel	P	● Continuous cutting
Stainless steel	M	⬣ General cutting
Cast iron	K	✱ Interrupted cutting
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	
Hardened steel	H	

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC515H	NC520H	NC525H	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium cutting	LW [Wiper]	CNMG	120408-LW						●	●					●														0.15~0.60	1.00~5.00
			120412-LW							●																			0.20~0.70	1.00~6.00
Medium cutting	GR	CNMM	120408-GR																										0.20~0.50	1.00~7.00
			120412-GR																										0.25~0.50	1.30~7.00
			190612-GR									●	●																0.30~0.75	1.70~10.00
			190616-GR																										0.30~0.80	1.80~10.00
Heavy	HP	CNMM	190612-HP																										0.30~0.80	2.50~9.00
			190616-HP																	●									0.35~0.85	2.50~9.00
			190624-HP															●											0.40~0.90	2.50~9.00
			250924-HP																										0.40~1.00	2.50~11.00
	HL	CNMM	190612-HL										●																0.30~0.85	3.00~10.00
			190616-HL																	●									0.35~0.90	3.00~10.00
			190624-HL																										0.40~1.00	3.00~10.00
			250924-HL																										0.40~1.10	2.50~12.00
	GH	CNMM	120408-GH							●		●			●														0.30~0.60	2.50~8.00
			120412-GH							●	●	●																	0.30~0.70	2.50~8.00
			160412-GH																										0.30~0.70	2.50~8.00
			160424-GH																										0.30~1.20	2.50~8.00
			160612-GH									●																	0.30~0.90	2.50~8.00
			160616-GH																										0.30~1.20	2.50~8.00
			160624-GH																										0.30~1.50	2.50~8.00
			190608-GH												●														0.30~0.60	2.50~8.00
			190612-GH						●		●	●	●		●														0.30~0.70	3.00~8.00
			190616-GH						●		●	●	●		●														0.45~0.90	3.00~8.00
			190624-GH						●		●				●														0.55~1.20	4.00~9.00
			250716-GH																										0.50~1.00	4.50~10.00
			250724-GH								●																		0.55~1.20	5.00~12.00
			250924-GH						●		●	●	●		●														0.55~1.20	5.00~12.00

● : Stock item

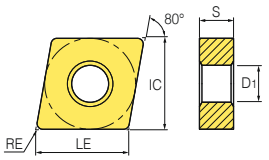
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCBNR/L	B91	PCBNR/L	B96	MCKNR/L	B107
DCKNR/L	B91	PCKNR/L	B96	MCLNR/L	B107
DCLNR/L	B91	PCLNR/L	B97	MCMNN	B107
				MCRNR/L	B108

KHP Coolant	
TH	Page
PCLNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCLNR/L	B125	PCLNR/L	B127	MCLNR/L	B130

CN○○

Rhombic 80° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
19	19.05	1.2~2.4	6.35	19.344	7.93
25	25.4	2.4	7.94~9.52	25.792	9.12

Workpiece			Machining types
Steel	P	● ✱ ● ◆	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ● ◆ ◆ ◆ ✱ ✱	◆ General cutting
Cast iron	K	● ✱ ● ◆ ✱ ✱ ● ◆ ✱ ✱ ● ◆	✱ Interrupted cutting
Non-ferrous metal	N	● ◆
Heat resistant alloy, Titanium alloy	S	✱ ✱ ● ◆ ◆ ✱
Hardened steel	H	● ◆ ◆ ● ◆

Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC515H	NC520H	NC525H	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Heavy	HG	CNMM	190612-HG															●											0.30~0.90	3.00~10.00
			190616-HG															●											0.35~0.95	3.00~10.00
			190624-HG										●																0.40~1.00	3.00~10.00
			250924-HG										●					●	●	●									0.40~1.20	3.50~13.00
			250932-HG																										0.50~1.20	3.50~13.00
	VT	CNMM	190612-VT						●			●																	0.60~1.00	6.00~13.00
			190616-VT						●																				0.60~1.10	6.00~13.00
			190624-VT						●																				0.60~1.60	7.00~13.00
			250724-VT						●																				0.75~1.60	7.00~17.00
	HV	CNMM	190616-HV																										0.45~1.05	4.00~11.00
			190624-HV																										0.50~1.10	4.00~11.00
			250924-HV										●																0.50~1.40	4.00~15.00
	VH	CNMM	190612-VH						●																				0.50~0.90	5.00~10.00
			190616-VH						●																				0.50~1.10	5.00~10.00
			190624-VH						●																				0.60~1.20	6.00~12.00
			250724-VH																										0.70~1.40	6.00~15.00
			250924-VH						●																				0.70~1.40	6.00~15.00
	HX	CNMM	190616-HX																										0.55~1.10	4.50~15.00
			190624-HX										●																0.60~1.20	4.50~15.00
			250924-HX																	●									0.60~1.50	4.50~18.00

● : Stock item

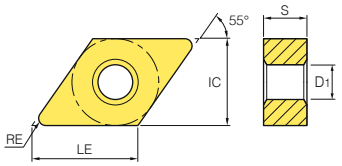
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCBNR/L	B91	PCBNR/L	B96	MCKNR/L	B107
DCKNR/L	B91	PCKNR/L	B96	MCLNR/L	B107
DCLNR/L	B91	PCLNR/L	B97	MCMNN	B107
				MCRNR/L	B108

KHP Coolant	
TH	Page
PCLNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DCLNR/L	B125	PCLNR/L	B127	MCLNR/L	B130

DN○○

Rhombic 55° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	9.525	0.2~0.8	4.76~5.56	11.628	3.81
15	12.7	0.4~1.2	4.76~6.35	15.504	5.16

Workpiece		
Steel	P	● ✱ ● ⬌ ● ⬌ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ⬌ ● ⬌
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ● ⬌ ● ⬌
Cast iron	K	● ✱ ● ⬌ ✱ ✱ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ● ⬌
Non-ferrous metal	N	● ⬌ ● ⬌
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ⬌ ⬌ ✱ ● ⬌ ● ⬌
Hardened steel	H	● ⬌ ⬌ ● ⬌

Machining types
- ● Continuous cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	Coated NC3215	Coated NC3225	Coated NC3120	Coated NC3030	Coated NC3235	Coated NC5320	Coated NC5330	Coated NC6310	Coated NC6315	Coated NC9115	Coated NC9125	Coated NC9135	Coated PC5300	Coated PC5400	Coated PC8105	Coated PC8110	Coated PC8115	Coated PC9030	Coated PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Finishing	VB	DNMG	110404-VB																											0.05~0.25	0.30~2.00
			150404-VB	●	●	●	●		●	●																				0.10~0.35	0.30~2.00
			150408-VB	●		●	●		●	●				●	●										●					0.15~0.45	0.50~2.00
			150412-VB						●	●				●																0.15~0.45	0.50~2.00
			150604-VB	●	●	●			●	●					●															0.10~0.35	0.30~2.00
			150608-VB	●		●	●	●	●	●				●	●						●									0.15~0.45	0.50~2.00
			150612-VB							●				●																0.20~0.50	0.50~2.50
Finishing	VF	DNMG	110402-VF																											0.05~0.20	0.20~1.00
			110404-VF		●										●															0.07~0.30	0.50~1.50
			110408-VF																											0.10~0.40	0.50~1.50
			150404-VF																											0.07~0.30	0.50~1.50
			150408-VF																											0.10~0.40	0.50~1.50
			150412-VF																											0.15~0.50	0.60~1.50
			150604-VF								●				●															0.13~0.30	0.50~1.50
			150608-VF								●				●															0.10~0.40	0.50~1.50
			150612-VF																											0.15~0.50	0.60~1.50
Finishing	VL	DNMG	110408-VL																											0.05~0.20	0.10~1.00
			150404-VL							●					●															0.05~0.25	0.10~1.50
			150408-VL						●	●					●															0.05~0.30	0.20~1.50
			150412-VL																											0.10~0.30	0.25~1.50
			150604-VL	●				●																						0.05~0.25	0.10~1.50
			150608-VL	●				●	●	●																				0.05~0.30	0.20~1.50
			150612-VL																											0.10~0.30	0.25~1.50
Medium to finishing	LP	DNMG	110402-LP																											0.06~0.30	0.25~1.20
			110404-LP						●	●																				0.07~0.30	0.30~1.50
			110408-LP																											0.10~0.40	0.30~1.50
			110504-LP																											0.07~0.30	0.30~1.50
			110508-LP																											0.10~0.40	0.30~1.50
			150404-LP						●	●																				0.10~0.35	0.30~2.00
			150408-LP						●	●																				0.10~0.40	0.50~2.50
			150412-LP																											0.13~0.45	0.80~3.00
			150604-LP						●	●					●															0.10~0.35	0.30~2.00
			150608-LP						●	●					●															0.10~0.40	0.50~2.50
			150612-LP						●	●																				0.13~0.45	0.80~3.00

● : Stock item

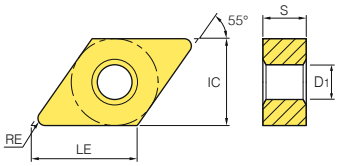
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDJNR/L	B92	PDJNR/L	B97	MDJNR/L	B108
		PDNNR/L	B98	MDNNN	B108
				MDQNR/L	B109

KHP Coolant	
TH	Page
PDJNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDUNR/L	B125	PDSNR/L	B127	MDUNR/L	B130
		PDUNR/L	B127		

DN○○

Rhombic 55° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	9.525	0.4~1.2	4.76~5.56	11.628	3.81
15	12.7	0.4~1.6	4.76~6.35	15.504	5.16

Workpiece			Machining types
Steel	P	● ✱ ● ⬌ ● ⬌ ⬌ ✱ ⬌ ✱ ⬌ ✱ ✱	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ● ⬌ ⬌ ✱ ● ⬌ ⬌ ✱ ⬌ ⬌ ✱	⬌ General cutting
Cast iron	K	● ✱ ● ⬌ ✱ ✱ ● ⬌ ● ⬌ ⬌ ⬌ ⬌	✱ Interrupted cutting
Non-ferrous metal	N	⬌ ⬌ ● ⬌ ⬌ ⬌ ✱ ⬌ ⬌
Heat resistant alloy, Titanium alloy	S	● ⬌ ⬌ ⬌ ✱ ⬌ ⬌
Hardened steel	H	● ⬌ ⬌ ⬌ ⬌

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	NC3215	NC3215P	NC3225	NC3225P	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC8105	PC8110	PC8115	PC9030	PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Medium to finishing	CP	DNMG	110404-CP																											0.08~0.30	0.40~3.00
			110408-CP																											0.10~0.30	0.40~3.00
			110504-CP																											0.08~0.30	0.40~3.00
			110508-CP																											0.10~0.30	0.40~3.00
			150404-CP							●		●																		0.10~0.35	0.50~3.50
			150408-CP							●		●				●														0.12~0.35	0.50~3.50
			150412-CP							●		●				●														0.13~0.35	0.80~3.50
			150604-CP							●		●																		0.10~0.35	0.50~3.50
			150608-CP							●		●				●														0.12~0.35	0.50~3.50
			150612-CP							●		●				●														0.13~0.35	0.80~3.50
Medium to finishing	VC	DNMG	150404-VC						●																					0.10~0.35	0.30~2.00
			150408-VC						●		●					●															0.15~0.40	0.50~3.00
			150412-VC						●		●					●															0.15~0.45	0.50~3.00
			150604-VC						●		●																				0.10~0.35	0.30~2.00
			150608-VC						●		●					●	●														0.15~0.40	0.50~3.00
			150612-VC						●		●					●															0.15~0.45	0.50~3.00
Medium cutting	HM	DNMG	110404-HM											●													●				0.05~0.50	0.80~4.00
			110408-HM																								●				0.10~0.50	1.00~4.00
			150404-HM								●																				0.05~0.30	0.90~5.00
			150408-HM										●																		0.10~0.50	1.00~5.00
			150604-HM										●	●					●								●				0.05~0.30	0.90~5.00
			150608-HM								●		●	●													●				0.10~0.50	1.00~5.00
			150612-HM											●																		0.18~0.50	1.00~5.00
Medium cutting	MP	DNMG	110404-MP						●		●						●					●	●									0.10~0.40	0.40~3.80
			110408-MP						●		●						●					●										0.15~0.40	0.50~4.00
			110412-MP																												0.15~0.50	0.80~4.20
			110504-MP																												0.10~0.40	0.40~3.80
			110508-MP																												0.15~0.40	0.50~4.00
			110512-MP																												0.15~0.50	0.80~4.20
			150404-MP						●		●						●					●	●		●						0.10~0.40	0.40~4.00
			150408-MP					●	●		●					●	●					●	●		●						0.15~0.45	0.50~4.50
			150412-MP					●	●		●					●															0.15~0.50	0.80~5.00
			150416-MP													●															0.15~0.50	0.85~5.00
			150604-MP					●	●		●				●		●	●		●	●	●		●							0.10~0.40	0.40~4.00
			150608-MP					●	●		●				●	●	●	●		●	●	●	●	●							0.15~0.45	0.50~4.50
			150612-MP					●	●		●					●	●				●			●							0.15~0.50	0.80~5.00
			150616-MP													●															0.15~0.55	0.85~5.00

● : Stock item

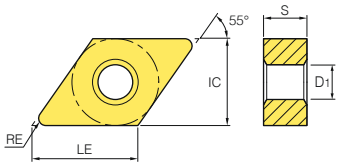
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDJNR/L	B92	PDJNR/L	B97	MDJNR/L	B108
		PDNNR/L	B98	MDNNN	B108
				MDQNR/L	B109

KHP Coolant	
TH	Page
PDJNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDUNR/L	B125	PDSNR/L	B127	MDUNR/L	B130
		PDUNR/L	B127		

DN○○

Rhombic 55° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	9.525	0.4~1.2	4.76~5.56	11.628	3.81
15	12.7	0.4~1.6	4.76~6.35	15.504	5.16

Workpiece		
Steel	P	● ✱ ● ● ● ● ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ● ● ✱ ✱ ● ● ● ✱ ✱ ● ●
Stainless steel	M	✱ ✱ ✱ ✱ ● ● ● ✱ ✱ ● ● ● ● ●
Cast iron	K	● ✱ ● ● ✱ ✱ ✱ ● ● ✱ ✱ ● ●
Non-ferrous metal	N	● ●
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ● ● ✱ ● ●
Hardened steel	H	● ● ●

Machining types
- ● Continuous cutting
- ● ● General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Medium cutting	VM	DNMG	110404–VM												●															0.05~0.30	0.90~4.00
			110408–VM								●				●															0.10~0.50	1.00~4.00
			110412–VM																											0.13~0.50	1.30~4.00
			150404–VM												●						●	●								0.05~0.30	0.90~5.00
			150408–VM		●							●			●						●	●								0.10~0.50	1.00~5.00
			150412–VM												●															0.13~0.60	1.30~5.00
			150604–VM	●	●						●	●			●						●					●				0.05~0.30	0.90~5.00
			150608–VM	●						●	●	●			●						●	●				●				0.10~0.50	1.00~5.00
			150612–VM												●						●									0.13~0.60	1.30~5.00
Medium to roughing	B25	DNMG	150404-B25												●															0.17~0.45	1.00~4.00
			150408-B25							●					●															0.17~0.55	1.50~4.00
			150412-B25												●															0.25~0.55	1.50~4.00
			150604-B25	●					●	●		●			●															0.17~0.55	1.50~4.00
			150608-B25	●					●	●		●			●											●				0.17~0.55	1.50~4.00
			150612-B25						●	●					●															0.25~0.55	1.50~4.00
Roughing	GR	DNMG	150408-GR						●			●		●																0.20~0.50	1.00~7.00
			150412-GR																											0.25~0.90	1.30~7.00
			150416-GR																											0.30~0.75	1.80~7.00
			150608-GR							●	●	●	●	●	●	●														0.20~0.50	1.00~7.00
			150612-GR							●		●	●	●																0.25~0.70	1.30~7.00
			150616-GR												●															0.20~0.75	1.80~7.00
Medium to finishing	VQ [Cermet]	DNMG	110404-VQ	●	●																									0.05~0.30	0.50~3.50
			110408-VQ		●																									0.08~0.40	0.80~4.00
			110412-VQ																											0.10~0.40	1.00~4.00
			110508-VQ																											0.08~0.40	0.80~4.00
			110512-VQ																											0.10~0.40	1.00~4.00
			150404-VQ	●	●	●																								0.05~0.30	0.80~3.50
			150408-VQ	●		●	●																							0.08~0.40	0.80~4.00
			150412-VQ																											0.10~0.40	0.50~4.20
			150604-VQ	●	●	●	●																							0.05~0.30	0.80~4.00
			150608-VQ	●	●	●																								0.08~0.40	0.80~4.00
			150612-VQ																											0.10~0.40	0.50~4.20

● : Stock item

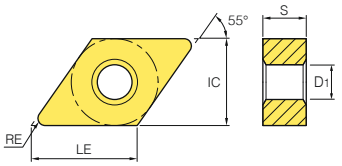
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDJNR/L	B92	PDJNR/L	B97	MDJNR/L	B108
		PDNNR/L	B98	MDNNN	B108
				MDQNR/L	B109

KHP Coolant	
TH	Page
PDJNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDUNR/L	B125	PDSNR/L	B127	MDUNR/L	B130
		PDUNR/L	B127		

DN○○

Rhombic 55° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	9.525	0.4~1.2	4.76~5.56	11.628	3.81
15	12.7	0.4~1.6	4.76~6.35	15.504	5.16
19	15.875	0.8	6.35	19.380	6.35

Workpiece			Machining types
Steel	P	● ✱ ● ◆	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ◆ ● ✱ ✱ ● ◆ ◆ ◆ ✱ ✱	◆ General cutting
Cast iron	K	● ✱ ● ◆ ✱ ✱ ● ◆ ✱ ✱ ● ◆ ●	✱ Interrupted cutting
Non-ferrous metal	N	● ◆
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ◆ ◆ ✱ ●
Hardened steel	H	● ◆ ◆ ●

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium cutting	MK	DNMG	150404-MK											●			●													0.05~0.30	0.90~5.00
			150408-MK											●			●													0.10~0.50	1.00~5.00
			150412-MK																											0.13~0.60	1.30~5.00
			150604-MK											●		●	●													0.05~0.30	0.90~5.00
			150608-MK											●		●	●													0.10~0.50	1.00~5.00
			150612-MK											●			●													0.13~0.60	1.30~5.00
Medium cutting		DNMA	110408																											0.17~0.45	0.80~3.00
			150404																											0.17~0.55	0.40~4.00
			150408																											0.25~0.55	0.80~4.00
			150412														●													0.25~0.65	0.50~4.00
			150604																											0.17~0.55	0.40~4.00
			150608														●													0.25~0.55	0.80~4.00
			150612														●													0.25~0.65	1.20~4.00
			190608																											0.30~0.80	2.50~13.00
Medium cutting	RK	DNMG	150408–RK																											0.15~0.50	1.50~5.00
			150412–RK														●													0.20~0.60	1.80~5.00
			150608–RK													●	●													0.15~0.50	1.50~5.00
			150612–RK														●													0.20~0.60	1.80~5.00
Medium cutting	VR	DNMG	150408–VR																											0.25~0.55	1.20~7.00
			150412–VR																											0.30~0.60	1.50~7.00
			150608–VR																											0.25~0.55	1.20~7.00
			150612–VR																											0.30~0.60	1.50~7.00
Medium cutting	MM	DNMG	110404-MM																							●				0.08~0.35	0.50~5.00
			110408-MM																●	●						●				0.10~0.40	0.50~5.00
			110412-MM																											0.12~0.45	0.50~5.00
			110504-MM																											0.08~0.35	0.50~5.00
			110508-MM																											0.10~0.40	0.50~5.00
			110512-MM																											0.12~0.45	0.50~5.00
			150404-MM																●		●					●				0.10~0.40	0.50~6.40
			150408-MM																●	●	●					●	●			0.12~0.45	0.50~6.40
			150412-MM																●											0.15~0.60	0.50~6.40
			150416-MM																											0.15~0.60	0.50~6.00
			150604-MM																●	●	●					●				0.10~0.40	0.50~6.40
			150608-MM															●	●	●	●				●	●	●			0.12~0.45	0.50~6.40
			150612-MM																●		●					●	●			0.15~0.60	0.50~6.40
			150616-MM																											0.18~0.65	0.50~8.00

● : Stock item

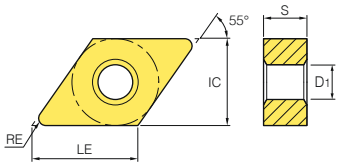
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDJNR/L	B92	PDJNR/L	B97	MDJNR/L	B108
		PDNNR/L	B98	MDNNN	B108
				MDQNR/L	B109

KHP Coolant	
TH	Page
PDJNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDUNR/L	B125	PDSNR/L	B127	MDUNR/L	B130
		PDUNR/L	B127		

DN○○

Rhombic 55° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
15	12.7	0.4~1.6	4.76~6.35	15.504	5.16

Workpiece		
Steel	P	● ✱ ● ⬌ ● ⬌ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ⬌ ✱
Stainless steel	M	✱ ✱ ✱ ✱ ● ⬌ ● ⬌ ✱ ● ⬌ ● ⬌ ✱ ✱
Cast iron	K	● ✱ ● ⬌ ✱ ✱ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ● ⬌
Non-ferrous metal	N	● ⬌
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ⬌ ● ⬌ ✱ ● ⬌
Hardened steel	H	● ⬌ ● ⬌ ● ⬌

Machining types
● Continuous cutting
⬌ General cutting
✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Roughing	RM	DNMG	150404-RM																		●									0.10~0.50	2.00~6.00
			150408-RM															●	●		●				●					0.15~0.55	2.00~6.00
			150412-RM																											0.20~0.60	2.00~6.00
			150416-RM																											0.25~0.70	2.00~6.00
			150604-RM																●						●					0.10~0.50	2.00~6.00
			150608-RM															●	●	●				●						0.15~0.55	2.00~6.00
			150612-RM																											0.20~0.60	2.00~6.00
			150616-RM																											0.25~0.70	2.00~6.00
Finishing	VP1	DNMG	150404-VP1																					●	●			●		0.05~0.15	0.10~1.50
			150408-VP1																					●	●					0.07~0.20	0.10~1.50
			150604-VP1																					●	●					0.05~0.15	0.10~1.50
			150608-VP1																					●	●					0.07~0.20	0.10~1.50
Finishing	VP1	DNGG	150404-VP1																											0.05~0.15	0.10~1.50
			150408-VP1																											0.07~0.20	0.10~1.50
			150604-VP1																											0.05~0.15	0.10~1.50
			150608-VP1																											0.07~0.20	0.10~1.50
Medium to finishing	VP2	DNMG	150404-VP2																		●	●		●	●					0.05~0.30	0.10~3.00
			150408-VP2																		●	●	●	●	●					0.10~0.40	0.50~4.50
			150604-VP2																		●		●	●	●			●		0.05~0.30	0.10~3.00
			150608-VP2							●											●	●	●	●	●					0.10~0.40	0.50~4.50
Medium to finishing	VP3	DNMG	150404-VP3																					●						0.05~0.30	0.10~3.00
			150408-VP3																		●			●	●					0.10~0.45	0.50~5.00
			150412-VP3																						●					0.12~0.50	0.50~5.00
			150604-VP3																		●	●		●	●					0.05~0.30	0.10~3.00
			150608-VP3																		●	●	●	●	●			●	●	0.10~0.45	0.50~5.00
			150612-VP3																		●			●	●					0.12~0.50	0.50~5.00
Medium cutting	VP3	DNGG	150404-VP3																				●							0.05~0.30	0.10~3.00
			150408-VP3																											0.10~0.45	0.50~5.00
			150412-VP3																											0.12~0.50	0.50~5.00
			150604-VP3																						●					0.05~0.30	0.10~3.00
			150608-VP3																					●						0.10~0.45	0.50~5.00
			150612-VP3																											0.12~0.50	0.50~5.00

● : Stock item

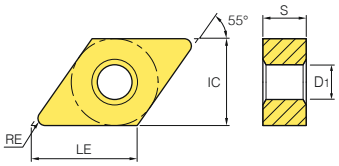
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDJNR/L	B92	PDJNR/L	B97	MDJNR/L	B108
		PDNNR/L	B98	MDNNN	B108
				MDQNR/L	B109

KHP Coolant	
TH	Page
PDJNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDUNR/L	B125	PDSNR/L	B127	MDUNR/L	B130
		PDUNR/L	B127		

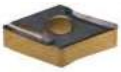
DN○○

Rhombic 55° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
15	12.7	0.4~1.2	4.76~6.35	15.504	5.16

Workpiece			Machining types
Steel	P	● ⧓ ● ⧗ ● ● ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓	● Continuous cutting
Stainless steel	M	⧓ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧗	⧗ General cutting
Cast iron	K	● ⧓ ● ⧗ ⧓ ⧓ ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ● ⧗	⧓ Interrupted cutting
Non-ferrous metal	N	● ⧗
Heat resistant alloy, Titanium alloy	S	● ⧓ ⧓ ● ⧗ ⧗ ⧓ ● ⧗
Hardened steel	H	● ⧗ ⧗ ● ⧗

Application	Picture	Designation		Cermet	Coated	Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Roughing	VP4	DNMG	150408-VP4																									0.15~0.35	1.00~4.00
			150412-VP4																									0.20~0.40	1.00~4.00
			150608-VP4																					●				0.15~0.35	1.00~4.00
			150612-VP4																									0.20~0.40	1.00~4.00
Medium to finishing	HA	DNMG	150404-HA																						●	●		0.05~0.30	0.80~3.50
			150408-HA																						●	●		0.10~0.40	0.80~3.50
			150604-HA																					●	●	●		0.05~0.30	0.80~3.50
			150608-HA																						●	●		0.10~0.40	0.80~3.50
Finishing	VW [Wiper]	DNMG	150404-VW																									0.10~0.35	0.30~3.00
			150408-VW																									0.10~0.40	0.30~3.00
			150604-VW																									0.10~0.35	0.30~3.00
			150608-VW																									0.10~0.40	0.30~3.00
Medium cutting	LW [Wiper]	DNMG	150408-LW																									0.15~0.50	0.70~4.50
			150412-LW																									0.20~0.60	1.00~5.00
			150608-LW						●																			0.15~0.50	0.70~4.50
			150612-LW																									0.20~0.60	1.00~5.00
Medium to finishing	SR  [Shaft]	DNMX	150404R-SR																									0.10~0.40	0.70~4.50
			150408R-SR																									0.12~0.45	1.00~4.50
			150604R-SR																									0.10~0.40	0.70~4.50
			150608R-SR																									0.12~0.45	1.00~4.50
			150404L-SR																									0.10~0.40	0.70~4.50
			150408L-SR																									0.12~0.45	1.00~4.50
			150604L-SR																									0.10~0.40	0.70~4.50
			150608L-SR																									0.12~0.45	1.00~4.50
Medium cutting	SH [Shaft]	DNMX	150404R-SH		●																							0.15~0.30	1.00~4.00
			150408R-SH																									0.15~0.50	1.50~5.00
			150604R-SH						●	●																		0.15~0.30	1.00~4.00
			150608R-SH						●	●																		0.15~0.50	1.50~5.00
			150404L-SH																									0.15~0.30	1.00~4.00
			150408L-SH																									0.15~0.50	1.50~5.00
			150604L-SH						●	●																		0.15~0.30	1.00~4.00
			150608L-SH						●	●																		0.15~0.50	1.50~5.00

● : Stock item

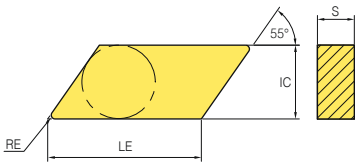
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDJNR/L	B92	PDJNR/L	B97	MDJNR/L	B108
		PDNNR/L	B98	MDNNN	B108
				MDQNR/L	B109

KHP Coolant	
TH	Page
PDJNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DDUNR/L	B125	PDSNR/L	B127	MDUNR/L	B130
		PDUNR/L	B127		

KN○○

Parallelogram 55° Negative



Dimensions (mm)				
Size	IC	RE	S	LE
16	9.525	0.5~1.0	4.76	16

Workpiece: Steel (P), Stainless steel (M), Cast iron (K), Non-ferrous metal (N), Heat resistant alloy, Titanium alloy (S), Hardened steel (H)

Machining types: ● Continuous cutting; ⬬ General cutting; ✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Medium cutting	11	KNUX	160405R–11					●	●	●	●	●	●		●		●										●			0.20~0.35	1.00~6.00
			160410R–11					●	●			●	●		●															0.30~0.60	1.50~6.00
			160405L–11					●	●	●		●	●		●															0.20~0.35	1.00~6.00
			160410L–11					●	●			●			●															0.30~0.60	1.50~6.00
Roughing	12	KNUX	160405R–12					●	●			●			●															0.25~0.35	1.50~6.00
			160410R–12					●	●			●			●															0.40~0.70	1.50~6.00
			160405L–12																											0.25~0.35	1.50~6.00
			160410L–12									●																		0.40~0.70	1.50~6.00

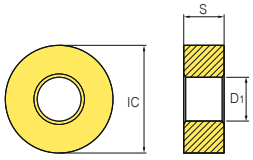
● : Stock item

External Tool Holder	
Clamp On	Page
CKJNR/L	B105
CKNNR/L	B105

Boring Bar	
Clamp On	Page
CKUNR/L	B129

RN○○

Round Negative



Dimensions (mm)			
Size	IC	S	D1
09	9.525	3.18	3.81
12	12.7	4.76	5.16
15	15.875	6.35	6.35
19	19.05	6.35	7.93
25	25.4	6.35~9.52	9.12
31	31.75	9.52	12.7

Workpiece: Steel (P), Stainless steel (M), Cast iron (K), Non-ferrous metal (N), Heat resistant alloy, Titanium alloy (S), Hardened steel (H)

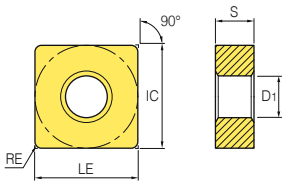
Machining types: ● Continuous cutting; ⬬ General cutting; ✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
General	B25	RNMG	090300–B25																											0.09~0.90	0.90~4.50
			120400–B25									●																		0.12~1.20	1.20~4.80
			150600–B25									●																		1.50~7.50	1.15~1.50
			190600–B25																											0.19~1.90	1.90~7.60
			250600–B25																											0.25~2.50	2.50~10.0
			250900–B25									●																		0.25~2.50	2.50~10.0
			310900–B25																											0.30~2.50	3.50~13.0

● : Stock item

SN○○

○ Square 90° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	9.525	0.4~0.8	3.18~4.76	9.525	3.81
12	12.7	0.4~1.2	4.76	12.7	5.16

Workpiece		
Steel	P	● ✱ ● ● ● ● ● ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ●
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ● ● ● ● ● ✱ ✱ ● ● ● ●
Cast iron	K	● ✱ ● ● ✱ ✱ ● ● ✱ ✱ ● ● ● ● ● ●
Non-ferrous metal	N	● ●
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ● ● ● ●
Hardened steel	H	● ● ● ●

Machining types
● Continuous cutting
● General cutting
✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	Coated NC3215	Coated NC3215P	Coated NC3225	Coated NC3225P	Coated NC3120	Coated NC3030	Coated NC3235	Coated NC5320	Coated NC5330	Coated NC6310	Coated NC6315	Coated NC9115	Coated NC9125	Coated NC9135	Coated PC5300	Coated PC5400	Coated PC8105	Coated PC8110	Coated PC8115	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Finishing	VB	SNMG	120404–VB			●		●	●																					0.15~0.35	0.30~2.00
			120408–VB			●		●	●		●																			0.15~0.40	0.50~2.00
Finishing	VF	SNMG	090304–VF																											0.07~0.30	0.50~1.50
			090308–VF																											0.07~0.30	0.50~1.50
			120404–VF																											0.07~0.30	0.50~1.50
			120408–VF														●													0.10~0.40	0.50~1.50
			120412–VF																											0.20~0.50	0.50~1.50
Finishing	VL	SNMG	120408–VL																							●				0.10~0.35	0.20~1.50
Medium to finishing	LP	SNMG	090308–LP																											0.10~0.30	0.30~1.50
			090408–LP																											0.10~0.30	0.30~1.50
			120404–LP								●						●													0.10~0.35	0.30~2.00
			120408–LP						●		●																			0.10~0.40	0.50~2.50
			120412–LP						●		●																			0.13~0.45	0.80~3.00
Medium to finishing	CP	SNMG	090304–CP																											0.08~0.30	0.40~3.00
			090308–CP																											0.10~0.30	0.40~3.00
			090404–CP																											0.08~0.30	0.40~3.00
			090408–CP																											0.10~0.30	0.40~3.00
			120404–CP							●	●																			0.10~0.35	0.50~3.50
			120408–CP							●	●					●														0.12~0.35	0.50~3.50
			120412–CP							●	●					●														0.13~0.35	0.80~3.50
Medium to finishing	VC	SNMG	120408–VC								●						●													0.15~0.40	0.50~3.50

● : Stock item

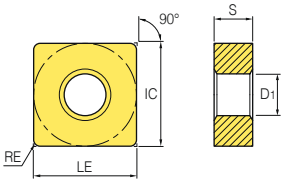
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSBNR/L	B92	PSBNR/L	B99	MSBNR/L	B109
DSDNN	B93	PSDNN	B100	MSDNN	B109
DSKNR/L	B93	PSKNR/L	B100	MSKNR/L	B110
DSSNR/L	B93	PSSNR/L	B101	MSRNR/L	B110
				MSSNR/L	B111

KHP Coolant	
TH	Page
PSSNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSKNR/L	B125	PSKNR/L	B128	MSKNR/L	B130

SN○○

○ Square 90° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
09	9.525	0.4~1.2	3.18~4.76	9.525	3.81
12	12.7	0.4~1.6	4.76	12.7	5.16
15	15.875	0.8~1.2	6.35	15.875	6.35
19	19.05	0.8~1.6	6.35	19.05	7.93

Workpiece		
Steel	P	● ✱ ● ⬌ ● ● ⬌ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ⬌ ✱ ● ⬌ ✱ ✱ ⬌ ✱ ✱ ● ⬌
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ✱ ● ⬌ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱
Cast iron	K	● ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌
Non-ferrous metal	N	● ⬌ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌
Heat resistant alloy, Titanium alloy	S	● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌
Hardened steel	H	● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌

Machining types
- ● Continuous cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium cutting	HM	SNMG	120404–HM						●								●								●				0.15~0.42	0.60~4.20
			120408–HM						●		●	●					●								●				0.10~0.50	1.00~5.00
			120412–HM						●				●												●				0.18~0.50	1.00~5.00
Medium cutting	MP	SNMG	090304–MP						●	●					●														0.10~0.40	0.40~3.80
			090308–MP						●	●					●														0.15~0.40	0.50~4.00
			090312–MP																										0.15~0.50	0.80~4.20
			090404–MP																										0.10~0.40	0.40~3.80
			090408–MP																										0.15~0.40	0.50~4.00
			090412–MP																										0.15~0.50	0.80~4.20
			120404–MP						●	●					●				●	●			●	●					0.10~0.40	0.40~4.00
			120408–MP					●	●	●			●	●	●			●	●				●	●					0.15~0.45	0.50~4.50
			120412–MP					●	●	●				●	●			●	●											0.15~0.50	0.80~5.00
			120416–MP						●	●					●														0.18~0.60	0.80~7.00
			150608–MP																										0.15~0.50	0.50~7.00
			150612–MP																										0.18~0.60	0.80~8.50
			190608–MP																										0.15~0.50	0.50~8.50
			190612–MP																										0.18~0.60	0.80~8.50
Medium cutting	VM	SNMG	090304–VM																										0.05~0.30	0.90~3.50
			090308–VM																										0.10~0.50	1.00~3.50
			120404–VM												●						●								0.05~0.30	0.90~5.00
			120408–VM	●							●	●			●						●	●		●		●			0.10~0.50	1.00~5.00
			120412–VM												●						●								0.13~0.60	1.30~5.00
			190612–VM																										0.25~0.60	2.50~7.50
			190616–VM																										0.25~0.60	2.50~7.50

● : Stock item

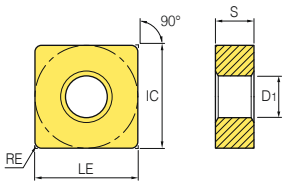
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSBNR/L	B92	PSBNR/L	B99	MSBNR/L	B109
DSDNN	B93	PSDNN	B100	MSDNN	B109
DSKNR/L	B93	PSKNR/L	B100	MSKNR/L	B110
DSSNR/L	B93	PSSNR/L	B101	MSRNR/L	B110
				MSSNR/L	B111

KHP Coolant	
TH	Page
PSSNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSKNR/L	B125	PSKNR/L	B128	MSKNR/L	B130

SN○○

○ Square 90° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	9.525	0.4~1.2	3.18~4.76	9.525	3.81
12	12.7	0.4~1.2	4.76	12.7	5.16
15	15.875	0.8~1.6	6.35	15.875	6.35
19	19.05	0.8~2.4	6.35	19.05	7.93
25	25.4	1.6~2.4	7.94~9.52	25.4	9.12

Workpiece			Machining types
Steel	P	● ⇕ ● ⇕	● Continuous cutting
Stainless steel	M	⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ● ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕	⇕ General cutting
Cast iron	K	● ⇕ ● ⇕ ⇕ ⇕ ⇕ ⇕ ● ⇕ ⇕ ⇕ ⇕ ⇕ ● ⇕	⇕ Interrupted cutting
Non-ferrous metal	N	● ⇕
Heat resistant alloy, Titanium alloy	S	● ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕
Hardened steel	H	● ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕ ⇕

Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium to roughing	B25	SNMG	090308–B25																										0.17~0.45	0.80~3.50
			120404–B25	●						●		●	●		●														0.17~0.45	1.00~3.50
			120408–B25	●	●				●	●		●	●		●						●	●				●			0.23~0.60	1.50~5.00
			120412–B25		●				●	●		●	●		●														0.25~0.60	2.00~5.00
			120416–B25						●	●		●	●		●														0.35~0.70	2.50~5.00
			150608–B25									●	●																0.25~0.60	1.50~6.00
			150612–B25																										0.25~0.60	2.00~6.00
			150616–B25							●																			0.35~0.70	2.00~6.00
			190608–B25						●	●		●																	0.25~0.60	3.00~8.00
			190612–B25						●	●		●			●														0.30~0.60	3.00~8.00
			190616–B25						●	●		●											●						0.35~0.70	3.00~8.00
			250716–B25																										0.35~0.70	4.00~12.00
			250724–B25						●						●														0.50 ~1.00	5.00~12.00
			250924–B25																										0.50~1.00	5.00~12.00
Roughing	GR	SNMG	120404–GR																										0.15~0.45	0.08~6.00
			120408–GR									●	●	●	●	●	●												0.20~0.50	1.00~7.00
			120412–GR									●	●	●															0.20~0.50	1.00~7.00
			150608–GR									●	●																0.25~0.60	1.00~7.00
			150612–GR						●	●	●	●	●																0.29~0.75	1.40~7.00
			190608–GR									●																	0.30~0.80	1.70~9.00
			190612–GR							●	●	●	●		●														0.30~0.80	1.70~9.00
			190616–GR						●	●	●	●	●		●														0.31~0.82	1.90~12.30
			190624–GR																										0.35~0.82	2.00~12.50
			250724–GR									●																	0.45~1.20	2.60~14.00
			250924–GR								●	●																	0.50~1.20	2.60~14.00
Medium to finishing	VQ [Cermet]	SNMG	090304–VQ																										0.05~0.30	0.50~3.50
			090408–VQ												●														0.08~0.30	0.80~4.00
			090412–VQ																										0.10~0.30	1.00~4.00
			120404–VQ	●	●																								0.05~0.30	0.80~4.00
			120408–VQ	●																									0.08~0.40	0.80~4.00

● : Stock item

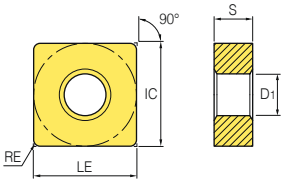
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSBNR/L	B92	PSBNR/L	B99	MSBNR/L	B109
DSDNN	B93	PSDNN	B100	MSDNN	B109
DSKNR/L	B93	PSKNR/L	B100	MSKNR/L	B110
DSSNR/L	B93	PSSNR/L	B101	MSRNR/L	B110
				MSSNR/L	B111

KHP Coolant	
TH	Page
PSSNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSKNR/L	B125	PSKNR/L	B128	MSKNR/L	B130

SN○○

○ Square 90° Negative

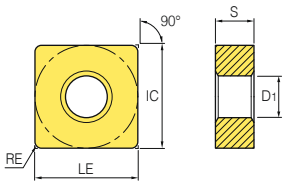


Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	9.525	0.4~1.2	3.18	9.525	3.81
12	12.7	0.4~2.0	4.76	12.7	5.16
15	15.875	0.8~1.6	6.35	15.875	6.35
19	19.05	0.8~2.4	6.35	19.05	7.93
25	25.4	2.4	7.94~9.52	25.4	9.12

Workpiece		
Steel	P	● ✱ ● ● ● ● ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ● ● ●

SN○○

○ Square 90° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	9.525	0.4~1.2	3.18~4.76	9.525	3.81
12	12.7	0.4~1.6	4.76	12.7	5.16
15	15.875	0.8~1.6	6.35	15.875	6.35
19	19.05	0.8~1.6	6.35	19.05	7.93
25	25.4	2.4	9.52	25.4	9.12

Workpiece		
Steel	P	● ✱ ● ● ● ● ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ● ● ✱ ✱ ● ● ● ✱ ✱
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ● ● ● ✱ ✱ ● ● ● ✱ ✱ ● ● ● ✱ ✱
Cast iron	K	● ✱ ● ● ✱ ✱ ● ● ✱ ✱ ✱ ✱ ● ●
Non-ferrous metal	N	● ●
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ● ● ✱ ● ●
Hardened steel	H	● ● ● ● ●

Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Roughing		SNGA	090304																										0.17~0.50	0.50~4.50
			090308																										0.17~0.50	0.50~4.50
			120404																										0.15~0.60	1.50~8.00
			120408																										0.15~0.60	1.50~8.00
			120412																										0.20~0.80	1.50~8.00
			150608																										0.20~0.80	2.00~10.00
			150616																										0.20~0.90	2.00~10.00
			190608																										0.15~0.60	3.00~12.00
			190612																										0.20~0.80	3.00~12.00
Roughing	RK	SNMG	120404–RK																										0.15~0.50	1.20~6.00
			120408–RK													●	●												0.23~0.53	1.50~6.00
			120412–RK													●	●												0.28~0.53	1.80~6.00
			120416–RK														●												0.28~0.53	2.00~6.00
			150612–RK																										0.20~0.70	1.80~7.00
			150616–RK																										0.23~0.70	2.00~7.50
			190612–RK																										0.33~0.78	2.50~10.00
			190616–RK																										0.35~0.78	2.70~10.00
Roughing	VR	SNMG	120408–VR																										0.25~0.55	1.20~7.00
			120412–VR																										0.30~0.60	1.50~7.00
			120416–VR																										0.35~0.60	2.00~7.00
			190612–VR						●	●																			0.35~0.70	2.00~10.00
			190616–VR						●	●																			0.35~0.75	2.20~10.00
Medium cutting	MM	SNMG	090304–MM																										0.08~0.35	0.50~5.00
			090308–MM																										0.10~0.40	0.50~5.00
			090312–MM																										0.12~0.45	0.50~5.00
			090404–MM																										0.08~0.35	0.50~5.00
			090408–MM																										0.10~0.40	0.50~5.00
			120404–MM															●	●	●	●			●					0.10~0.40	0.50~6.40
			120408–MM																●	●	●			●	●	●			0.12~0.45	0.50~6.40
			120412–MM																●	●	●			●	●				0.15~0.60	0.50~6.40
			120416–MM																										0.18~0.65	0.50~6.40
			150608–MM																										0.12~0.45	0.50~8.00
			150612–MM																●	●	●			●	●				0.15~0.60	0.50~8.00
			150616–MM																●	●									0.18~0.65	0.50~8.00
			190608–MM																●	●	●			●					0.12~0.45	0.50~9.50
			190612–MM																●	●	●			●	●				0.15~0.60	0.50~9.50
			190616–MM																●	●					●				0.18~0.65	0.50~9.50
			250924–MM																	●									0.20~0.80	1.00~10.00

● : Stock item

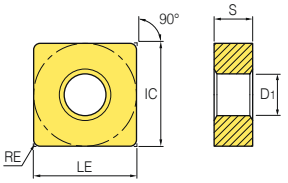
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSBNR/L	B92	PSBNR/L	B99	MSBNR/L	B109
DSDNN	B93	PSDNN	B100	MSDNN	B109
DSKNR/L	B93	PSKNR/L	B100	MSKNR/L	B110
DSSNR/L	B93	PSSNR/L	B101	MSRNR/L	B110
				MSSNR/L	B111

KHP Coolant	
TH	Page
PSSNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSKNR/L	B125	PSKNR/L	B128	MSKNR/L	B130

SN○○

○ Square 90° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
12	12.7	0.4~1.6	4.76	12.7	5.16
15	15.875	0.8~1.6	6.35	15.875	6.35
19	19.05	0.8~2.4	6.35	19.05	7.93
25	25.4	2.4	9.52	25.4	9.12

Workpiece			Machining types
Steel	P	● ✱ ● ◗	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ● ● ● ◗ ◗ ◗ ✱ ✱	◗ General cutting
Cast iron	K	● ✱ ● ◗ ✱ ✱ ● ● ✱ ✱ ● ●	✱ Interrupted cutting
Non-ferrous metal	N	● ◗
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ◗ ◗ ✱ ● ◗
Hardened steel	H	● ◗

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Roughing	RM	SNMG	120404–RM																											0.10~0.50	2.00~6.00
			120408–RM																●	●	●			●	●					0.15~0.55	2.00~6.00
			120412–RM																●	●	●				●					0.20~0.60	2.00~6.00
			120416–RM																											0.25~0.70	2.00~6.00
			150608–RM																											0.20~0.60	0.20~6.00
			150612–RM																		●				●					0.20~0.60	2.00~8.00
			150616–RM																											0.25~0.70	2.00~8.00
			190608–RM																		●				●					0.20~0.60	2.00~10.00
			190612–RM																●	●	●				●					0.20~0.60	2.00~10.00
			190616–RM																●	●										0.27~0.70	2.00~10.00
			190624–RM																											0.30~0.75	3.00~10.00
			250924–RM																											0.40~1.20	4.00~14.00
Medium to finishing	VP2	SNMG	120404–VP2																		●	●		●						0.05~0.35	0.10~3.00
			120408–VP2							●											●	●	●	●	●			●		0.10~0.45	0.50~4.50
			120412–VP2																		●		●	●	●					0.10~0.50	0.50~5.00
Medium cutting	VP3	SNMG	120404–VP3																		●	●	●					●		0.05~0.30	0.10~3.00
			120408–VP3																		●	●	●	●	●			●		0.10~0.45	1.00~5.00
			120412–VP3																		●	●	●	●	●					0.12~0.50	1.00~5.00
			120416–VP3																											0.25~0.45	0.50~4.00
			160608–VP3																											0.15~0.35	0.80~6.00
			160612–VP3																											0.20~0.40	1.00~6.00
			160616–VP3																											0.20~0.40	1.00~6.00
			190608–VP3																											0.15~0.35	0.80~7.00
			190612–VP3																											0.20~0.40	1.00~7.00
			190616–VP3																											0.25~0.45	1.00~7.00
Medium cutting	VP3	SNGG	120404–VP3																											0.05~0.30	0.10~3.00
			120408–VP3																											0.10~0.45	1.00~5.00
			120412–VP3																											0.12~0.50	1.00~5.00
Roughing	VP4	SNMG	120408–VP4																					●						0.15~0.35	1.00~4.00
			120412–VP4																					●						0.20~0.40	1.00~4.00
			150612–VP4																					●						0.20~0.45	1.00~5.00
			190608–VP4																											0.20~0.50	1.00~9.00
			190612–VP4																					●						0.23~0.55	1.00~9.00
			190616–VP4																											0.27~0.60	1.00~9.00

● : Stock item

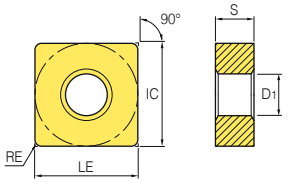
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSBNR/L	B92	PSBNR/L	B99	MSBNR/L	B109
DSDNN	B93	PSDNN	B100	MSDNN	B109
DSKNR/L	B93	PSKNR/L	B100	MSKNR/L	B110
DSSNR/L	B93	PSSNR/L	B101	MSRNR/L	B110
				MSSNR/L	B111

KHP Coolant	
TH	Page
PSSNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSKNR/L	B125	PSKNR/L	B128	MSKNR/L	B130

SN○○

○ Square 90° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	9.525	0.2~0.8	3.18	9.525	3.81
12	12.7	0.4~2.4	4.76	12.7	5.16
15	15.875	0.2~1.6	4.76	15.875	6.35
19	19.05	0.2~1.6	4.76	19.05	7.93
25	25.4	0.4~2.4	6.35~7.94	25.4	9.12

Workpiece			Machining types
Steel	P	● ⧓ ● ⧗ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓	● Continuous cutting
Stainless steel	M	⧓ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧗ ⧗ ⧗ ⧓ ⧓	⧗ General cutting
Cast iron	K	● ⧓ ● ⧗ ⧓ ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧗ ⧗	⧓ Interrupted cutting
Non-ferrous metal	N	⧓ ⧓ ⧓ ⧓ ⧗ ⧗
Heat resistant alloy, Titanium alloy	S	● ⧓ ⧓ ● ⧗ ⧗ ⧓ ⧗ ⧗
Hardened steel	H	● ⧗ ⧗ ● ⧗ ⧗

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium to finishing	HA	SNMG	120404–HA																						●	●		0.10~0.35	0.80~3.50
			120408–HA																						●	●		0.10~0.40	0.80~3.50
			120412–HA																									0.13~0.55	0.80~3.50
Roughing		SNGN	090302																									0.05~0.30	0.50~4.00
			090304																									0.10~0.35	0.50~4.00
			090308																									0.10~0.40	1.00~4.00
			120304																									0.13~0.50	1.30~5.00
			120308																									0.15~0.60	1.50~6.00
			120312																									0.17~0.60	1.70~6.00
			120402																									0.10~0.45	1.00~5.00
			120404																									0.13~0.50	1.30~5.00
			120408																									0.15~0.60	1.50~6.00
			120412																									0.17~0.60	1.70~6.00
			120424																									0.20~0.65	2.00~6.00
			150402																									0.10~0.50	0.50~6.00
			150408																									0.15~0.60	1.50~8.00
			150412																									0.17~0.60	2.00~8.00
			150416																									0.20~0.65	2.50~8.50
			190402																									0.10~0.60	2.00~8.50
			190412																									0.17~0.70	2.50~10.00
			190416																									0.20~0.75	2.50~10.00
			250604																									0.30~0.80	3.00~12.00
			250616																									0.35~1.00	4.00~12.00
Medium to roughing		SNUN	120408																									0.23~0.60	1.50~5.00
			120412																									0.25~0.60	2.00~5.00
			190412																									0.30~1.00	3.00~10.00
			120412TN																									0.25~0.60	2.00~5.00
			250724TN																									0.30~1.20	3.00~12.00
Medium cutting		SNMX	120408R																									0.15~0.35	1.00~4.00

● : Stock item

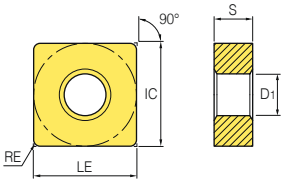
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSBNR/L	B92	PSBNR/L	B99	MSBNR/L	B109
DSDNN	B93	PSDNN	B100	MSDNN	B109
DSKNR/L	B93	PSKNR/L	B100	MSKNR/L	B110
DSSNR/L	B93	PSSNR/L	B101	MSRNR/L	B110
				MSSNR/L	B111

KHP Coolant	
TH	Page
PSSNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSKNR/L	B125	PSKNR/L	B128	MSKNR/L	B130

SN○○

○ Square 90° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
12	12.7	0.8~1.2	4.76	12.7	5.16
19	19.05	1.2~2.4	6.35	19.05	7.93
25	25.4	2.4~3.2	7.94~9.52	25.4	9.12

Workpiece			Machining types
Steel	P	● ✱ ● ●	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ✱	● General cutting
Cast iron	K	● ✱ ● ● ✱ ✱ ✱ ✱ ● ● ✱ ✱ ● ●	✱ Interrupted cutting
Non-ferrous metal	N	● ●
Heat resistant alloy, Titanium alloy	S	✱ ✱ ● ● ● ✱ ● ●
Hardened steel	H	● ● ● ● ●

Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC515H	NC520H	NC525H	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium cutting		SNGX	120408R																									0.15~0.35	1.00~4.00
Roughing	GR	SNMM	120408–GR																									0.20~0.50	1.00~7.00
			120412–GR									●	●															0.25~0.65	1.30~7.00
			190612–GR									●																0.25~0.65	1.30~11.50
			190616–GR																									0.32~0.85	1.80~11.50
Heavy	HP	SNMM	190612-HP																									0.30~0.80	2.50~9.00
			190616-HP																									0.35~0.85	2.50~9.00
			190624-HP																									0.40~0.90	2.50~9.00
			250924-HP																									0.40~1.00	2.50~11.00
	HL	SNMM	190612-HL																									0.30~0.85	3.00~10.00
			190616-HL																									0.35~0.90	3.00~10.00
			190624-HL																									0.40~1.00	3.00~10.00
			250924-HL																									0.40~1.10	2.50~12.00
	GH	SNMM	120408–GH									●	●		●													0.30~0.60	2.50~8.00
			120412–GH							●		●																0.30~0.70	2.50~8.00
			150612–GH									●																0.30~0.70	2.50~8.00
			190612–GH						●		●	●	●		●													0.30~0.70	3.00~8.00
			190616–GH						●		●	●	●		●													0.45~1.00	4.00~9.00
			190624–GH						●		●	●			●													0.55~1.20	4.00~9.00
			250724–GH						●		●	●	●		●													0.55~1.20	5.00~12.00
			250924–GH						●		●	●	●		●													0.55~1.20	5.00~12.00

● : Stock item

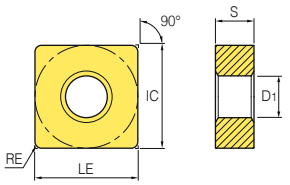
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSBNR/L	B92	PSBNR/L	B99	MSBNR/L	B109
DSDNN	B93	PSDNN	B100	MSDNN	B109
DSKNR/L	B93	PSKNR/L	B100	MSKNR/L	B110
DSSNR/L	B93	PSSNR/L	B101	MSRNR/L	B110
				MSSNR/L	B111

KHP Coolant	
TH	Page
PSSNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSKNR/L	B125	PSKNR/L	B128	MSKNR/L	B130

SN○○

○ Square 90° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
19	19.05	1.2~2.4	6.35	19.05	7.93
25	25.4	1.6~2.4	7.94~9.52	25.4	9.12

Workpiece		
Steel	P	● ⧓ ● ⧗ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧗ ⧗ ⧗ ⧓ ⧓
Stainless steel	M	⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧗ ⧓ ⧓
Cast iron	K	● ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧓ ⧓ ● ⧗
Non-ferrous metal	N	● ⧗
Heat resistant alloy, Titanium alloy	S	⧓ ⧓ ● ⧗ ⧗ ⧓ ● ⧗
Hardened steel	H	● ⧗ ⧗ ● ⧗

Machining types
- ● Continuous cutting
- ⧗ General cutting
- ⧓ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	Coated NC3215	Coated NC3225	Coated NC3120	Coated NC3030	Coated NC3235	Coated NC5320	Coated NC5330	Coated NC6310	Coated NC6315	Coated NC515H	Coated NC520H	Coated NC525H	Coated PC5300	Coated PC5400	Coated PC8105	Coated PC8110	Coated PC8115	Coated PC9030	Coated PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Heavy	HG	SNMM	190612-HG																	●										0.30~0.90	3.00~10.00
			190616-HG																											0.35~0.95	3.00~10.00
			190624-HG																											0.40~1.00	3.00~10.00
			250924-HG										●					●	●	●										0.40~1.20	3.50~13.00
			250932-HG																											0.50~1.20	3.50~13.00
	VT	SNMM	190612–VT						●						●															0.60~1.00	6.00~13.00
			190616–VT						●																					0.60~1.10	6.00~13.00
			190624–VT						●																					0.60~1.60	7.00~13.00
			250716–VT																											0.75~1.60	7.00~15.00
			250724–VT						●			●																			0.75~1.60	7.00~15.00
			250924–VT						●			●																			0.75~1.60	7.00~17.00
	HV	SNMM	190616-HV																											0.45~1.05	4.00~11.00
			190624-HV																											0.50~1.10	4.00~11.00
			250724-HV																	●										0.50~1.40	4.00~15.00
			250924-HV										●							●										0.50~1.40	4.00~15.00
	VH	SNMM	190612–VH																											0.50~0.90	5.00~10.00
			190616–VH						●																					0.50~1.10	5.00~10.00
			190624–VH						●																					0.60~1.20	6.00~12.00
			250716–VH																											0.70~1.50	6.00~14.00
			250724–VH																											0.70~1.40	6.00~15.00
			250920–VH																											0.70~1.40	6.00~15.00
			250924–VH						●																					0.70~1.40	6.00~15.00
	HX	SNMM	190616–HX																											0.55~1.10	4.50~15.00
			190624–HX																											0.60~1.20	4.50~15.00
			250924–HX																											0.60~1.50	4.50~18.00

● : Stock item

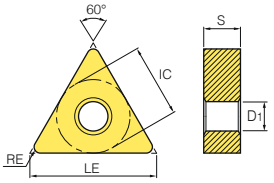
External Tool Holder					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSBNR/L	B92	PSBNR/L	B99	MSBNR/L	B109
DSDNN	B93	PSDNN	B100	MSDNN	B109
DSKNR/L	B93	PSKNR/L	B100	MSKNR/L	B110
DSSNR/L	B93	PSSNR/L	B101	MSRNR/L	B110
				MSSNR/L	B111

KHP Coolant	
TH	Page
PSSNR/L	B148

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DSKNR/L	B125	PSKNR/L	B128	MSKNR/L	B130

TN○○

△ Triangular 60° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	6.35	0.4~0.8	3.18	10.999	2.4
16	9.525	0.4~1.2	4.76	16.498	3.81
22	12.7	0.8~1.2	4.76	21.997	5.16

Workpiece			Machining types
Steel	P	● ✱ ● ◐ ● ◐ ◐ ✱ ✱ ✱ ✱ ✱ ✱	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ● ◐ ✱ ● ◐ ✱ ● ◐ ✱	◐ General cutting
Cast iron	K	● ✱ ● ◐ ✱ ✱ ● ● ◐ ● ◐	✱ Interrupted cutting
Non-ferrous metal	N	● ◐
Heat resistant alloy, Titanium alloy	S	● ◐ ◐ ◐ ✱ ● ◐
Hardened steel	H	● ◐ ◐ ◐ ● ◐

Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3215P	NC3225	NC3225P	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	VB	TNMG	160404–VB	●	●	●	●		●		●																			0.10~0.35	0.30~1.50
			160408–VB	●	●	●	●		●		●						●													0.15~0.45	0.50~7.00
			160412–VB								●																			0.18~0.45	0.80~3.00
			220408–VB																											0.15~0.45	0.50~2.50
			220412–VB																											0.20~0.50	0.70~2.50
Finishing	VL	TNMG	160404–VL	●	●				●																					0.05~0.25	0.10~1.00
			160408–VL	●					●		●						●													0.10~0.35	0.20~1.50
			160412–VL						●																					0.15~0.40	0.20~1.50
			220408–VL																											0.10~0.35	0.20~1.50
			220412–VL																											0.10~0.35	0.50~2.00
Finishing	VF	TNMG	110304–VF	●	●												●													0.05~0.20	0.20~1.00
			160404–VF	●		●	●						●				●							●						0.07~0.30	0.50~1.50
			160408–VF		●		●		●				●				●													0.10~0.40	0.50~1.50
			160412–VF																											0.15~0.50	0.50~1.50
			220404–VF														●									●				0.10~0.40	0.50~1.50
			220408–VF																											0.10~0.40	0.50~1.50
Medium to finishing	LP	TNMG	110304–LP																											0.07~0.30	0.30~1.50
			110308–LP																											0.10~0.30	0.30~1.50
			160404–LP						●		●						●													0.10~0.35	0.30~2.00
			160408–LP						●		●																			0.10~0.40	0.50~2.50
			160412–LP						●		●																			0.13~0.45	0.80~3.00
Medium to finishing	CP	TNMG	110304–CP																											0.08~0.26	0.40~2.50
			110308–CP																											0.10~0.26	0.40~2.50
			160404–CP							●		●																		0.10~0.30	0.50~3.00
			160408–CP							●		●				●														0.12~0.30	0.50~3.00
			160412–CP							●		●				●														0.13~0.30	0.80~3.00
			220408–CP							●		●																		0.15~0.35	0.80~4.00
			220412–CP							●		●																		0.18~0.35	1.00~4.00

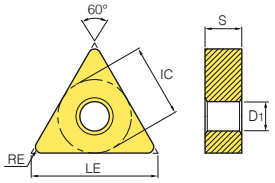
● : Stock item

External Tool Holder							
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page
DTFNR/L	B94	PTFNR/L	B101	WTENN	B103	MTENN	B111
DTGNR/L	B94	PTGNR/L	B102	WTJNR/L	B103	MTFNR/L	B111
		PTTNR/L	B102	WTXNR/L	B103	MTGNR/L	B112
						MTJNR/L	B112

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DTFNR/L	B126	PTFNR/L	B128	MTFNR/L	B131

TN○○

△ Triangular 60° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
11	6.35	0.8	3.18	10.999	2.4
16	9.525	0.4~1.6	4.76	16.498	3.81
22	12.7	0.4~1.6	4.76	21.997	5.16
27	15.875	1.2	6.35	27.496	6.35

Workpiece		
Steel	P	
Stainless steel	M	
Cast iron	K	
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	
Hardened steel	H	

Machining types
- ● Continuous cutting
- ⬬ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium to finishing	VC	TNMG	160404–VC						●	●					●													0.10~0.35	0.30~2.00
			160408–VC					●	●	●					●													0.15~4.00	0.50~3.00
			160412–VC						●	●					●													0.15~4.50	0.50~3.00
			220408–VC						●	●																		0.15~0.40	0.50~3.00
			220412–VC																									0.15~0.45	0.50~3.00
Medium cutting	HM	TNMG	110308–HM								●																	0.17~0.40	1.50~3.00
			160404–HM		●					●	●	●									●					●			0.05~0.30	0.90~4.00
			160408–HM						●	●	●	●														●			0.10~0.50	1.00~4.00
			160412–HM																							●			0.13~0.60	1.30~4.00
			220404–HM							●																			0.15~0.45	0.60~5.00
			220408–HM							●	●	●																	0.18~0.48	0.80~5.80
Medium cutting	MP	TNMG	110308–MP							●																			0.15~0.42	0.50~3.50
			160404–MP					●	●	●					●	●		●	●	●			●	●					0.10~0.40	0.40~3.50
			160408–MP					●	●	●				●	●				●	●			●	●					0.15~0.45	0.50~4.00
			160412–MP					●	●	●				●	●			●	●				●	●					0.15~0.50	0.80~4.50
			160416–MP																										0.18~0.50	1.00~4.50
			220404–MP						●	●					●			●	●										0.10~0.35	0.40~5.00
			220408–MP						●	●					●														0.15~0.45	0.50~5.50
			220412–MP						●	●								●		●									0.15~0.50	0.80~6.00
			220416–MP						●	●					●														0.20~0.55	1.00~6.00
			270612–MP																										0.28~0.60	1.20~8.00
Medium cutting	VM	TNMG	110308–VM																										0.05~0.30	0.80~4.00
			160404–VM	●	●						●	●			●						●	●							0.05~0.30	0.90~5.00
			160408–VM	●	●				●	●	●	●			●						●	●				●			0.10~0.50	1.00~5.00
			160412–VM						●		●										●								0.13~0.60	1.30~5.00
			220404–VM																		●	●							0.05~0.30	0.90~6.60
			220408–VM								●				●						●			●					0.10~0.50	1.00~6.60
			220412–VM																										0.13~0.60	1.30~6.60

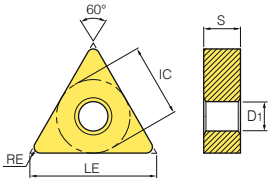
● : Stock item

External Tool Holder							
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page
DTFNR/L	B94	PTFNR/L	B101	WTENN	B103	MTENN	B111
DTGNR/L	B94	PTGNR/L	B102	WTJNR/L	B103	MTFNR/L	B111
		PTTNR/L	B102	WTXNR/L	B103	MTGNR/L	B112
						MTJNR/L	B112

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DTFNR/L	B126	PTFNR/L	B128	MTFNR/L	B131

TN○○

△ Triangular 60° Negative

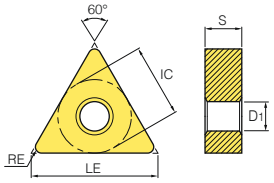


Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	6.35	0.8	3.18	10.999	2.4
16	9.525	0.2~1.6	4.76	16.498	3.81
22	12.7	0.4~1.6	4.76	21.997	5.16
27	15.875	0.8~1.6	6.35	27.496	6.35
33	19.05	1.6~2.4	9.52	32.996	7.93

Workpiece			Machining types
Steel	P	● ✱ ● ⬌	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ● ● ●

TN○○

Triangular 60° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
11	6.35	0.4~0.8	3.18	10.999	2.4
16	9.525	0.2~1.6	4.76	16.498	3.81
22	12.7	0.4~1.6	4.76	21.997	5.16
27	15.875	0.8~1.6	6.35	27.496	6.35
33	19.05	2.4	9.52	32.996	7.93

Workpiece			Machining types
Steel	P		● Continuous cutting
Stainless steel	M		⧓ General cutting
Cast iron	K		⧑ Interrupted cutting
Non-ferrous metal	N		
Heat resistant alloy, Titanium alloy	S		
Hardened steel	H		

Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium cutting		**TNGG**	110304R																									0.05~0.30	0.50~2.50
			160402R	●	●																							0.08~0.30	0.50~3.50
			160404R	●	●																							0.12~0.30	1.00~3.50
			160408R	●	●																							0.15~0.35	1.30~3.50
			220404R	●	●																							0.12~0.30	1.00~5.00
			220408R	●	●																							0.15~0.35	1.30~5.00
			220412R																									0.17~0.40	1.50~5.00
			110304L																									0.05~0.30	0.50~2.50
			160402L																									0.08~0.30	0.50~3.50
			160404L	●	●																							0.12~0.30	1.00~3.50
			160408L	●	●																							0.15~0.35	1.30~3.50
			220404L																									0.12~0.30	1.00~5.00
			220408L																									0.15~0.35	1.30~5.00
			220412L																									0.17~0.40	1.50~5.00
Medium cutting	**MK**	**TNMG**	160404–MK											●		●	●											0.05~0.30	0.90~3.50
			160408–MK											●			●											0.10~0.50	1.00~4.00
			160412–MK											●			●											0.12~0.60	1.20~4.50
			160416–MK																									0.13~0.60	1.20~4.50
			220404–MK																									0.17~0.45	1.50~5.00
			220408–MK																									0.21~0.50	1.30~5.50
			220412–MK																									0.23~0.52	1.40~5.50
			220416–MK																									0.25~0.53	1.60~6.00
			270612–MK																									0.25~0.55	3.00~7.00
Roughing		**TNMA**	110308																									0.05~0.30	0.50~3.00
			160404													●	●											0.10~0.30	1.00~4.00
			160408													●	●											0.10~0.40	1.00~4.00
			160412														●											0.10~0.50	1.50~4.50
			160416														●											0.15~0.55	1.50~4.50
			220404																									0.10~0.35	1.00~4.00
			220408														●											0.15~0.40	1.50~5.00
			220412														●											0.20~0.50	1.50~5.00
			220416														●											0.25~0.55	1.50~5.00
			270608																									0.20~0.45	2.00~7.00
			270612																									0.25~0.55	3.00~7.00
			270616																									0.30~0.65	3.00~7.00
			330924																									0.35~0.75	3.00~9.00

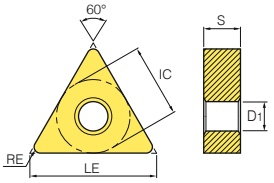
● : Stock item

External Tool Holder							
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page
DTFNR/L	B94	PTFNR/L	B101	WTENN	B103	MTENN	B111
DTGNR/L	B94	PTGNR/L	B102	WTJNR/L	B103	MTFNR/L	B111
		PTTNR/L	B102	WTXNR/L	B103	MTGNR/L	B112
						MTJNR/L	B112

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DTFNR/L	B126	PTFNR/L	B128	MTFNR/L	B131

TN○○

△ Triangular 60° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	6.35	0.2~0.4	3.18	10.999	2.4
16	9.525	0.4~1.6	4.76	16.498	3.81
22	12.7	0.4~1.6	4.76	21.997	5.16
27	15.875	1.2~2.4	6.35	27.496	6.35

Workpiece		
Steel	P	● ✱ ● ● ● ● ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ●
Stainless steel	M	✱ ✱ ✱ ✱ ● ● ● ✱ ✱ ✱ ● ● ● ● ●
Cast iron	K	● ✱ ● ● ✱ ✱ ✱ ● ● ✱ ✱ ● ●
Non-ferrous metal	N	● ●
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ● ● ✱ ● ●
Hardened steel	H	● ●

Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	Coated NC3215	Coated NC3225	Coated NC3120	Coated NC3030	Coated NC3235	Coated NC5320	Coated NC5330	Coated NC6310	Coated NC6315	Coated NC9115	Coated NC9125	Coated NC9135	Coated PC5300	Coated PC5400	Coated PC8105	Coated PC8110	Coated PC8115	Coated PC9030	Coated PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Roughing		TNGA	110302																											0.05~0.30	0.20~3.00
			110304																											0.05~0.30	0.40~3.00
			160304																											0.10~0.35	0.40~4.00
			160402																											0.10~0.30	0.20~4.00
			160404																											0.10~0.35	0.40~5.00
			160408																											0.12~0.40	0.50~5.00
			220304																											0.10~0.35	0.50~5.00
			220402																											0.05~0.30	0.20~3.00
			220404																											0.10~0.35	0.40~5.00
			220408																											0.10~0.40	0.50~5.00
			220412																											0.12~0.45	1.00~5.50
			270612																											0.12~0.45	1.00~7.00
			270624																											0.20~0.55	2.00~7.00
Roughing	RK	TNMG	160408–RK													●	●													0.23~0.53	1.50~5.00
			160412–RK													●	●													0.28~0.53	1.80~5.00
			160416–RK														●													0.28~0.53	1.80~5.00
			220408–RK														●													0.23~0.53	1.50~6.00
			220412–RK														●													0.28~0.53	1.80~6.00
			220416–RK														●													0.28~0.63	2.00~6.00
Roughing	VR	TNMG	160404–VR																											0.20~0.50	0.80~7.00
			160408–VR																											0.25~0.55	1.20~7.00
			160412–VR																											0.35~0.65	1.70~7.00
			160416–VR																											0.35~0.70	2.00~10.0
			220408–VR																											0.35~0.70	2.00~10.0
			220412–VR																											0.35~0.70	2.00~10.0
			220416–VR																											0.35~0.75	2.20~10.0
Medium cutting	MM	TNMG	160404–MM															●	●	●	●			●	●	●				0.10~0.40	0.50~4.80
			160408–MM															●	●	●	●			●	●	●				0.12~0.45	0.50~4.80
			160412–MM																●	●						●				0.18~0.65	0.50~4.80
			160416–MM																											0.18~0.65	0.50~4.80
			220404–MM																											0.10~0.40	0.50~6.50
			220408–MM																●	●	●				●	●				0.12~0.45	0.50~6.50
			220412–MM																●	●	●				●	●				0.15~0.60	0.50~6.50
			220416–MM																											0.18~0.65	0.50~6.50

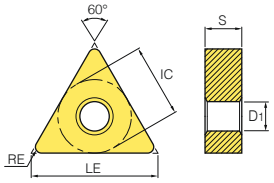
● : Stock item

External Tool Holder							
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page
DTFNR/L	B94	PTFNR/L	B101	WTENN	B103	MTENN	B111
DTGNR/L	B94	PTGNR/L	B102	WTJNR/L	B103	MTFNR/L	B111
		PTTNR/L	B102	WTXNR/L	B103	MTGNR/L	B112
						MTJNR/L	B112

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DTFNR/L	B126	PTFNR/L	B128	MTFNR/L	B131

TN○○

△ Triangular 60° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
16	9.525	0.4~1.2	4.76	16.498	3.81
22	12.7	0.4~1.6	4.76	21.997	5.16

Workpiece			Machining types
Steel	P	● ✱ ● ◆ ● ◆ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ◆ ✱ ✱ ● ◆ ◆ ✱ ✱ ● ◆	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ✱ ● ◆ ✱ ✱ ✱ ✱ ✱ ✱ ● ◆ ◆ ✱ ✱	◆ General cutting
Cast iron	K	● ✱ ● ◆ ✱ ✱ ✱ ✱ ● ◆ ✱ ✱ ● ◆ ◆ ● ◆	✱ Interrupted cutting
Non-ferrous metal	N	● ◆ ● ◆
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ◆ ◆ ✱ ● ◆ ◆
Hardened steel	H	● ◆ ◆ ● ◆

Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Roughing	RM	TNMG	160404–RM																		●								0.10~0.50	2.00~5.50
			160408–RM																●	●	●					●			0.15~0.55	2.00~5.50
			160412–RM																	●									0.20~0.60	2.00~5.50
			220408–RM																	●	●				●				0.10~0.50	2.00~7.50
			220412–RM																●	●	●				●				0.15~0.55	2.00~7.50
			220416–RM																										0.25~0.70	2.00~7.50
Medium to finishing	VP2	TNMG	160404–VP2																		●	●	●	●	●	●			0.05~0.30	0.10~3.00
			160408–VP2																		●	●	●	●	●	●			0.10~0.45	0.50~5.00
			160412–VP2																										0.13~0.55	0.80~3.30
			220404–VP2																		●			●					0.05~0.30	0.80~5.00
			220408–VP2																		●			●					0.10~0.40	0.80~5.00
Medium cutting	VP3	TNMG	160404–VP3																		●	●	●	●	●	●			0.05~0.30	0.10~3.00
			160408–VP3																		●	●	●	●	●	●			0.10~0.45	0.50~5.00
			160412–VP3																										0.20~0.40	0.50~3.50
			220404–VP3																										0.20~0.30	0.80~4.00
			220408–VP3																										0.25~0.35	0.80~5.00
			220412–VP3																										0.30~0.40	1.00~5.00
			220416–VP3																										0.30~0.40	1.00~5.00
Medium cutting	VP3	TNGG	160404–VP3																				●	●	●			●	0.05~0.30	0.10~3.00
			160408–VP3																				●	●	●			●	0.10~0.45	0.50~5.00
Roughing	VP4	TNMG	160408–VP4																						●		●		0.15~0.35	1.00~4.00
			160412–VP4																						●				0.20~0.40	1.00~4.00
Medium to finishing	HA	TNMG	160404–HA																					●		●		●	0.05~0.30	0.80~3.50
			160408–HA																					●		●		●	0.10~0.40	0.80~3.50
			160412–HA																										0.13~0.55	0.80~3.50
			220408–HA																							●			0.10~0.40	0.80~5.30

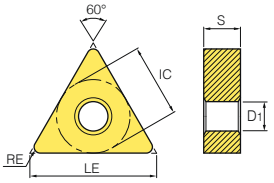
● : Stock item

External Tool Holder							
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page
DTFNR/L	B94	PTFNR/L	B101	WTENN	B103	MTENN	B111
DTGNR/L	B94	PTGNR/L	B102	WTJNR/L	B103	MTFNR/L	B111
		PTTNR/L	B102	WTXNR/L	B103	MTGNR/L	B112
						MTJNR/L	B112

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DTFNR/L	B126	PTFNR/L	B128	MTFNR/L	B131

TN○○

△ Triangular 60° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	6.35	0.2~0.8	3.18	10.999	2.4
16	9.525	0.4~1.2	3.18~4.76	16.498	3.81
22	12.7	0.4~1.6	4.76	21.997	5.16
27	15.875	3.0	6.35	27.496	6.35

Workpiece			CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05
	Steel	P	●	✱	●	◐	●	◐	✱	✱	✱	✱	✱	✱						✱	✱							
	Stainless steel	M									✱	✱		✱			●	◐	✱	✱	✱	●	◐	◐	✱	✱		
	Cast iron	K	●	✱	●	◐							✱	✱	●	◐				✱	✱						●	◐
	Non-ferrous metal	N																									●	◐
	Heat resistant alloy, Titanium alloy	S															●			✱	✱	●	◐	◐	✱		●	◐
	Hardened steel	H																				●	◐	◐			●	◐

Machining types
- ● Continuous cutting
- ◐ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																				Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	VW [Wiper]	TNMG	160404–VW																											0.10~0.35	0.30~3.00
			160408–VW																											0.10~0.40	0.30~3.00
Medium cutting	LW [Wiper]	TNMG	160408–LW																											0.15~0.50	0.70~4.50
			160412–LW																											0.20~0.60	1.00~5.00
Medium cutting		TNGN	110302																											0.05~0.25	0.20~2.50
			110304																											0.10~0.30	0.50~2.50
			110308																											0.10~0.30	0.80~2.50
			160302																											0.05~0.30	0.20~3.00
			160304																											0.10~0.30	0.50~4.00
			160308																											0.10~0.40	0.80~4.00
			160404																											0.10~0.40	0.50~4.00
			160408																											0.10~0.40	1.00~4.00
			160412																											0.10~0.50	1.50~4.50
			220404																											0.10~0.35	1.00~4.00
			220408																											0.15~0.40	1.50~5.00
			220412																											0.20~0.50	1.50~5.00
			220416																											0.25~0.55	1.50~5.00
			220424																											0.30~0.65	2.00~5.00
			270630																											0.35~0.70	2.00~5.00
Medium to finishing	SR [Shaft]	TNMX	160404R–SR																											0.10~0.35	0.70~3.50
			160408R–SR																											0.12~0.40	1.00~3.50
			160404L–SR																											0.10~0.35	0.70~3.50
			160408L–SR																											0.12~0.40	1.00~3.50
Medium cutting	SH [Shaft]	TNMX	160404R–SH		●			●	●	●	●			●							●									0.15~0.30	0.50~4.00
			160408R–SH					●	●	●	●										●									0.15~0.45	1.00~4.00
			160404L–SH					●	●	●	●																			0.15~0.30	0.50~4.00
			160408L–SH					●	●	●	●																			0.15~0.45	1.00~4.00

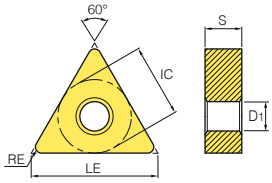
● : Stock item

External Tool Holder							
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page
DTFNR/L	B94	PTFNR/L	B101	WTENN	B103	MTENN	B111
DTGNR/L	B94	PTGNR/L	B102	WTJNR/L	B103	MTFNR/L	B111
		PTTNR/L	B102	WTXNR/L	B103	MTGNR/L	B112
						MTJNR/L	B112

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DTFNR/L	B126	PTFNR/L	B128	MTFNR/L	B131

TN○○

△ Triangular 60° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
16	9.525	0.2~0.8	4.76	16.498	3.81
22	12.7	0.4~1.6	4.76	21.997	5.16
27	15.875	1.6~2.4	6.35	27.496	6.35
33	19.05	2.4	9.52	32.996	7.93

Workpiece			Machining types
Steel	P	● ✱ ● ◆	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ● ◆ ✱ ✱ ● ◆ ◆ ✱ ✱ ● ◆ ◆ ✱ ✱ ✱	◆ General cutting
Cast iron	K	● ✱ ● ◆ ✱ ✱ ● ◆ ✱ ✱ ● ◆ ● ◆	✱ Interrupted cutting
Non-ferrous metal	N	● ◆ ● ◆
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ◆ ◆ ✱ ● ◆ ◆
Hardened steel	H	● ◆ ◆ ● ◆

Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium to roughing		**TNMX**	160402R		●																								0.10~0.30	0.50~3.00
			160404R		●				●	●	●	●			●						●								0.12~0.30	1.00~3.50
			160408R						●	●	●	●									●								0.15~0.35	1.30~3.40
			220404R																										0.12~0.30	1.00~5.00
			220408R																										0.15~0.35	1.30~5.00
			160404L						●	●	●	●																	0.12~0.30	1.00~3.50
			160408L						●	●	●	●																	0.15~0.35	1.30~3.40
Roughing	**GR**	**TNMM**	220408–GR																										0.22~0.61	1.10~7.80
			220412–GR																										0.28~0.78	1.20~7.80
			220416–GR																										0.31~0.75	1.50~7.80
Heavy	**GH**	**TNMM**	160408–GH																										0.20~0.50	1.00~7.00
			220408–GH																										0.25~0.60	1.30~7.00
			220412–GH							●																			0.20~0.50	1.00~8.00
			220416–GH																										0.25~0.60	1.30~8.00
			270616–GH																										0.32~0.70	1.80~8.00
			270624–GH																										0.35~0.50	1.80~13.00
			330924–GH																										0.35~0.70	2.30~13.00

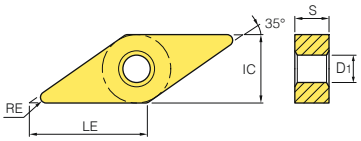
● : Stock item

External Tool Holder							
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page
DTFNR/L	B94	PTFNR/L	B101	WTENN	B103	MTENN	B111
DTGNR/L	B94	PTGNR/L	B102	WTJNR/L	B103	MTFNR/L	B111
		PTTNR/L	B102	WTXNR/L	B103	MTGNR/L	B112
						MTJNR/L	B112

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DTFNR/L	B126	PTFNR/L	B128	MTFNR/L	B131

VN○○

Rhombic 35° Negative

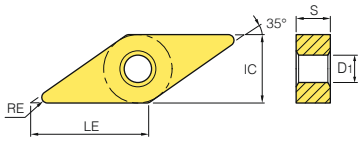


Dimensions (mm)					
Size	IC	RE	S	LE	D1
16	9.525	0.4~1.6	4.76	16.606	3.81

Workpiece		
Steel	P	● ✱ ● ◆ ● ◆ ◆ ✱ ✱ ✱

VN○○

Rhombic 35° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
16	9.525	0.4~1.2	4.76	16.606	3.81
22	12.7	0.4~0.8	4.76	22.142	5.16

Workpiece		
Steel	P	
Stainless steel	M	
Cast iron	K	
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	
Hardened steel	H	

Machining types
● Continuous cutting
Ⓢ General cutting
✱ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium cutting	VM	VNMG	160404–VM	●								●			●						●								0.08~0.45	0.50~3.50
			160408–VM	●						●	●	●			●						●	●		●		●			0.10~0.50	1.00~4.00
			160412–VM																											0.20~0.50	1.50~4.00
			220404–VM																											0.08~0.45	1.00~5.00
			220408–VM																											0.10~0.50	1.50~5.00
Medium to finishing	VQ [Cermet]	VNMG	160404–VQ	●	●	●	●																							0.10~0.40	0.50~3.50
			160408–VQ	●	●	●	●																							0.12~0.45	0.50~3.50
			160412–VQ																											0.15~0.45	0.80~3.50
Medium cutting	MK	VNMG	160404–MK											●			●													0.08~0.45	0.50~3.00
			160408–MK											●		●	●													0.10~0.50	1.00~3.50
			160412–MK														●													0.20~0.50	1.50~4.00
Medium cutting	MM	VNMG	160404–MM																●	●	●				●	●				0.10~0.40	0.50~4.80
			160408–MM																●	●	●				●					0.12~0.45	0.50~4.80
			160412–MM																											0.15~0.60	0.50~4.00
Medium cutting	RM	VNMG	160404–RM																											0.10~0.50	2.00~5.00
			160408–RM																											0.15~0.55	2.00~5.00
			160412–RM																											0.20~0.60	2.00~5.00
Medium cutting	VP3	VNMG	160404–VP3																		●	●	●	●	●				●	0.05~0.30	0.10~3.00
			160408–VP3																		●	●	●	●	●			●		0.10~0.45	0.50~5.00
			160412–VP3																											0.20~0.40	0.50~3.50
Medium cutting	VP3	VNGG	160404–VP3																											0.05~0.30	0.10~3.00
			160408–VP3																											0.10~0.45	0.50~5.00
Medium to finishing	HA	VNGG	160408–HA																					●						0.10~0.40	0.80~3.50

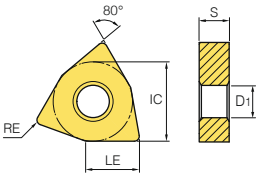
● : Stock item

External Tool Holder			
Double Clamp	Page	Multi Lock	Page
DVJNR/L	B94	MVJNR/L	B112
DVVNN	B95	MVQNR/L	B113
		MVVNN	B113

Boring Bar	
Multi Lock	Page
MVUNR/L	B131

WN○○

Trigon 80° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
06	9.525	0.4~0.8	3.97~4.76	6.515	3.81
08	12.7	0.4~1.6	4.76	8.687	5.16

Workpiece		
Steel	P	● ✱ ● ◒ ● ◒ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱
Stainless steel	M	✱ ✱ ✱ ✱ ● ◒ ● ◒ ✱ ✱ ● ◒ ✱ ● ◒ ◒ ✱
Cast iron	K	● ✱ ● ◒ ✱ ✱ ✱ ✱ ● ◒ ✱ ✱ ● ◒
Non-ferrous metal	N	● ◒
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ◒ ◒ ✱ ● ◒
Hardened steel	H	● ◒

Machining types
- ● Continuous cutting
- ◒ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	Coated NC3215	Coated NC3225	Coated NC3120	Coated NC3030	Coated NC3235	Coated NC5320	Coated NC5330	Coated NC6310	Coated NC6315	Coated NC9115	Coated NC9125	Coated NC9135	Coated PC5300	Coated PC5400	Coated PC8105	Coated PC8110	Coated PC8115	Coated PC9030	Coated PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Finishing	VB	WNMG	080404–VB						●	●																				0.10~0.35	0.30~1.50
			080408–VB						●	●				●	●															0.15~0.45	0.50~2.00
			080412–VB						●					●																0.18~0.45	0.80~2.50
Finishing	VF	WNMG	060404–VF		●										●															0.07~0.30	0.50~1.50
			060408–VF		●																									0.10~0.40	0.50~1.50
			080404–VF								●				●															0.07~0.30	0.50~1.50
			080408–VF												●															0.10~0.40	0.50~1.50
			080412–VF																											0.20~0.50	0.50~1.50
Finishing	VL	WNMG	060404–VL																											0.05~0.25	0.20~1.50
			080404–VL																											0.05~0.25	0.10~1.00
			080408–VL							●																				0.10~0.35	0.20~1.50
Medium to finishing	LP	WNMG	060404–LP																											0.07~0.30	0.30~1.50
			060408–LP						●	●																				0.10~0.30	0.30~1.50
			080404–LP						●	●					●															0.10~0.35	0.30~2.00
			080408–LP						●	●					●															0.10~0.40	0.50~2.50
			080412–LP						●	●																				0.13~0.45	0.80~3.00
Medium to finishing	CP	WNMG	060404–CP																											0.08~0.30	0.40~3.00
			060408–CP																											0.10~0.30	0.40~3.00
			080404–CP						●	●																				0.10~0.35	0.50~3.50
			080408–CP						●	●				●																0.12~0.35	0.50~3.50
			080412–CP						●	●				●																0.13~0.35	0.80~3.50
			080416–CP						●	●				●																0.14~0.35	0.80~3.50
Medium to finishing	VC	WNMG	080404–VC						●																					0.15~0.40	0.15~4.00
			080408–VC						●	●	●			●																0.15~0.45	0.15~4.50
			080412–VC							●	●			●																0.15~0.45	0.15~4.50

● : Stock item

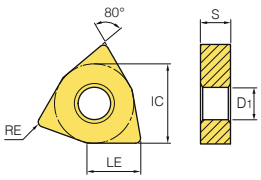
External Tool Holder							
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page
DWLNR/L	B95	PWLNR/L	B102	WWLNR/L	B104	MWLNR/L	B113

KHP Coolant	
TH	Page
PWLNR/L	B149

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DWLNR/L	B126	PWLNR/L	B128	MWLNR/L	B131

WN○○

Trigon 80° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
06	9.525	0.4~1.2	3.97~4.76	6.515	3.81
08	12.7	0.4~1.6	4.76	8.687	5.16

Workpiece			Machining types
Steel	P	● ⧓ ● ⧗ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓	● Continuous cutting
Stainless steel	M	⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓	⧗ General cutting
Cast iron	K	● ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧓ ● ⧗	⧓ Interrupted cutting
Non-ferrous metal	N	● ⧗	
Heat resistant alloy, Titanium alloy	S	● ⧓ ⧓ ● ⧗ ⧗ ⧓ ● ⧗	
Hardened steel	H	● ⧗ ⧗ ● ⧗	

Application	Picture	Designation	Cermet		Coated		Coated																		Uncoated		Cutting Condition	
			CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium cutting	HM	WNMG 060404–HM														●												0.15~0.43	0.42~3.00
		060408–HM								●	●														●				0.10~0.50	1.00~4.00
		080404–HM								●	●														●				0.15~0.42	0.50~4.20
		080408–HM						●	●	●	●			●											●				0.10~0.50	1.00~5.00
		080412–HM																							●				0.10~0.50	1.00~5.00
Medium cutting	MP	WNMG 060404–MP						●	●					●				●											0.10~0.40	0.40~2.80
		060408–MP						●	●					●	●			●											0.15~0.45	0.50~3.00
		060412–MP																											0.15~0.50	0.80~3.20
		080404–MP					●	●	●					●			●	●	●			●	●	●					0.10~0.40	0.40~4.00
		080408–MP					●	●	●			●	●	●			●	●	●			●	●	●					0.15~0.45	0.50~4.50
		080412–MP					●	●	●				●	●			●	●	●				●						0.15~0.50	0.80~5.00
		080416–MP					●	●	●				●																0.18~0.55	0.10~5.00
Medium cutting	VM	WNMG 060404–VM												●						●	●								0.10~0.45	1.00~3.50
		060408–VM							●	●				●						●	●								0.10~0.50	1.00~4.00
		060412–VM																											0.13~0.60	1.30~4.00
		080404–VM								●				●						●	●								0.05~0.30	0.90~5.00
		080408–VM							●	●	●			●						●	●		●		●				0.10~0.50	1.00~5.00
		080412–VM								●				●						●									0.10~0.50	1.00~5.00
		080416–VM																											0.10~0.50	1.20~5.00
Medium to roughing	B25	WNMG 080404–B25							●																				0.17~0.45	1.00~5.00
		080408–B25						●	●		●			●															0.23~0.60	1.50~5.00
		080412–B25						●	●																				0.25~0.60	2.00~5.00
Roughing	GR	WNMG 080404–GR																											0.15~0.50	0.08~6.00
		080408–GR							●	●	●	●	●	●	●														0.20~0.50	1.00~7.00
		080412–GR						●	●	●	●		●	●	●														0.25~0.50	1.30~7.00
		080416–GR											●																0.25~0.60	1.80~6.00

● : Stock item

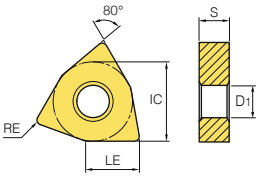
External Tool Holder							
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page
DWLNR/L	B95	PWLNR/L	B102	WWLNR/L	B104	MWLNR/L	B113

KHP Coolant	
TH	Page
PWLNR/L	B149

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DWLNR/L	B126	PWLNR/L	B128	MWLNR/L	B131

WN○○

Trigon 80° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
06	9.525	0.4~1.2	4.76	6.515	3.81
08	12.7	0.4~1.6	4.76	8.687	5.16

Workpiece			Machining types
Steel	P	● ✱ ● ◒ ● ◒ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ◒ ✱ ✱ ● ◒ ◒ ✱ ✱ ● ◒	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ● ◒ ✱ ✱ ● ◒ ◒ ✱ ✱ ● ◒ ◒ ✱ ✱	◒ General cutting
Cast iron	K	● ✱ ● ◒ ✱ ✱ ✱ ✱ ● ◒ ✱ ✱ ✱ ✱ ● ◒ ◒ ✱ ✱ ● ◒	✱ Interrupted cutting
Non-ferrous metal	N	● ◒ ✱ ✱ ● ◒	
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ◒ ◒ ✱ ✱ ● ◒	
Hardened steel	H	● ◒ ◒ ✱ ● ◒	

Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium to finishing	VQ [Cermet]	WNMG	060404–VQ																									0.05~0.30	0.50~4.00
			060408–VQ		●																							0.08~0.30	0.80~4.00
			060412–VQ																									0.10~0.30	1.00~4.00
			080404–VQ	●	●																							0.05~0.30	0.50~4.00
			080408–VQ	●	●	●																						0.08~0.40	0.80~4.00
			080412–VQ																									0.10~0.35	0.80~3.50
Medium cutting	MK	WNMG	060408–MK											●		●	●											0.08~0.30	0.80~2.50
			080404–MK											●			●											0.10~0.45	1.00~3.00
			080408–MK														●											0.10~0.50	1.00~3.50
			080412–MK											●			●											0.10~0.50	1.00~4.00
			080416–MK																									0.13~0.50	1.20~4.20
Roughing		WNMA	060404																									0.10~0.30	0.50~3.00
			060408														●											0.10~0.30	0.50~3.00
			060412																									0.10~0.40	1.00~3.00
			080404														●											0.15~0.60	1.00~5.00
			080408														●											0.15~0.60	1.00~6.00
			080412														●											0.15~0.70	1.50~6.00
			080416																									0.15~0.70	1.50~6.00
Roughing	RK	WNMG	060408–RK																									0.10~0.40	1.00~3.50
			060412–RK																									0.23~0.40	1.50~5.00
			080404–RK														●											0.23~0.50	1.50~6.00
			080408–RK													●	●											0.23~0.53	1.50~6.00
			080412–RK													●	●											0.28~0.53	1.80~6.00
			080416–RK														●											0.25~0.60	2.00~6.00
Roughing	VR	WNMG	060408–VR																									0.20~0.40	1.00~6.00
			080404–VR																									0.20~0.50	0.80~7.00
			080408–VR																									0.25~0.55	1.20~7.00
			080412–VR																									0.30~0.60	1.50~7.00
			080416–VR																									0.40~0.60	1.50~4.00

● : Stock item

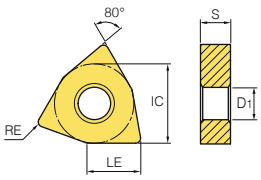
External Tool Holder							
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page
DWLNR/L	B95	PWLNR/L	B102	WWLNR/L	B104	MWLNR/L	B113

KHP Coolant	
TH	Page
PWLNR/L	B149

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DWLNR/L	B126	PWLNR/L	B128	MWLNR/L	B131

WN○○

Trigon 80° Negative

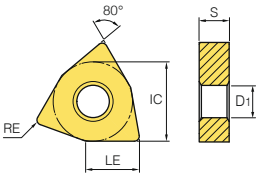


Dimensions (mm)					
Size	IC	RE	S	LE	D1
06	9.525	0.4~1.2	3.97~4.76	6.515	3.81
08	12.7	0.4~1.2	4.76	8.687	5.16
13	19.05	1.2	6.35	13.031	7.93

Workpiece			Machining types
Steel	P	● ✱ ● ●	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ● ● ● ✱ ✱ ● ● ●

WN○○

Trigon 80° Negative



Dimensions (mm)					
Size	IC	RE	S	LE	D1
06	9.525	0.4~1.2	4.76	6.515	3.81
08	12.7	0.4~1.2	4.76	8.687	5.16
10	15.875	0.8	6.35	10.859	6.35
13	19.05	1.2	6.35	13.031	7.93

Workpiece			Machining types
Steel	P	● ✱ ● ⬌ ● ⬌ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ●	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ● ⬌ ✱ ✱ ✱ ✱ ✱ ● ⬌	⬌ General cutting
Cast iron	K	● ✱ ● ⬌ ✱ ✱ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌	✱ Interrupted cutting
Non-ferrous metal	N	● ⬌
Heat resistant alloy, Titanium alloy	S	● ⬌ ✱ ✱ ● ⬌ ⬌ ✱ ● ⬌
Hardened steel	H	● ⬌ ⬌ ● ⬌

Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium to finishing	HA	**WNMG**	060404–HA																						●	●		0.05~0.30	0.10~3.00
			060408–HA																						●	●		0.10~0.40	0.80~3.50
			080404–HA																						●	●		0.05~0.30	0.80~3.50
			080408–HA																						●	●		0.10~0.40	0.80~3.50
			080412–HA																									0.13~0.55	0.80~3.50
Finishing	VW	**WNMG**	060404–VW																									0.05~0.30	0.40~3.00
			060408–VW																									0.08~0.30	0.40~3.50
			080404–VW																									0.10~0.30	0.50~3.00
			080408–VW																									0.15~0.50	0.50~4.00
	[Wiper]		080412–VW																									0.18~0.50	1.00~4.00
Medium cutting	LW	**WNMG**	060408–LW																									0.15~0.60	0.50~3.50
			060412–LW																									0.20~0.70	0.80~3.50
			080408–LW																									0.15~0.60	1.00~5.00
	[Wiper]		080412–LW																									0.20~0.70	1.00~6.00
Medium to finishing	SR	**WNMX**	080404R–SR																									0.10~0.35	0.70~3.00
			080408R–SR																									0.12~0.40	1.00~3.00
			080404L–SR																									0.10~0.35	0.70~3.00
	[Shaft]		080408L–SR																									0.12~0.40	1.00~3.00
Medium cutting	SH	**WNMX**	080404R–SH																									0.15~0.30	1.00~4.00
			080408R–SH																									0.15~0.50	1.50~5.00
			080404L–SH																									0.15~0.30	1.00~4.00
	[Shaft]		080408L–SH																									0.15~0.50	1.50~5.00
Medium to roughing	B25	**WNMM**	100608–B25									●																0.30~0.80	3.00~8.00
			130612–B25																									0.40~0.90	4.00~10.00

● : Stock item

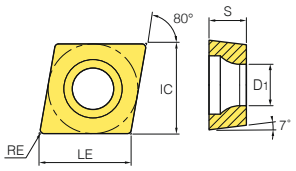
External Tool Holder							
Double Clamp	Page	Lever Lock	Page	Wedge Clamp	Page	Multi Lock	Page
DWLNR/L	B95	PWLNR/L	B102	WWLNR/L	B104	MWLNR/L	B113

KHP Coolant	
TH	Page
PWLNR/L	B149

Boring Bar					
Double Clamp	Page	Lever Lock	Page	Multi Lock	Page
DWLNR/L	B126	PWLNR/L	B128	MWLNR/L	B131

CC○○

Rhombic 80° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
06	6.35	0.2~0.8	2.38	6.448	2.8
09	9.525	0.2~0.8	3.97	9.672	4.4
12	12.7	0.4~1.2	4.76	12.896	5.5

Workpiece			Machining types
	Steel	P	● Continuous cutting
	Stainless steel	M	⧓ General cutting
	Cast iron	K	⧑ Interrupted cutting
	Non-ferrous metal	N	
	Heat resistant alloy, Titanium alloy	S	
	Hardened steel	H	

Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	FP [Mild steel]	CCMT	060202–FP		●				●																				0.01~0.10	0.05~0.80
			060204–FP	●	●	●	●		●	●									●					●					0.01~0.10	0.10~0.90
			09T302–FP		●				●																				0.01~0.10	0.05~1.00
			09T304–FP	●	●	●	●		●	●									●										0.01~0.10	0.10~1.00
			09T308–FP	●					●	●														●					0.04~0.12	0.10~1.00
Finishing	VF	CCMT	060202–VF			●				●																				0.05~0.20	0.30~1.00
			060204–VF	●	●					●											●			●						0.10~0.25	0.30~1.00
			09T302–VF							●																				0.04~0.16	0.80~1.50
			09T304–VF	●	●					●											●			●						0.05~0.20	0.30~1.50
			09T308–VF		●					●					●						●									0.10~0.25	0.30~1.50
			120404–VF							●																				0.07~0.22	0.10~2.00
사상용	VL	CCMT	060202–VL																											0.02~0.10	0.06~0.80
			060204–VL	●	●	●	●	●	●	●					●			●	●	●	●		●	●	●					0.04~0.10	0.08~0.90
			060208–VL					●	●	●									●											0.06~0.12	0.10~1.00
			09T304–VL	●	●	●	●		●	●								●	●		●			●	●			●	●	0.05~0.10	0.10~1.00
			09T308–VL	●		●	●		●	●									●		●	●	●	●	●			●	●	0.08~0.15	0.10~1.00
			120404–VL																											0.06~0.12	0.30~1.50
			120408–VL																											0.08~0.15	0.30~1.50
			120412–VL																											0.08~0.15	0.30~1.50
Medium to finishing	HMP	CCMT	060202–HMP	●	●																●			●		●				0.03~0.12	0.10~1.50
			060204–HMP		●						●	●			●						●			●		●				0.06~0.17	0.20~2.40
			060208–HMP		●						●	●			●						●			●		●				0.08~0.23	0.40~2.40
			09T302–HMP		●																			●		●				0.07~0.22	0.10~2.00
			09T304–HMP		●					●	●	●			●		●				●			●		●				0.08~0.23	0.30~3.00
			09T308–HMP		●						●	●			●						●			●		●				0.10~0.30	0.50~3.00
			120404–HMP		●					●	●	●									●					●				0.09~0.27	0.30~3.60
			120408–HMP								●	●			●						●					●				0.24~0.36	1.00~3.60
			120412–HMP																											0.14~0.43	0.70~3.60
Medium to finishing	MP	CCMT	060202–MP	●	●	●	●		●	●					●			●	●	●	●			●	●					0.04~0.12	0.20~1.50
			060204–MP	●	●	●	●	●	●	●				●	●		●	●	●	●	●	●	●	●		●				0.05~0.15	0.30~1.50
			060208–MP					●						●			●													0.07~0.15	0.50~2.00
			09T302–MP	●	●		●		●	●					●				●	●	●	●	●	●	●					0.07~0.15	0.30~2.00
			09T304–MP	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●	●	●	●		●			0.08~0.25	0.50~2.50
			09T308–MP	●	●	●	●	●	●	●			●		●	●	●	●	●	●	●	●	●	●	●		●			0.10~0.30	0.50~2.50
			120404–MP							●				●			●		●	●										0.10~0.30	0.50~3.50
			120408–MP							●				●		●	●		●	●										0.15~0.35	0.80~3.50
			120412–MP											●					●											0.25~0.40	1.00~3.50

● : Stock item

External Tool Holder	
Screw on	Page
SCACR/L	B114
SCLCR/L	B114

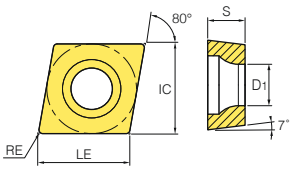
Auto Tool	
TH	Page
SCACR/L	B168
SCLCR/L	B168

Boring Bar	
Screw on	Page
SCLCR/L	B132

Compact Mini	
TH	Page
SCLCR/L	B142

CC○○

Rhombic 80° Positive
Relief Angle: 7°

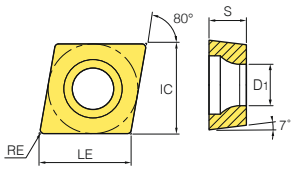


Dimensions (mm)					
Size	IC	RE	S	LE	D1
06	6.35	0.2~0.8	2.38	6.448	2.8
09	9.525	0.2~0.8	3.97	9.672	4.4
12	12.7	0.4~1.2	4.76	12.896	5.5

| Workpiece | | | | |

CC○○

Rhombic 80° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
03	*3.5	0.05~0.4	1.39	3.554	1.9
04	*4.3	0.05~0.4	1.79	4.366	2.3
06	6.35	0.1~0.4	2.38	6.448	2.8
09	9.525	0.1~0.4	3.97	9.672	4.4

*: The IC and S are special dimensions.

Workpiece			Machining types
	Steel	P	● Continuous cutting
	Stainless steel	M	⬌ General cutting
	Cast iron	K	✱ Interrupted cutting
	Non-ferrous metal	N	
	Heat resistant alloy, Titanium alloy	S	
	Hardened steel	H	

Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	VP1 [High precision]	CCGT	060201–VP1																		●		●	●	●			●		0.05~0.06	0.06~1.00
			060202–VP1																		●		●	●	●					0.03~0.10	0.08~1.50
			060204–VP1																		●		●	●	●			●		0.05~0.12	0.10~1.50
			09T301–VP1																		●		●	●	●			●		0.03~0.13	0.06~1.00
			09T302–VP1																		●		●	●	●					0.04~0.15	0.08~1.50
			09T304–VP1																		●		●	●	●			●		0.06~0.20	0.10~1.50
Finishing	VP1 [Ultra high precision]	CCGT	060201MFN–VP1																				●							0.03~0.06	0.06~1.00
			060202MFN–VP1																		●		●							0.03~0.10	0.08~1.50
			060204MFN–VP1																				●							0.05~0.12	0.10~1.50
			09T301MFN–VP1																		●		●							0.03~0.13	0.06~1.00
			09T302MFN–VP1																		●		●							0.04~0.15	0.08~1.50
			09T304MFN–VP1																		●		●							0.06~0.20	0.10~1.50
Finishing	*	CCET	0301005R																											0.01~0.05	0.10~0.30
			030101R																											0.01~0.05	0.10~0.30
			030102R																											0.01~0.05	0.10~0.30
			030104R																											0.01~0.05	0.10~0.30
			0401005R																											0.01~0.10	0.10~0.50
			040101R																											0.01~0.10	0.10~0.50
			040102R																											0.01~0.10	0.10~0.50
			040104R																											0.01~0.10	0.10~0.50
			0301005L																											0.01~0.05	0.10~0.30
			030101L																											0.01~0.05	0.10~0.30
			030102L	●	●																					●		●		0.01~0.05	0.10~0.30
			030104L		●																					●				0.01~0.05	0.10~0.30
			0401005L																											0.01~0.10	0.10~0.50
			040101L																											0.01~0.10	0.10~0.50
			040102L	●	●																					●		●		0.01~0.10	0.10~0.50
			040104L		●																					●				0.01~0.10	0.10~0.50

●: Stock item

External Tool Holder	
Screw on	Page
SCACR/L	B114
SCLCR/L	B114

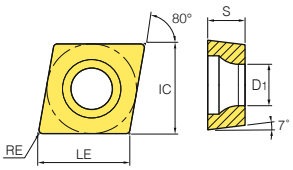
Auto Tool	
TH	Page
SCACR/L	B168
SCLCR/L	B168

Boring Bar	
Screw on	Page
SCLCR/L	B132

Compact Mini	
TH	Page
SCLCR/L	B142

CC○○

Rhombic 80° Positive
Relief Angle: 7°



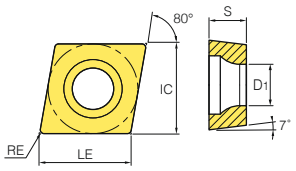
Dimensions (mm)					
Size	IC	RE	S	LE	D1
*03	3.5	0.03~0.4	1.39	3.554	1.9
*04	4.3	0.03~0.4	1.79	4.366	2.3
06	6.35	0.03~0.2	2.38	6.448	2.8
09	9.525	0.03~0.2	3.97	9.672	4.4

* : The IC and S are special dimensions.

Workpiece			Machining types
Steel	P	● ✱ ● ◆ ● ◆ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ◆ ✱ ● ◆ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱

CC ○○

Rhombic 80° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
06	6.35	0.03~0.4	2.38	6.448	2.8
09	9.525	0.03~0.4	3.97	9.672	4.4

Workpiece			P	M	K	N	S	H
	Steel	P	●	⧓				
	Stainless steel	M		⧓				
	Cast iron	K	●	⧓				
	Non-ferrous metal	N						
	Heat resistant alloy, Titanium alloy	S						
	Hardened steel	H						

Machining types
- ● Continuous cutting
- ⧓ General cutting
- ⧔ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium to finishing	KM [High precision]	CCGT	0602003R-KM																		●			●					0.01~0.06	0.04~1.30
			060201R-KM																		●								0.02~0.08	0.05~1.50
			060202R-KM																		●			●		●			0.03~0.11	0.06~1.70
			060204R-KM																		●			●					0.04~0.13	0.04~1.70
			09T3003R-KM																		●			●					0.02~0.08	0.06~1.50
			09T301R-KM																		●			●					0.03~0.11	0.06~1.70
			09T302R-KM																		●			●					0.04~0.15	0.08~2.00
			09T304R-KM																		●			●					0.05~0.16	0.10~2.00
			0602003L-KM																		●			●					0.01~0.06	0.04~1.30
			060201L-KM																		●								0.02~0.08	0.05~1.50
			060202L-KM																		●			●					0.03~0.11	0.06~1.70
			060204L-KM																		●			●					0.04~0.13	0.04~1.70
			09T3003L-KM																		●			●					0.02~0.08	0.06~1.50
			09T301L-KM																		●								0.03~0.11	0.06~1.70
			09T302L-KM																		●			●					0.04~0.15	0.08~2.00
			09T304L-KM																		●			●					0.05~0.16	0.10~2.00
Medium to finishing	KM [Ultra high precision]	CCET	0602005MFR-KM																		●								0.01~0.06	0.04~1.30
			060201MFR-KM																		●			●					0.02~0.08	0.05~1.50
			060202MFR-KM																		●			●					0.03~0.11	0.06~1.70
			09T3005MFR-KM																										0.02~0.08	0.05~1.50
			09T301MFR-KM																		●			●					0.03~0.11	0.06~1.70
			09T302MFR-KM																		●			●					0.04~0.15	0.08~2.00
			0602005MFL-KM																		●								0.01~0.06	0.04~1.30
			060201MFL-KM																										0.02~0.08	0.05~1.50
			060202MFL-KM																		●			●					0.03~0.11	0.06~1.70
			09T3005MFL-KM																					●					0.02~0.08	0.05~1.50
			09T301MFL-KM																					●					0.03~0.11	0.06~1.70
			09T302MFL-KM																		●			●					0.04~0.15	0.08~2.00

● : Stock item

External Tool Holder	
Screw on	Page
SCACR/L	B114
SCLCR/L	B114

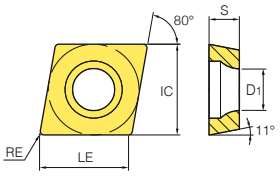
Auto Tool	
TH	Page
SCACR/L	B168
SCLCR/L	B168

Boring Bar	
Screw on	Page
SCLCR/L	B132

Compact Mini	
TH	Page
SCLCR/L	B142

CP○○

Rhombic 80° Positive
Relief Angle: 11°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
06	6.35	0.4	2.38	6.448	2.8
08	7.94	0.4~0.8	2.38	8.062	3.4
09	9.525	0.4~0.8	3.18	9.672	4.4

Workpiece			Machining types
Steel	P	● ✱ ● ⬌ ● ⬌ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ⬌ ✱ ● ⬌ ✱ ✱ ✱ ● ⬌	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ● ⬌ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱	⬌ General cutting
Cast iron	K	● ✱ ● ⬌ ✱ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌	✱ Interrupted cutting
Non-ferrous metal	N	✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ⬌ ⬌ ✱ ✱ ● ⬌ ⬌ ✱ ● ⬌ ⬌ ✱ ● ⬌ ⬌
Hardened steel	H	● ⬌ ⬌ ⬌ ● ⬌

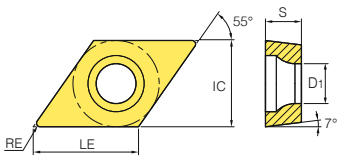
Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	VF	CPMT	080204–VF																									0.05~0.20	0.30~1.20
			080208–VF																									0.10~0.25	0.30~1.20
			090304–VF												●													0.05~0.20	0.30~1.50
			090308–VF				●								●													0.10~0.25	0.30~1.50
Finishing	VL	CPMT	080204–VL																									0.03~0.08	0.08~1.00
			080208–VL																									0.04~0.12	0.10~1.00
			090304–VL																									0.05~0.10	0.10~1.00
			090308–VL																									0.08~0.15	0.10~1.00
Medium to finishing	HMP	CPGT	090308–HMP																									0.05~0.20	0.70~2.00
Medium cutting	C25	CPMT	060204–C25																									0.05~0.15	0.60~2.30
Finishing		CPGT	080202	●	●																							0.06~0.20	0.10~2.00
			080204	●	●					●																		0.08~0.20	0.30~2.00
			080208																									0.10~0.25	0.50~2.00
			090302																									0.04~0.20	0.30~1.50
			090304	●	●																							0.06~0.25	0.50~2.00
			090308																									0.08~0.30	0.70~2.50

● : Stock item

Boring Bar	
Screw on	Page
SCLPR/L	B133

DC○○

Rhombic 55° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
07	6.35	0.2~0.8	2.38	7.752	2.8
11	9.525	0.2~1.2	3.97	11.628	4.4

Workpiece			P																												
	Steel	P	●	✱	●	⇕	●	⇕	✱	✱	✱	✱	✱	✱						✱	✱											
	Stainless steel	M									✱	✱		✱			●	⇕	✱	✱	✱	●	⇕	⇕	⇕	✱	✱					
	Cast iron	K	●	✱	●	⇕							✱	✱	●	⇕				✱	✱										●	⇕
	Non-ferrous metal	N																													●	⇕
	Heat resistant alloy, Titanium alloy	S															●			✱	✱	●	⇕	⇕		✱					●	⇕
	Hardened steel	H																				●	⇕	⇕							●	⇕

Machining types
- ● Continuous cutting
- ⇕ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																						Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	FP [Mild steel]	DCMT	070202–FP						●																					0.01~0.10	0.05~0.80
			070204–FP	●	●	●			●	●									●					●						0.01~0.10	0.10~0.90
			070208–FP																											0.01~0.10	0.10~1.00
			11T302–FP		●				●																					0.01~0.10	0.05~1.00
			11T304–FP	●	●	●	●		●	●									●					●						0.01~0.10	0.10~1.00
			11T308–FP	●	●				●	●														●						0.04~0.12	0.10~1.00
Finishing	VF	DCMT	070202–VF							●														●						0.03~0.10	0.06~1.00
			070204–VF		●					●											●			●						0.05~0.20	0.30~1.20
			11T302–VF	●						●																				0.04~0.15	0.08~1.50
			11T304–VF	●	●					●											●			●						0.05~0.20	0.30~1.50
			11T308–VF	●	●																●			●						0.10~0.25	0.30~1.50
Finishing	VL	DCMT	070202–VL																											0.02~0.10	0.06~0.80
			070204–VL	●	●	●	●		●	●					●			●	●	●	●			●	●			●		0.04~0.10	0.08~0.90
			070208–VL						●	●					●						●									0.06~0.12	0.10~1.00
			11T302–VL																											0.03~0.10	0.07~0.80
			11T304–VL	●	●	●	●	●	●	●					●			●	●	●	●	●		●					●	0.05~0.10	0.10~1.00
			11T308–VL	●	●	●	●	●	●	●					●				●		●			●	●					0.08~0.15	0.10~1.00
			11T312–VL																											0.08~0.15	0.30~1.50
Medium to finishing	HMP	DCMT	070202–HMP									●														●				0.03~0.12	0.10~1.50
			070204–HMP		●						●	●			●						●			●		●				0.06~0.17	0.20~2.30
			070208–HMP								●	●														●				0.08~0.23	0.40~2.30
			11T302–HMP									●									●			●		●				0.04~0.22	0.10~2.00
			11T304–HMP		●					●	●	●			●						●			●		●				0.08~0.23	0.30~3.00
			11T308–HMP		●						●	●			●						●			●		●				0.10~0.30	0.50~3.00
Medium to finishing	MP	DCMT	070202–MP		●	●	●		●	●					●				●	●	●			●	●					0.04~0.12	0.12~1.80
			070204–MP	●	●	●	●	●	●	●					●			●	●	●	●	●	●	●	●					0.05~0.15	0.30~1.80
			070208–MP	●	●	●	●		●	●					●				●	●	●	●	●	●	●					0.08~0.22	0.30~1.80
			11T302–MP	●	●	●	●		●	●					●			●	●	●	●		●	●	●					0.04~0.15	0.30~2.00
			11T304–MP	●	●	●	●	●	●	●			●		●	●	●	●	●	●	●	●	●	●	●					0.08~0.20	0.50~2.30
			11T308–MP	●	●	●	●	●	●	●			●		●	●	●	●	●	●	●	●		●	●					0.10~0.30	0.50~2.30
			11T312–MP																											0.25~0.35	0.80~3.00

● : Stock item

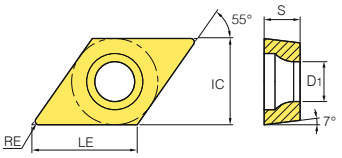
External Tool Holder	
Screw on	Page
SDACR/L	B114
SDJCR/L	B115
SDNCN	B115

Auto Tool	
TH	Page
SDJCR/L	B168
SDNCN	B169

Boring Bar	
Screw on	Page
SDQCR/L	B134
SDUCR/L	B135
SDZCR/L	B136

DC○○

Rhombic 55° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
07	6.35	0.2~0.8	2.38	7.752	2.8
11	9.525	0.2~0.8	3.97	11.628	4.4

Workpiece			Machining types
Steel	P	● ✱ ● ⬌ ● ⬌ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ● ⬌ ● ⬌ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ⬌ ⬌ ✱ ✱	⬌ General cutting
Cast iron	K	● ✱ ● ⬌ ✱ ✱ ✱ ✱ ● ⬌ ✱ ✱ ✱ ✱ ● ⬌ ⬌ ⬌ ● ⬌	✱ Interrupted cutting
Non-ferrous metal	N	● ⬌ ● ⬌ ✱ ✱ ✱ ✱ ● ⬌ ✱ ✱ ✱ ✱ ⬌ ⬌ ⬌ ⬌ ⬌	
Heat resistant alloy, Titanium alloy	S	● ⬌ ✱ ✱ ✱ ✱ ● ⬌ ⬌ ⬌ ✱ ✱ ⬌ ⬌	
Hardened steel	H	● ⬌ ⬌ ⬌ ⬌ ⬌	

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium cutting	C25	DCMT	070202–C25	●	●	●	●			●					●						●									0.03~0.15	0.30~2.00
			070204–C25	●	●	●	●		●	●		●	●		●		●				●	●		●		●				0.05~0.20	0.50~2.50
			070208–C25						●	●		●					●				●	●		●						0.06~0.25	0.80~2.50
			11T302–C25	●	●	●	●		●	●											●			●						0.04~0.25	0.50~2.50
			11T304–C25	●	●	●			●	●	●	●	●		●	●	●				●			●		●				0.08~0.30	0.80~3.00
			11T308–C25		●	●			●	●	●	●	●		●	●	●				●	●		●		●				0.10~0.30	1.00~3.00
Finishing	VP1	DCMT	070204–VP1																											0.05~0.12	0.10~1.50
			11T304–VP1																											0.06~0.20	0.10~1.50
			11T308–VP1																											0.08~0.23	0.10~1.50
Finishing	FS [High precision]	DCGT	070201–FS																		●			●						0.01~0.18	0.03~1.60
			070202–FS																		●			●						0.02~0.20	0.04~1.70
			11T301–FS																		●			●						0.01~0.20	0.04~1.80
			11T302–FS																		●			●						0.02~0.23	0.05~2.00
			11T304–FS																		●			●						0.04~0.23	0.08~2.00
			11T308–FS																		●			●						0.06~0.25	0.10~2.20
Finishing	FS [Ultra high precision]	DCGT	070201MFN–FS																											0.01~0.18	0.03~1.60
			070202MFN–FS																											0.02~0.20	0.04~1.70
			11T301MFN–FS																											0.01~0.20	0.04~1.80
			11T302MFN–FS																											0.02~0.23	0.05~2.00
			11T304MFN–FS																											0.04~0.23	0.08~2.00
			11T308MFN–FS																											0.06~0.25	0.10~2.20
Medium cutting	MS [High precision]	DCGT	11T301–MS																		●			●						0.02~0.23	0.05~2.00
			11T302–MS																		●			●						0.03~0.25	0.07~2.50
			11T304–MS																		●			●						0.05~0.25	0.09~2.50
Medium cutting	MS [Ultra high precision]	DCGT	11T301MFN–MS																		●			●						0.02~0.23	0.05~2.00
			11T302MFN–MS																											0.03~0.25	0.07~2.50
			11T304MFN–MS																		●			●						0.05~0.25	0.09~2.50

● : Stock item

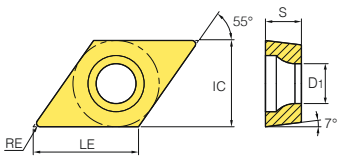
External Tool Holder	
Screw on	Page
SDACR/L	B114
SDJCR/L	B115
SDNCN	B115

Auto Tool	
TH	Page
SDJCR/L	B168
SDNCN	B169

Boring Bar	
Screw on	Page
SDQCR/L	B134
SDUCR/L	B135
SDZCR/L	B136

DC○○

Rhombic 55° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
07	6.35	0.03~0.4	2.38	7.752	2.8
11	9.525	0.03~0.4	3.97	11.628	4.4

Workpiece			Machining types
Steel	P	● ⧓ ● ⧗ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓	● Continuous cutting
Stainless steel	M	⧓ ⧓ ⧓ ● ⧗ ⧓ ● ⧗ ⧓ ⧗ ⧗ ⧗ ⧓ ⧓	⧗ General cutting
Cast iron	K	● ⧓ ● ⧗ ⧓ ⧓ ● ⧗ ⧓ ⧓ ⧗ ⧗ ⧗ ⧗	⧓ Interrupted cutting
Non-ferrous metal	N	● ⧗ ● ⧗
Heat resistant alloy, Titanium alloy	S	● ⧓ ⧓ ● ⧗ ⧗ ⧓ ● ⧗
Hardened steel	H	● ⧗ ⧗ ● ⧗

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	VP1 [High precision]	DCGT	070201–VP1																		●		●	●	●				0.03~0.06	0.06~1.00
			070202–VP1																		●			●	●			●		0.03~0.10	0.08~1.50
			070204–VP1																		●		●	●	●					0.05~0.12	0.10~1.50
			11T301–VP1																		●			●						0.03~0.13	0.06~1.00
			11T302–VP1																		●		●	●	●			●		0.04~0.15	0.08~1.50
			11T304–VP1																		●		●	●	●			●		0.06~0.20	0.10~1.50
Finishing	VP1 [Ultra high precision]	DCGT	070201MFN–VP1																					●						0.03~0.06	0.06~1.00
			070202MFN–VP1																		●			●						0.03~0.10	0.08~1.50
			070204MFN–VP1																					●						0.05~0.12	0.10~1.50
			11T301MFN–VP1																					●						0.03~0.13	0.06~1.00
			11T302MFN–VP1																					●						0.04~0.15	0.08~1.50
			11T304MFN–VP1																		●			●						0.06~0.20	0.10~1.50
Finishing	KF [High precision]	DCGT	0702003R–KF																		●			●						0.01~0.06	0.04~1.30
			070201R–KF																		●									0.02~0.08	0.05~1.50
			070202R–KF																		●			●						0.03~0.11	0.06~1.50
			070204R–KF																		●			●						0.04~0.13	0.04~1.70
			11T3003R–KF																		●			●						0.02~0.08	0.05~1.50
			11T301R–KF																		●			●						0.03~0.11	0.06~1.70
			11T302R–KF																		●			●		●				0.04~0.15	0.08~2.00
			11T304R–KF																		●			●						0.05~0.16	0.10~2.00
			0702003L–KF																		●			●						0.01~0.06	0.04~1.30
			070201L–KF																		●									0.02~0.08	0.05~1.50
			070202L–KF																		●									0.03~0.11	0.06~1.50
			070204L–KF																		●			●						0.04~0.13	0.04~1.70
			11T3003L–KF																		●			●						0.02~0.08	0.05~1.50
			11T301L–KF																		●									0.03~0.11	0.06~1.70
			11T302L–KF																		●			●						0.04~0.15	0.08~2.00
			11T304L–KF																		●			●						0.05~0.16	0.10~2.00
Finishing	KF [Ultra high precision]	DCET	0702005MFR-KF																		●			●						0.01~0.06	0.04~1.30
			070201MFR-KF																					●						0.02~0.08	0.05~1.50
			070202MFR-KF																					●						0.03~0.11	0.06~1.70
			11T3005MFR-KF																		●			●						0.02~0.08	0.05~1.50
			11T301MFR-KF																					●						0.03~0.11	0.06~1.70
			11T302MFR-KF																		●			●						0.04~0.15	0.08~2.00
			0702005MFL-KF																					●						0.01~0.06	0.04~1.30
			070201MFL-KF																											0.02~0.08	0.05~1.50
			070202MFL-KF																											0.03~0.11	0.06~1.70
			11T3005MFL-KF																		●			●						0.02~0.08	0.05~1.50
			11T301MFL-KF																											0.03~0.11	0.06~1.70
			11T302MFL-KF																											0.04~0.15	0.08~2.00

● : Stock item

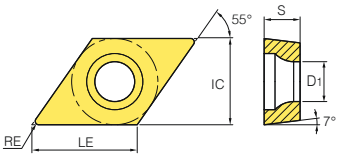
External Tool Holder	
Screw on	Page
SDACR/L	B114
SDJCR/L	B115
SDNCN	B115

Auto Tool	
TH	Page
SDJCR/L	B168
SDNCN	B169

Boring Bar	
Screw on	Page
SDQCR/L	B134
SDUCR/L	B135
SDZCR/L	B136

DC○○

Rhombic 55° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
07	6.35	0.03~0.4	2.38	7.752	2.8
11	9.525	0.03~0.4	3.97	11.628	4.4

Workpiece			
Steel	P	● ✱	● ●
Stainless steel	M		✱ ✱
Cast iron	K	● ✱	● ●
Non-ferrous metal	N		
Heat resistant alloy, Titanium alloy	S		
Hardened steel	H		

Machining types
● Continuous cutting
● General cutting
✱ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium to finishing	KM [High precision]	DCGT	0702003R-KM																		●			●					0.01~0.06	0.04~1.30
			070201R-KM																		●			●					0.02~0.08	0.05~1.50
			070202R-KM																		●			●					0.03~0.11	0.06~1.50
			070204R-KM																		●			●					0.04~0.13	0.04~1.70
			11T3003R-KM																		●			●					0.02~0.08	0.05~1.50
			11T301R-KM																		●			●					0.03~0.11	0.06~1.70
			11T302R-KM																		●			●					0.04~0.15	0.08~2.00
			11T304R-KM																		●			●					0.05~0.16	0.10~2.00
			0702003L-KM																		●			●					0.01~0.06	0.04~1.30
			070201L-KM																		●								0.02~0.08	0.05~1.50
			070202L-KM																		●								0.03~0.11	0.06~1.50
			070204L-KM																		●								0.04~0.13	0.04~1.70
			11T3003L-KM																		●								0.02~0.08	0.05~1.50
			11T301L-KM																		●								0.03~0.11	0.06~1.70
			11T302L-KM																		●			●					0.04~0.15	0.08~2.00
			11T304L-KM																		●								0.05~0.16	0.10~2.00
Medium to finishing	KM [Ultra high precision]	DCET	0702005MFR-KM																										0.01~0.06	0.04~1.30
			070201MFR-KM																		●			●					0.02~0.08	0.05~1.50
			070202MFR-KM																		●			●					0.03~0.11	0.06~1.70
			11T3005MFR-KM																										0.02~0.08	0.05~1.50
			11T301MFR-KM																		●			●					0.03~0.11	0.06~1.70
			11T302MFR-KM																		●			●					0.04~0.15	0.08~2.00
			0702005MFL-KM																					●					0.01~0.06	0.04~1.30
			070201MFL-KM																		●								0.02~0.08	0.05~1.50
			070202MFL-KM																		●			●					0.03~0.11	0.06~1.70
			11T3005MFL-KM																										0.02~0.08	0.05~1.50
			11T301MFL-KM																		●			●					0.03~0.11	0.06~1.70
			11T302MFL-KM																		●								0.04~0.15	0.08~2.00

● : Stock item

External Tool Holder	
Screw on	Page
SDACR/L	B114
SDJCR/L	B115
SDNCN	B115

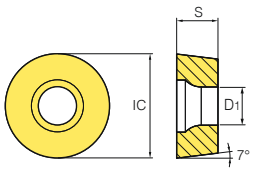
Auto Tool	
TH	Page
SDJCR/L	B168
SDNCN	B169

Boring Bar	
Screw on	Page
SDQCR/L	B134
SDUCR/L	B135
SDZCR/L	B136

RC○○

Round R° Positive

Relief Angle: 7°



Dimensions (mm)			
Size	IC	S	D1
8	8	3.18	3.35
10	10	3.97	3.6
12	12	4.76	4.2
16	16	6.35	5.2
20	20	6.35	6.5
25	25	7.94	7.25
32	32	9.52	9.55

Workpiece			CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05
	Steel	P	●	✱	●	⬌	●	⬌	✱	✱	✱	✱	✱	✱						✱	✱							
	Stainless steel	M									✱	✱		✱			●	⬌	✱	✱	✱	●	⬌	⬌	✱	✱		
	Cast iron	K	●	✱	●	⬌							✱	✱	●	⬌				✱	✱						●	⬌
	Non-ferrous metal	N																									●	⬌
	Heat resistant alloy, Titanium alloy	S																●		✱	✱	●	⬌	⬌		✱	●	⬌
	Hardened steel	H																				●	⬌	⬌			●	⬌

Machining types
- ● Continuous cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																				Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium cutting	VM	RCMT	0803M0–VM																											0.05~0.30	0.80~2.50
			10T3M0–VM																											0.05~0.35	0.90~3.00
			1204M0–VM																											0.10~0.50	1.00~3.50
			1606M0–VM																											0.13~0.60	1.30~6.50
Medium cutting		RCMX	1003M0							●		●			●		●													0.25~0.50	1.50~4.00
			1204M0							●	●	●	●		●		●													0.30~0.60	2.50~5.00
			1606M0							●		●			●		●													0.40~0.70	3.00~7.00
			2006M0									●					●													0.48~0.90	3.50~9.00
			2507M0									●					●													0.55~1.20	4.00~12.00
			3209M0									●					●													0.65~1.50	5.00~15.00

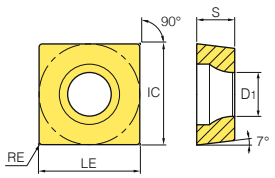
● : Stock item

External Tool Holder			
Lever Lock	Page	Screw on	Page
PRDCN	B98	SRDCN	B115
PRGCR/L	B99	SRGCR/L	B115

KHP Coolant	
TH	Page
SRGCR/L	B149

SC○○

Square 90° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	9.525	0.4~0.8	3.97	9.525	4.4
12	12.7	0.4~1.2	4.76	12.7	5.5

Workpiece		
Steel	P	● ✱ ● ⬌ ● ⬌ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ● ⬌ ✱ ✱ ✱ ✱ ● ⬌ ⬌ ✱ ✱
Cast iron	K	● ✱ ● ⬌ ✱ ✱ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌ ⬌ ⬌ ✱ ✱ ● ⬌
Non-ferrous metal	N	● ⬌
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ⬌ ⬌ ✱ ● ⬌
Hardened steel	H	● ⬌ ⬌ ● ⬌

Machining types
- ● Continuous cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	FP [Mild steel]	SCMT	09T304–FP		●				●																				0.01~0.10	0.10~1.00
			09T308–FP	●	●				●	●									●					●					0.04~0.12	0.10~1.00
Finishing	VF	SCMT	09T304–VF																		●								0.05~0.20	0.30~1.50
Finishing	VL	SCMT	09T304–VL	●	●														●		●			●					0.05~0.10	0.10~1.00
			09T308–VL		●					●					●						●	●		●					0.08~0.15	0.10~1.00
Medium to finishing	HMP	SCMT	09T304–HMP								●	●									●					●			0.08~0.23	0.30~3.00
			09T308–HMP								●	●									●					●			0.10~0.30	0.50~3.00
			120404–HMP																										0.09~0.27	0.30~3.60
			120408–HMP									●									●					●			0.12~0.36	0.60~3.60
Medium to finishing	MP	SCMT	09T304–MP						●	●				●			●		●	●	●			●					0.05~0.25	0.30~2.80
			09T308–MP					●	●	●				●	●		●				●			●					0.10~0.30	0.50~2.80
			120404–MP						●	●				●					●		●								0.10~0.30	0.50~2.80
			120408–MP						●	●				●			●	●	●	●	●			●					0.15~0.35	0.80~3.50
			120412–MP																										0.25~0.40	1.00~3.50
Medium to finishing	C25	SCMT	060204–C25								●	●	●																0.08~0.25	0.40~2.50
			09T304–C25	●	●		●		●	●		●	●	●	●		●				●	●		●					0.08~0.25	0.60~3.00
			09T308–C25	●	●		●		●	●	●	●	●	●	●	●	●				●	●		●					0.10~0.30	1.00~3.00
			120404–C25		●				●	●				●	●						●	●		●		●			0.10~0.30	0.80~3.80
			120408–C25				●		●	●	●	●	●	●	●	●	●				●	●		●		●			0.12~0.38	1.20~3.80

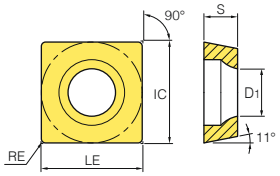
● : Stock item

External Tool Holder	
Screw on	Page
SSBCR/L	B116
SSDCN	B116
SSKCR/L	B117
SSSCR/L	B117

Boring Bar	
Screw on	Page
SSKCR/L	B136

SP○○

Square 90° Positive
Relief Angle: 11°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	9.525	0.4~0.8	3.18~3.97	9.525	3.4~4.4
12	12.7	0.4~1.2	3.18	12.7	-
15	15.875	1.2	4.76	15.875	-
19	19.05	1.2~1.6	4.76	19.05	-
25	25.4	2.0	6.35	25.4	-

Workpiece		
Steel	P	● ⇕ ● ⇕ ● ⇕ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱
Stainless steel	M	✱ ✱ ✱ ✱ ● ⇕ ✱ ✱ ✱ ✱ ● ⇕ ⇕ ✱ ✱ ● ⇕ ⇕ ⇕ ✱ ✱
Cast iron	K	● ⇕ ● ⇕ ✱ ✱ ✱ ✱ ● ⇕ ✱ ✱ ✱ ✱ ● ⇕
Non-ferrous metal	N	● ⇕
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ⇕ ⇕ ✱ ● ⇕
Hardened steel	H	● ⇕ ⇕ ● ⇕

Machining types
- ● Continuous cutting
- ⇕ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	VL	SPMT	09T304–VL																									0.04~0.18	0.20~1.40
			09T308–VL																									0.08~0.22	0.20~1.40
Finishing	VF	SPMT	090304–VF																									0.05~0.20	0.30~1.50
			090308–VF																									0.10~0.25	0.30~1.50
Finishing	F	SPMR	090304–F																									0.05~0.20	0.30~2.00
			120304–F							●		●																0.10~0.25	0.50~2.00
Finishing	F	SPGR	090304–F																									0.05~0.20	0.30~2.00
			120304–F																									0.10~0.25	0.50~2.00
Medium cutting	M	SPMR	090308–M							●		●																0.10~0.40	1.00~3.50
			120308–M							●		●	●															0.10~0.40	1.50~4.00
			120312–M									●	●															0.20~0.40	1.50~4.00
Medium cutting	M	SPGR	090308–M																									0.10~0.40	1.00~3.50
			120308–M																									0.20~0.40	1.50~4.00
Medium to finishing		SPUN	120304																									0.10~0.30	1.00~5.00
			120308																									0.15~0.40	1.00~5.00
			120308SN																									0.15~0.40	1.00~5.00
			150412																									0.20~0.50	1.00~5.00
			190412									●																0.20~0.50	1.50~7.00
			190416																									0.25~0.60	2.00~7.00
			250620																									0.30~0.80	3.00~10.0

● : Stock item

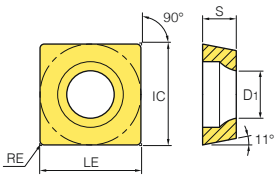
External Tool Holder	
Clamp on	Page
CSDPN	B105
CSKPR/L	B106

Boring Bar			
Clamp on	Page	Screw on	Page
CSKPR/L	B129	SSKPR/L	B136

SP○○

Square 90° Positive

Relief Angle: 11°



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
06	6.35	0.4	2.38	6.35	2.8
07	7.94	0.2~0.8	2.38	7.94	-
09	9.525	0.2~0.8	3.18	9.525	3.4~4.4
12	12.7	0.2~4.0	3.18	12.7	-
15	15.875	0.4~2.0	4.76	15.875	-
19	19.05	0.4~2.4	4.76	19.05	-

Workpiece			Machining types
Steel	P	● ✱ ● ● ● ● ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ● ● ● ✱ ✱ ✱ ● ● ● ● ●	● General cutting
Cast iron	K	● ✱ ● ● ✱ ✱ ✱ ● ● ✱ ✱ ● ● ● ●	✱ Interrupted cutting
Non-ferrous metal	N	● ● ✱ ✱ ● ● ● ● ● ● ● ● ● ●	
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ● ● ✱ ● ● ● ● ● ● ●	
Hardened steel	H	● ● ● ● ● ● ●	

Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium to finishing		SPGN	070202																									0.03~0.10	0.50~2.00
			070208																									0.10~0.25	0.70~3.00
			090302																									0.03~0.10	0.50~3.00
			090304																									0.08~0.20	0.70~3.50
			090308																									0.10~0.25	0.70~3.50
			120302																									0.03~0.20	0.50~3.00
			120304																									0.08~0.20	1.00~5.00
			120308									●																0.10~0.25	1.00~5.00
			120312																									0.15~0.30	1.00~5.00
			120316																									0.18~0.33	1.00~5.00
			120402																									0.03~0.20	0.50~3.00
			120404																									0.08~0.20	1.00~5.00
			120408																									0.10~0.25	1.00~5.00
			120412																									0.15~0.30	1.00~5.00
			120416																									0.18~0.33	1.00~5.00
			120430																									0.20~0.60	2.00~5.00
			120440																									0.25~0.70	3.00~5.00
			150404																									0.08~0.20	1.50~7.00
			150408																									0.10~0.25	1.50~7.00
			150412																									0.15~0.30	1.50~7.00
			150416																									0.18~0.33	1.50~7.00
			150420																									0.20~0.45	1.50~7.00
			190404																									0.08~0.20	1.50~9.00
			190408																									0.10~0.25	1.50~9.00
			190412																									0.15~0.45	1.50~9.00
			190416																									0.18~0.60	1.50~9.00
			190424																									0.25~0.70	2.50~9.00
Medium to finishing		SPGA	060204																									0.50~0.25	0.50~2.00
			090308T	●	●																							0.10~0.25	0.70~3.00
			090308T–Z		●																							0.10~0.25	0.70~3.00
			* Note: 08T: corner C0.8 08T-Z: corner R0.8																										
Medium to finishing		SPGT	090304R																									0.08~0.23	0.30~3.00
			090308R																									0.10~0.30	0.50~3.00
			090304L		●																							0.08~0.23	0.30~3.00
			090308L																									0.10~0.30	0.50~3.00

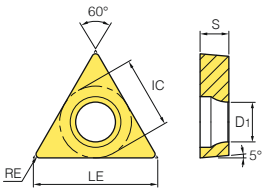
● : Stock item

External Tool Holder	
Clamp on	Page
CSDPN	B105
CSKPR/L	B106

Boring Bar			
Clamp on	Page	Screw on	Page
CSKPR/L	B129	SSKPR/L	B136

TB○○

Triangular 60° Positive
Relief Angle: 5°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
06	3.97	0.2~0.4	1.59	6.876	2.16

Workpiece			Machining types
Steel	P	● ✱ ● ⬌ ● ⬌ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ✱ ● ⬌ ✱ ✱ ✱ ✱ ● ⬌ ⬌ ✱ ✱	⬌ General cutting
Cast iron	K	● ✱ ● ⬌ ✱ ✱ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌	✱ Interrupted cutting
Non-ferrous metal	N	● ⬌
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ⬌ ⬌ ✱ ● ⬌
Hardened steel	H	● ⬌ ⬌ ● ⬌

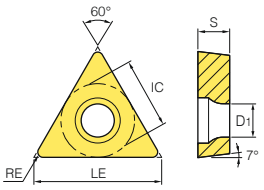
Application	Picture	Designation	Cermet		Coated		Coated																		Uncoated		Cutting Condition	
			CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	VL	TBMT 060102–VL																										0.03~0.06	0.05~0.60
Finishing		TBGT 060102L	●	●																					●		●	0.05~0.20	0.10~1.30
		060104L	●	●																								0.08~0.20	0.10~1.30

● : Stock item

Compact Mini	
TH	Page
STUBR/L	B142
STLBR/L	B142

TC ○○

Triangular 60° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	5.56	0.4~0.8	2.38	9.63	2.5
11	6.35	0.2~0.8	2.38	10.999	2.8
16	9.525	0.2~1.2	3.97	16.498	4.4
22	12.7	0.8	4.76	21.997	5.5

Workpiece			CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05
	Steel	P	●	✱	●	⧓	●	⧓	✱	✱	✱	✱	✱	✱						✱	✱							
	Stainless steel	M									✱	✱		✱			●	⧓	✱	✱	✱	●	⧓	⧓	✱	✱		
	Cast iron	K	●	✱	●	⧓							✱	✱	●	⧓				✱	✱						●	⧓
	Non-ferrous metal	N																									●	⧓
	Heat resistant alloy, Titanium alloy	S															●			✱	✱	●	⧓	⧓	✱		●	⧓
	Hardened steel	H																				●	⧓	⧓			●	⧓

Machining types
- ● Continuous cutting
- ⧓ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																				Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	FP [Mild steel]	TCMT	110202–FP		●				●																					0.01~0.10	0.05~0.80
			110204–FP		●				●																					0.01~0.10	0.10~0.90
Finishing	VF	TCMT	110202–VF																											0.03~0.13	0.06~0.70
			110204–VF			●															●									0.05~0.20	0.30~1.20
			110208–VF																		●									0.10~0.25	0.30~1.20
			16T302–VF																											0.05~0.15	0.10~1.30
			16T304–VF							●											●									0.05~0.20	0.30~1.50
Finishing	VL	TCMT	090208–VL																											0.08~0.20	0.10~1.20
			110204–VL			●	●																							0.05~0.15	0.10~1.30
			110208–VL				●																							0.08~0.20	0.10~1.30
			16T304–VL		●	●	●		●									●	●	●	●			●						0.05~0.20	0.30~1.50
			16T308–VL					●	●	●								●			●	●		●						0.05~0.20	0.30~1.50
Medium to finishing	HMP	TCMT	090204–HMP								●															●				0.06~0.17	0.20~2.30
			090208–HMP																											0.08~0.23	0.40~2.30
			110202–HMP																											0.03~0.15	0.10~1.50
			110204–HMP		●					●	●	●			●						●			●		●				0.06~0.19	0.20~2.50
			110208–HMP		●							●									●					●				0.09~0.26	0.40~2.50
			16T304–HMP		●						●	●									●			●		●				0.08~0.23	0.30~3.00
			16T308–HMP								●	●			●						●					●				0.10~0.30	0.50~3.00
Medium to finishing	MP	TCMT	090204–MP					●										●	●											0.05~0.18	0.10~1.00
			090208–MP															●	●											0.08~0.20	0.10~1.20
			110202–MP						●	●					●								●	●						0.03~0.12	0.20~1.50
			110204–MP					●	●	●					●			●	●	●			●	●							0.05~0.15	0.20~1.50
			110208–MP						●	●					●						●		●	●						0.10~0.28	0.25~2.00
			16T302–MP																											0.08~0.25	0.20~1.50
			16T304–MP	●	●			●	●	●					●		●	●	●	●	●	●	●	●	●					0.08~0.20	0.30~2.50
			16T308–MP		●	●	●	●	●	●					●	●	●	●	●	●	●		●	●						0.10~0.30	0.50~2.50
			16T312–MP						●	●					●										●					0.20~0.40	0.50~2.50
			220408–MP																											0.20~0.40	0.50~3.50

● : Stock item

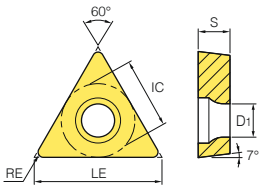
External Tool Holder	
Screw on	Page
STACR/L	B117
STFCR/L	B118
STGCR/L	B118
STTCR/L	B118

Auto Tool	
TH	Page
STACR/L	B169

Boring Bar	
Screw on	Page
STFCR/L	B137

TC ○○

Triangular 60° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
08	4.76	0.03~0.2	2.38	8.245	2.3
09	5.56	0.4~0.8	2.38	9.63	2.5
11	6.35	0.1~0.8	2.38	10.999	2.8
16	9.525	0.4~0.8	3.97	16.498	4.4

Workpiece			Machining types
Steel	P	● ⧓ ● ⧗ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓	● Continuous cutting
Stainless steel	M	⧓ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓	⧗ General cutting
Cast iron	K	● ⧓ ● ⧗ ⧓ ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ● ⧗	⧓ Interrupted cutting
Non-ferrous metal	N	● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ● ⧗
Heat resistant alloy, Titanium alloy	S	● ⧓ ⧓ ● ⧗ ⧗ ⧓ ● ⧗ ⧗ ⧓ ● ⧗
Hardened steel	H	● ⧗ ⧗ ● ⧗

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium cutting	C25	TCMT	090204–C25	●	●	●	●		●	●		●	●		●		●				●	●		●						0.06~0.18	0.40~2.50
			090208–C25	●			●		●	●							●				●			●						0.08~0.25	0.80~2.50
			110202–C25	●						●					●						●			●						0.04~0.12	0.40~2.00
			110204–C25	●	●	●	●		●	●		●	●		●		●				●	●		●						0.06~0.20	0.60~2.50
			110208–C25	●	●		●		●	●		●	●		●		●				●	●		●		●				0.08~0.25	0.80~2.50
			16T304–C25	●	●	●	●	●	●	●	●	●	●		●		●				●	●		●		●				0.08~0.28	0.80~3.00
			16T308–C25	●	●		●		●	●	●	●	●		●		●				●	●		●		●				0.10~0.30	1.00~3.00
Finishing	VP1	TCMT	16T304–VP1																											0.06~0.20	0.10~1.50
			16T308–VP1																											0.08~0.23	0.10~1.50
Finishing	FS [High precision]	TCGT	110201–FS																		●			●						0.01~0.16	0.03~1.40
			110202–FS																		●			●						0.02~0.18	0.04~1.50
			110204–FS																		●			●						0.04~0.19	0.06~1.60
Finishing	FS [Ultra high precision]	TCGT	110201MFN–FS																											0.01~0.16	0.03~1.40
			110202MFN–FS																											0.02~0.18	0.04~1.50
			110204MFN–FS																											0.04~0.19	0.06~1.60
Finishing	VP1	TCGT	090204–VP1																											0.04~0.18	0.10~1.00
			16T304–VP1																											0.06~0.20	0.10~1.50
			16T308–VP1																											0.08~0.23	0.10~1.50
Finishing	KF [High precision]	TCGT	0802003R–KF																											0.01~0.06	0.04~1.30
			080201R–KF																											0.02~0.08	0.05~1.50
			080202R–KF																											0.03~0.11	0.06~1.70
			0802003L–KF																											0.01~0.06	0.04~1.30
			080201L–KF																											0.02~0.08	0.05~1.50
			080202L–KF																											0.03~0.11	0.06~1.70

● : Stock item

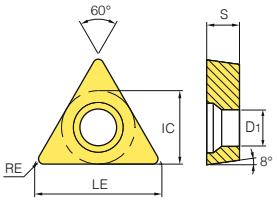
External Tool Holder	
Screw on	Page
STACR/L	B117
STFCR/L	B118
STGCR/L	B118
STTCR/L	B118

Auto Tool	
TH	Page
STACR/L	B169

Boring Bar	
Screw on	Page
STFCR/L	B137

TO ○○

Triangular 60° Positive
Relief Angle: 8°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
06	3.97	0.2	1.59	6.928	2.15
09	5.56	0.4	2.38	9.699	2.8
14	8.2	0.4	3	14.203	3.8

Workpiece		
Steel	P	● ✱ ● ⬌ ● ⬌ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱
Stainless steel	M	✱ ✱ ✱ ● ⬌ ✱ ✱ ⬌ ⬌ ✱ ✱
Cast iron	K	● ✱ ● ⬌ ✱ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌
Non-ferrous metal	N	● ⬌
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ⬌ ⬌ ✱ ● ⬌
Hardened steel	H	● ⬌ ⬌ ● ⬌

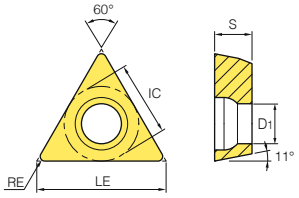
Machining types
- ● Continuous cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																				Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Medium to finishing		TOEH	060102L																											0.05~0.17	0.10~1.50
			090204L																											0.05~0.20	0.30~2.50
			140304L	●	●																									0.05~0.25	0.30~2.50

● : Stock item

TP ○○

Triangular 60° Positive
Relief Angle: 11°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	5.56	0.2~0.4	2.38	9.63	2.5
11	6.35	0.2~0.8	3.18	10.999	3.4
16	9.525	0.4~0.8	4.76	16.498	4.4

Workpiece		
Steel	P	● ✱ ● ⬌ ● ⬌ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱
Stainless steel	M	✱ ✱ ✱ ● ⬌ ✱ ✱ ⬌ ⬌ ✱ ✱
Cast iron	K	● ✱ ● ⬌ ✱ ✱ ✱ ● ⬌ ✱ ✱ ● ⬌
Non-ferrous metal	N	● ⬌
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ⬌ ⬌ ✱ ● ⬌
Hardened steel	H	● ⬌ ⬌ ● ⬌

Machining types
- ● Continuous cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																				Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	FP [Mild steel]	TPMT	090202–FP			●	●		●															●						0.01~0.09	0.05~0.07
			090204–FP	●	●	●	●		●	●									●					●							0.01~0.09	0.10~0.08
			110302–FP						●															●							0.01~0.10	0.05~0.08
			110304–FP	●	●	●	●		●	●									●					●							0.01~0.10	0.10~0.90
			110308–FP	●	●	●	●		●	●														●							0.04~0.10	0.10~1.00
			160404–FP		●				●																							0.01~0.10	0.10~1.00
			160408–FP						●																							0.04~0.12	0.10~1.00

● : Stock item

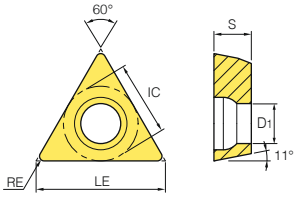
External Tool Holder	
Clamp on	Page
CTFPR/L	B106
CTGPR/L	B106

Boring Bar			
Clamp on	Page	Screw on	Page
CTFPR/L	B129	STFPR/L	B138
		STWPR/L	B139

Compact Mini	
TH	Page
STUPR/L	B143

TP ○○

Triangular 60° Positive
Relief Angle: 11°



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
09	5.56	0.2~0.8	2.38	9.63	2.5
11	6.35	0.2~0.8	3.18	10.999	3.4
16	9.525	0.4~1.2	3.18~4.76	16.498	4.4
22	12.7	0.8	4.76	21.997	-

Workpiece		
Steel	P	● ⧓ ● ⧗ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓
Stainless steel	M	⧓ ⧓ ⧓ ⧓ ● ⧗ ⧓ ● ⧗ ⧓ ⧓ ⧗ ⧗ ⧗ ⧗ ⧗
Cast iron	K	● ⧓ ● ⧗ ⧓ ⧓ ⧓ ● ⧗ ⧓ ⧓ ⧓ ● ⧗
Non-ferrous metal	N	● ⧗
Heat resistant alloy, Titanium alloy	S	● ⧓ ⧓ ● ⧗ ⧗ ⧓ ● ⧗
Hardened steel	H	● ⧗ ⧗ ● ⧗

Machining types
- ● Continuous cutting
- ⧗ General cutting
- ⧓ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	VF	TPMT	110304–VF		●					●					●						●			●					0.05~0.20	0.30~1.50
			110308–VF							●					●									●					0.10~0.25	0.30~1.50
			160404–VF																											0.05~0.20	0.30~2.00
			160408–VF																											0.10~0.25	0.30~2.00
Finishing	VL	TPMT	090204–VL																											0.04~0.10	0.10~0.90
			090208–VL																											0.06~0.12	0.10~1.00
			110304–VL	●	●	●	●		●										●		●		●	●						0.05~0.15	0.10~1.30
			110308–VL																											0.08~0.20	0.10~1.30
			160404–VL																											0.05~0.20	0.30~1.50
			160408–VL																											0.05~0.20	0.30~1.50
Medium to finishing	MP	TPMT	090202–MP																											0.03~0.15	0.10~1.00
			090204–MP																											0.05~0.18	0.10~1.00
			110302–MP																											0.03~0.12	0.20~1.50
			110304–MP	●	●	●	●		●	●									●	●	●	●								0.05~0.20	0.20~1.50
			110308–MP						●	●									●											0.10~0.28	0.30~2.00
			160402–MP																											0.06~0.20	0.30~2.50
			160404–MP						●	●																				0.08~0.20	0.30~2.50
			160408–MP						●	●																				0.10~0.30	0.50~2.50
Finishing	F	TPMR	090202–F																											0.05~0.15	0.10~1.00
			090204–F																											0.05~0.15	0.10~1.00
			110302–F																											0.05~0.15	0.10~1.50
			110304–F							●	●	●	●													●				0.05~0.20	0.30~1.50
			110308–F																											0.05~0.25	0.30~1.50
			160304–F							●	●	●	●		●									●		●				0.08~0.25	0.50~2.00
			160308–F																											0.08~0.25	0.50~3.00
Finishing	F	TPGR	110302–F																											0.05~0.15	0.10~1.50
			110304–F																											0.05~0.20	0.30~1.50
			160304–F																											0.08~0.25	0.50~2.00
Medium cutting	M	TPMR	110304–M																											0.10~0.25	0.70~3.00
			110308–M									●					●													0.13~0.30	1.00~3.00
			160304–M									●					●													0.10~0.25	1.00~5.00
			160308–M							●	●	●	●				●													0.13~0.30	1.00~5.00
			160312–M									●	●																	0.15~0.35	1.00~5.00
			220408–M							●																				0.13~0.30	1.50~7.00

● : Stock item

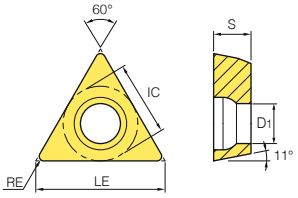
External Tool Holder	
Clamp on	Page
CTFPR/L	B106
CTGPR/L	B106

Boring Bar			
Clamp on	Page	Screw on	Page
CTFPR/L	B129	STFPR/L	B138
		STWPR/L	B139

Compact Mini	
TH	Page
STUPR/L	B143

TP ○○

Triangular 60° Positive
Relief Angle: 11°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
09	5.56	0.4~0.8	2.38	9.63	-
11	6.35	0.2~0.8	2.38~3.18	10.999	-
16	9.525	0.2~1.6	3.18~4.76	16.498	-
22	12.7	0.4~4.0	4.76	21.997	-
27	15.875	0.8	4.76~6.35	27.496	-
33	19.05	2.0	6.35	32.996	-

Workpiece			NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05
	Steel	P	●	✱	●	◗	●	◗	✱	✱	✱	✱	✱	✱	✱	✱	✱								◗	◗
	Stainless steel	M					✱	✱		✱			●	◗	✱	✱	✱	●	◗	◗	◗	✱				
	Cast iron	K	●	✱	●	◗			✱	✱	●	◗				✱	✱						●	◗		
	Non-ferrous metal	N																					●	◗		
	Heat resistant alloy, Titanium alloy	S											●			✱	✱	●	◗	◗		✱	●	◗		
	Hardened steel	H																●	◗	◗			●	◗		

Machining types
- ● Continuous cutting
- ◗ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	Coated NC3215	Coated NC3225	Coated NC3120	Coated NC3030	Coated NC3235	Coated NC5320	Coated NC5330	Coated NC6310	Coated NC6315	Coated NC9115	Coated NC9125	Coated NC9135	Coated PC5300	Coated PC5400	Coated PC8105	Coated PC8110	Coated PC8115	Coated PC9030	Coated PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Medium cutting	M	TPGR	110308–M																										0.13~0.30	1.00~3.00
			160308–M																										0.13~0.30	1.00~5.00
Medium to finishing		TPUN	090308																										0.10~0.30	0.50~2.00
			110208																										0.15~0.40	1.00~3.00
			110304																										0.10~0.30	1.00~3.00
			110308																										0.15~0.40	1.00~3.00
			160304									●																	0.10~0.30	1.00~5.00
			160308									●									●								0.15~0.40	1.00~5.00
			160308TN																										0.15~0.40	1.00~5.00
			160312																										0.20~0.50	1.50~5.00
			160312TN																										0.20~0.50	1.50~5.00
			220404																										0.10~0.30	1.50~7.00
			220408									●																	0.15~0.40	1.50~7.00
			220412																										0.20~0.50	1.50~7.00
			220412TN																										0.20~0.50	1.50~7.00
			330620																										0.30~0.70	3.00~10.00
Medium to finishing		TPGN	090204																										0.07~0.20	0.70~2.00
			110302																										0.05~0.15	0.50~2.00
			110304									●																●	0.07~0.20	0.70~3.00
			110308									●																●	0.10~0.25	1.00~3.00
			160302																										0.05~0.18	1.00~5.00
			160304							●		●																●	0.07~0.20	1.00~5.00
			160308							●		●																●	0.10~0.25	1.00~5.00
			160310																										0.10~0.25	1.00~5.00
			160312																										0.15~0.30	1.00~5.00
			160316																										0.15~0.30	1.00~5.00
			160404																										0.07~0.20	1.00~5.00
			220404									●																	0.07~0.20	1.50~7.00
			220408									●																	0.10~0.25	1.50~7.00
			220412									●																	0.15~0.30	1.50~7.00
			220430																										0.30~0.45	1.50~7.00
			220440																										0.30~0.50	1.50~7.00
			270408																										0.15~0.25	3.00~8.00
			270608																										0.15~0.25	3.00~8.00

● : Stock item

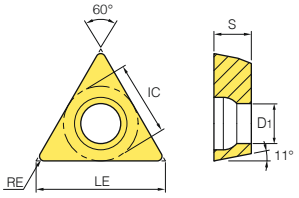
External Tool Holder	
Clamp on	Page
CTFPR/L	B106
CTGPR/L	B106

Boring Bar			
Clamp on	Page	Screw on	Page
CTFPR/L	B129	STFPR/L	B138
		STWPR/L	B139

Compact Mini	
TH	Page
STUPR/L	B143

TP ○○

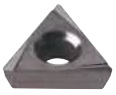
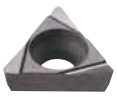
Triangular 60° Positive
Relief Angle: 11°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
08	4.76	0.2~0.4	2.38	8.245	2.5
09	5.56	0.2~0.8	2.38	9.63	3
11	6.35	0.2~0.8	3.18	10.999	3.4
16	9.525	0.4~0.8	4.76	16.498	4.4

Workpiece		
Steel	P	● ⧓ ● ⧗ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓
Stainless steel	M	⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧗ ⧓ ⧓ ● ⧗ ⧗
Cast iron	K	● ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧓ ⧓ ● ⧗
Non-ferrous metal	N	● ⧗
Heat resistant alloy, Titanium alloy	S	● ⧓ ⧓ ● ⧗ ⧗ ⧓ ● ⧗
Hardened steel	H	● ⧗ ⧗ ● ⧗

Machining types
- ● Continuous cutting
- ⧗ General cutting
- ⧓ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Finishing		TPGH	080202L	●	●																									0.01~0.12	0.06~1.70
			080204L	●	●																									0.01~0.15	0.08~1.70
			110202L																											0.01~0.12	0.06~2.00
			110204L																											0.01~0.15	0.08~2.00
Medium to finishing		TPGT	080202R																											0.05~0.20	0.30~1.50
			080204R																												
			110302R																											0.05~0.20	0.30~1.50
			110304R	●	●																									0.05~0.20	0.50~2.00
			110308R																											0.07~0.25	0.50~2.00
			160404R	●	●																									0.05~0.20	0.70~3.00
			160408R		●																									0.05~0.20	0.70~3.00
			080202L	●	●																					●		●		0.05~0.20	0.30~1.50
			080204L		●																										
			110302L																											0.05~0.20	0.30~1.50
			110304L	●	●																									0.05~0.20	0.50~2.00
			110308L																											0.07~0.25	0.50~2.00
			160404L	●	●																									0.05~0.20	0.70~3.00
			160408L																											0.05~0.20	0.70~3.00
Medium to finishing		TPGX	090202L		●																									0.10~0.20	0.30~1.00
			090204L		●																									0.10~0.25	0.50~1.00
			090208L																											0.10~0.30	1.00~1.00
			110304L		●																									0.10~0.25	0.50~1.20

● : Stock item

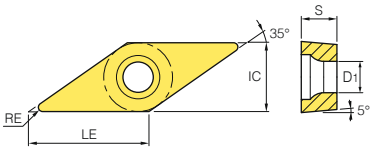
External Tool Holder	
Clamp on	Page
CTFPR/L	B106
CTGPR/L	B106

Boring Bar			
Clamp on	Page	Screw on	Page
CTFPR/L	B129	STFPR/L	B138
		STWPR/L	B139

Compact Mini	
TH	Page
STUPR/L	B143

VB○○

Rhombic 35° Positive
Relief Angle: 5°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	6.35	0.2~0.8	3.18	11.071	2.8
16	9.525	0.2~1.2	4.76	16.606	4.4

Workpiece		
Steel	P	● ✱ ● ⬌ ● ⬌ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ⬌ ● ⬌ ● ⬌ ✱ ✱ ● ⬌ ● ⬌ ✱ ✱ ● ⬌ ● ⬌
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ● ⬌ ● ⬌ ● ⬌ ✱ ✱ ● ⬌ ● ⬌ ● ⬌ ✱ ✱
Cast iron	K	● ✱ ● ⬌ ✱ ✱ ✱ ● ⬌ ✱ ✱ ✱ ✱ ● ⬌ ● ⬌ ✱ ✱ ● ⬌
Non-ferrous metal	N	● ⬌ ● ⬌
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ⬌ ● ⬌ ✱ ● ⬌ ● ⬌
Hardened steel	H	● ⬌ ● ⬌ ● ⬌

Machining types
- ● Continuous cutting
- ⬌ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	Coated NC3215	Coated NC3225	Coated NC3120	Coated NC3030	Coated NC3235	Coated NC5320	Coated NC5330	Coated NC6310	Coated NC6315	Coated NC9115	Coated NC9125	Coated NC9135	Coated PC5300	Coated PC5400	Coated PC8105	Coated PC8110	Coated PC8115	Coated PC9030	Coated PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Finishing	FP [Mild steel]	VBMT	110302–FP						●																					0.01~0.10	0.05~0.08
			110304–FP		●				●																					0.01~0.10	0.10~0.90
			110308–FP						●																					0.01~0.10	0.10~1.00
			160404–FP	●	●	●	●		●	●									●					●						0.01~0.10	0.10~1.00
			160408–FP	●	●	●			●	●														●						0.04~0.12	0.10~1.00
Finishing	VB	VBMT	110302–VB																											0.05~0.15	0.20~1.20
			110304–VB																											0.06~0.18	0.20~1.20
			110308–VB																											0.08~0.20	0.60~1.20
			160402–VB																											0.06~0.20	0.05~1.00
			160404–VB	●	●	●				●																				0.08~0.20	0.20~1.50
			160408–VB		●	●	●			●																				0.10~0.23	0.50~1.50
			160412–VB				●																							0.12~0.25	0.80~1.50
Finishing	VF	VBMT	160404–VF	●	●					●					●						●			●						0.05~0.20	0.30~1.00
			160408–VF	●	●																●									0.10~0.25	0.30~1.00
Finishing	VL	VBMT	110302–VL																											0.03~0.20	0.20~1.20
			110304–VL																											0.04~0.20	0.20~1.20
			110308–VL																											0.08~0.20	0.20~1.20
			160402–VL																											0.03~0.20	0.30~1.50
			160404–VL	●	●	●	●	●	●	●					●			●	●	●	●		●	●	●					0.05~0.20	0.30~1.50
			160408–VL			●	●	●	●	●									●			●	●		●	●					0.10~0.20	0.30~1.50
			160412–VL																					●	●					0.10~0.25	0.30~1.50
Medium to finishing	HMP	VBMT	110202–HMP																							●				0.03~0.20	0.15~2.70
			110304–HMP								●															●				0.03~0.20	0.15~2.70
			110308–HMP								●																			0.05~0.25	0.40~2.70
			160404–HMP		●						●	●			●		●				●			●		●					0.07~0.20	0.20~2.70
			160408–HMP							●	●	●			●						●			●		●					0.09~0.27	0.50~2.70
			160412–HMP																											0.11~0.32	0.50~2.70
Medium to finishing	MP	VBMT	110302–MP		●		●																							0.04~0.14	0.20~1.50
			110304–MP					●	●	●								●	●											0.05~0.15	0.20~1.50
			110308–MP		●			●	●	●																				0.10~0.28	0.30~2.00
			160402–MP																											0.06~0.16	0.25~2.00
			160404–MP	●	●	●	●	●	●	●			●		●	●			●	●	●	●	●	●						0.08~0.20	0.30~2.00
			160408–MP	●	●	●	●	●	●	●			●		●	●	●	●	●	●	●		●	●						0.10~0.25	0.50~2.30
			160412–MP	●	●				●	●					●						●			●						0.10~0.35	0.50~2.30

● : Stock item

External Tool Holder	
Screw on	Page
SVVBN	B120
SVABR/L	B119
SVHBR/L	B119
SVJBR/L	B119

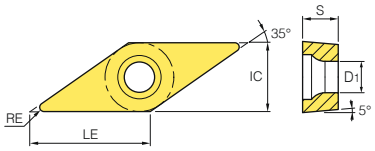
Auto Tool	
TH	Page
SVJBR/L	B170

KHP Coolant	
TH	Page
SVJBR/L	B149

Boring Bar	
Screw on	Page
SVQBR/L	B139
SVUBR/L	B140

VB○○

Rhombic 35° Positive
Relief Angle: 5°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	6.35	0.1~0.4	3.18	11.071	2.8
16	9.525	0.2~0.8	4.76	16.606	4.4

Workpiece		
Steel	P	● ✱ ● ✱ ● ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱
Stainless steel	M	✱ ✱ ✱ ✱ ● ✱ ✱ ✱ ✱ ✱
Cast iron	K	● ✱ ● ✱ ✱ ✱ ✱ ● ✱ ✱ ✱ ✱ ● ✱
Non-ferrous metal	N	● ✱
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ✱ ✱ ✱ ● ✱
Hardened steel	H	● ✱ ✱ ● ✱ ✱

Machining types
- ● Continuous cutting
- ✱ General cutting
- ✱ Interrupted cutting

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	Coated NC3215	Coated NC3225	Coated NC3120	Coated NC3030	Coated NC3235	Coated NC5320	Coated NC5330	Coated NC6310	Coated NC6315	Coated NC9115	Coated NC9125	Coated NC9135	Coated PC5300	Coated PC5400	Coated PC8105	Coated PC8110	Coated PC8115	Coated PC9030	Coated PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Medium to finishing		VBMT	160404		●						●	●				●										●			0.07~0.20	0.50~1.50
			160408							●	●						●										●			0.15~0.25	0.70~2.00
Medium to finishing		VBGT	160404																											0.07~0.20	0.50~1.50
			160408																											0.15~0.25	0.70~2.00
Finishing	VP1	VBMT	160402–VP1																				●							0.04~0.20	0.16~1.50
			160404–VP1																											0.05~0.20	0.18~1.80
			160408–VP1																											0.06~0.20	0.20~1.80
Finishing	FS [High precision]	VBGT	110301–FS																		●		●							0.01~0.16	0.03~1.40
			110302–FS																		●		●							0.02~0.18	0.04~1.50
			110304–FS																		●		●							0.04~0.19	0.06~1.60
			160401–FS																		●		●							0.01~0.16	0.04~1.80
			160402–FS																		●		●							0.02~0.18	0.05~2.00
			160404–FS																		●		●							0.04~0.19	0.08~2.00
Finishing	FS [Ultra high precision]	VBGT	110301MFN–FS																											0.01~0.16	0.03~1.40
			110302MFN–FS																											0.02~0.18	0.04~1.50
			110304MFN–FS																											0.04~0.19	0.06~1.60
			160401MFN–FS																											0.01~0.16	0.04~1.80
			160402MFN–FS																											0.02~0.18	0.05~2.00
			160404MFN–FS																											0.04~0.19	0.08~2.00
Finishing	VP1	VBGT	110302–VP1																											0.03~0.10	0.08~1.50
			160402–VP1																											0.04~0.20	0.16~1.50
			160404–VP1																											0.05~0.20	0.18~1.80

● : Stock item

External Tool Holder	
Screw on	Page
SVVBN	B120
SVABR/L	B119
SVHBR/L	B119
SVJBR/L	B119

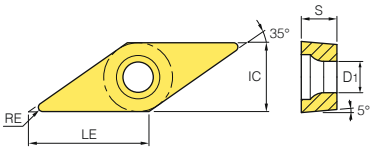
Auto Tool	
TH	Page
SVJBR/L	B170

KHP Coolant	
TH	Page
SVJBR/L	B149

Boring Bar	
Screw on	Page
SVQBR/L	B139
SVUBR/L	B140

VB○○

Rhombic 35° Positive
Relief Angle: 5°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	6.35	0.03~0.2	3.18	11.071	2.8

Workpiece		
Steel	P	
Stainless steel	M	
Cast iron	K	
Non-ferrous metal	N	
Heat resistant alloy, Titanium alloy	S	
Hardened steel	H	

Machining types
- ● Continuous cutting
- ⬬ General cutting
- ✖ Interrupted cutting

Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	KF [High precision]	VBGT	1103003R–KF																		●								0.01~0.06	0.04~1.30
			110301R–KF																		●								0.02~0.08	0.05~1.50
			110302R–KF																		●					●			0.03~0.13	0.06~1.70
			1103003L–KF																		●			●					0.01~0.06	0.04~1.30
			110301L–KF																		●								0.02~0.08	0.05~1.50
			110302L–KF																		●								0.03~0.13	0.06~1.70
Medium to finishing	KM [High precision]	VBGT	1103003R–KM																		●			●					0.01~0.06	0.04~1.30
			110301R–KM																		●								0.02~0.08	0.05~1.50
			110302R–KM																		●			●					0.03~0.13	0.06~1.70
			1103003L–KM																		●			●					0.01~0.06	0.04~1.30
			110301L–KM																		●								0.02~0.08	0.05~1.50
			110302L–KM																		●								0.03~0.13	0.06~1.70

● : Stock item

External Tool Holder	
Screw on	Page
SVVBN	B120
SVABR/L	B119
SVHBR/L	B119
SVJBR/L	B119

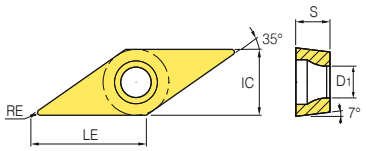
Auto Tool	
TH	Page
SVJBR/L	B170

KHP Coolant	
TH	Page
SVJBR/L	B149

Boring Bar	
Screw on	Page
SVQBR/L	B139
SVUBR/L	B140

VC○○

Rhombic 35° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
08	4.76	0.2~0.8	2.38	8.299	2.3
11	6.35	0.2~0.4	3.18	11.071	2.8~3.4
16	9.525	0.4~1.2	4.76	16.606	4.4

Workpiece			Machining types
Steel	P	● ⧓ ● ⧗ ● ⧗ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧓ ⧓ ● ⧗ ⧗ ⧓ ⧗ ⧗	● Continuous cutting
Stainless steel	M	⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧓ ⧓ ● ⧗ ⧗ ⧗ ⧓ ⧓	⧗ General cutting
Cast iron	K	● ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧓ ⧓ ● ⧗	⧓ Interrupted cutting
Non-ferrous metal	N	● ⧗
Heat resistant alloy, Titanium alloy	S	● ⧓ ⧓ ● ⧗ ⧗ ⧓ ● ⧗
Hardened steel	H	● ⧗ ⧗ ● ⧗

Application	Picture	Designation		Cermet		Coated		Coated																	Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	FP [Mild steel]	VCMT	080202–FP			●			●																				0.01~0.10	0.05~0.08
			080204–FP		●				●																				0.01~0.10	0.10~0.90
			080408–FP		●		●		●																				0.04~1.00	0.10~1.00
			160404–FP		●				●																				0.01~0.10	0.10~1.00
			160408–FP	●	●				●	●									●					●					0.04~0.12	0.10~1.00
Finishing	VF	VCMT	080202-VF																										0.05~0.20	0.30~1.00
			080204-VF												●														0.10~0.25	0.30~1.00
			110304-VF							●																			0.03~0.18	0.15~1.20
			160404-VF		●					●					●									●					0.04~0.20	0.15~1.50
Finishing	VL	VCMT	080202-VL						●	●					●						●								0.03~0.08	0.10~0.80
			080204-VL						●	●					●						●								0.04~0.10	0.10~0.90
			160404-VL						●	●									●					●					0.05~0.20	0.30~1.50
			160408-VL						●	●										●				●					0.05~0.20	0.30~1.50
			160412-VL																										0.10~0.25	0.30~1.50
Medium to finishing	HMP	VCMT	160404-HMP		●		●				●	●									●			●	●				0.10~0.25	0.30~2.60
			160408-HMP		●						●	●									●			●	●				0.13~0.33	0.60~2.60
Medium to finishing	MP	VCMT	080202-MP						●	●																			0.03~0.15	0.10~1.00
			080204-MP						●	●																			0.05~0.18	0.10~1.00
			110302-MP																										0.06~0.18	0.20~1.80
			110304-MP																										0.06~0.18	0.20~1.80
			160404-MP						●	●							●	●	●	●			●	●					0.08~0.18	0.30~2.00
			160408-MP						●	●							●		●	●	●			●					0.10~0.23	0.50~2.30
			160412-MP																					●					0.10~0.33	0.50~2.30
Finishing	VP1	VCMT	160404-VP1																										0.05~0.20	0.18~1.80
			160408-VP1																										0.06~0.20	0.20~1.80

● : Stock item

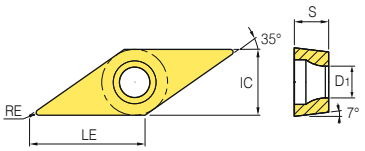
External Tool Holder	
Screw on	Page
SVJCR/L	B120
SVVCN	B120

Auto Tool	
TH	Page
SVJCR/L	B170

Boring Bar	
Screw on	Page
SVJCR/L	B139
SVQCR/L	B140
SVUCR/L	B140

VC○○

Rhombic 35° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	6.35	0.1~0.4	3.18	11.071	2.8
12	7.5	0.08~0.4	3.0	13.076	2.8
16	9.525	0.1~0.8	4.76	16.606	4.4

Workpiece			Machining types
Steel	P	● ✱ ● ◒ ● ◒ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱ ● ◒	● Continuous cutting
Stainless steel	M	✱ ✱ ✱ ✱ ✱ ● ◒ ● ◒ ✱ ✱ ● ◒ ◒ ✱ ✱	◒ General cutting
Cast iron	K	● ✱ ● ◒ ✱ ✱ ✱ ● ◒ ✱ ✱ ● ◒ ✱ ✱ ● ◒	✱ Interrupted cutting
Non-ferrous metal	N	● ◒ ● ◒
Heat resistant alloy, Titanium alloy	S	● ✱ ✱ ● ◒ ◒ ✱ ● ◒ ◒ ✱ ✱ ● ◒ ◒
Hardened steel	H	● ◒ ◒ ● ◒ ◒

Application	Picture	Designation		Cermet		Coated		Coated																		Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	FS [High precision]	VCGT	110301–FS																		●			●					0.01~0.16	0.03~1.40
			110302–FS																		●			●					0.02~0.18	0.04~1.50
			110304–FS																		●			●					0.04~0.19	0.06~1.60
			160401–FS																		●			●					0.01~0.16	0.04~1.80
			160402–FS																		●			●					0.02~0.18	0.05~2.00
			160404–FS																		●			●					0.04~0.19	0.08~2.00
Finishing	FS [Ultra high precision]	VCGT	110301MFN–FS																											0.01~0.16	0.03~1.40
			110302MFN–FS																											0.02~0.18	0.04~1.50
			110304MFN–FS																											0.04~0.19	0.06~1.60
			160401MFN–FS																											0.01~0.16	0.04~1.80
			160402MFN–FS																											0.02~0.18	0.05~2.00
			160404MFN–FS																											0.04~0.19	0.08~2.00
Medium cutting	MS [High precision]	VCGT	110301–MS																		●			●					0.02~0.23	0.05~2.00
			110302–MS																		●			●					0.03~0.25	0.07~2.50
			110304–MS																		●			●					0.05~0.25	0.09~2.50
Medium cutting	MS [Ultra high precision]	VCGT	110301MFN–MS																		●			●					0.02~0.23	0.05~2.00
			110302MFN–MS																		●			●					0.03~0.25	0.07~2.50
			110304MFN–MS																		●			●					0.05~0.25	0.09~2.50
Medium cutting	MS [Ultra high precision]	VCGT	1203008FN–MS																		●			●					0.02~0.20	0.04~1.80
			120301FN–MS																		●			●					0.03~0.26	0.06~2.20
			120302FN–MS																		●								0.05~0.28	0.08~2.80
			120304FN–MS																		●			●					0.06~0.30	0.10~2.80
Finishing	VP1 [High precision]	VCGT	110301–VP1																		●		●	●	●			●		0.02~0.15	0.05~0.50
			110302–VP1																		●		●	●	●			●		0.02~0.18	0.10~1.00
			110304–VP1																		●		●	●	●			●		0.03~0.18	0.15~1.20
			160404–VP1							●																				0.05~0.20	0.18~1.80
			160408–VP1						●																					0.06~0.20	0.20~1.80

● : Stock item

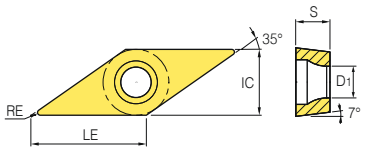
External Tool Holder	
Screw on	Page
SVJCR/L	B120
SVVCN	B120

Auto Tool	
TH	Page
SVJCR/L	B170

Boring Bar	
Screw on	Page
SVJCR/L	B139
SVQCR/L	B140
SVUCR/L	B140

VC○○

Rhombic 35° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
11	6.35	0.03~0.4	3.18	11.071	2.8
12	7.5	0.08~0.8	3.0	13.076	2.8

Workpiece			Machining types
Steel	P	● ⧓ ● ⧗ ● ● ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓ ⧓	● Continuous cutting
Stainless steel	M	⧓ ⧓ ⧓ ⧓ ● ⧗ ⧓ ● ⧗ ⧓ ● ⧗ ⧗ ⧓ ⧓	⧗ General cutting
Cast iron	K	● ⧓ ● ⧗ ⧓ ⧓ ● ⧗ ⧓ ⧓ ⧓ ⧓ ● ⧗ ⧗ ⧓ ⧓ ● ⧗	⧓ Interrupted cutting
Non-ferrous metal	N	● ⧗
Heat resistant alloy, Titanium alloy	S	● ⧓ ⧓ ● ⧗ ⧗ ⧓ ● ⧗ ⧗
Hardened steel	H	● ⧗ ⧗ ● ⧗

Application	Picture	Designation		Cermet CN1500	Cermet CN2500	Coated CC1015	Coated CC1025	Coated NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	Uncoated H01	Uncoated H05	Cutting Condition fn (mm/rev)	Cutting Condition ap (mm)
Finishing	VP1 [Ultra high precision]	VCGT	110301MFN-VP1																		●			●						0.02~0.15	0.05~0.50
			110302MFN-VP1																		●			●						0.02~0.18	0.10~1.00
			110304MFN-VP1																		●			●						0.03~0.18	0.15~1.20
			1203008FN-VP1																											0.03~0.12	0.06~1.20
			120301FN-VP1																											0.04~0.13	0.08~1.20
			120302FN-VP1																											0.04~0.15	0.08~1.20
			120304FN-VP1																											0.06~0.20	0.10~1.50
Finishing	VP1 [Ultra high precision]	VCGX	120300MFR-VP1																		●			●						0.02~0.10	0.05~0.50
			120301MFR-VP1																					●						0.02~0.15	0.05~0.50
			120302MFR-VP1																					●						0.02~0.18	0.10~1.00
			120304MFR-VP1																											0.03~0.20	0.12~1.20
			120308MFR-VP1																											0.05~0.20	0.15~1.20
Finishing	KF [High precision]	VCGT	1103003R-KF																											0.01~0.06	0.04~1.30
			110301R-KF																											0.02~0.08	0.05~1.50
			110302R-KF																							●	●			0.03~0.13	0.06~1.70
			1103003L-KF																											0.01~0.06	0.04~1.30
			110301L-KF																											0.02~0.08	0.05~1.50
			110302L-KF																											0.03~0.13	0.06~1.70
Finishing	KF [Ultra high precision]	VCET	1103005MFR-KF																		●			●						0.01~0.06	0.04~1.30
			110301MFR-KF																					●						0.02~0.08	0.05~1.50
			110302MFR-KF																											0.03~0.11	0.06~1.70
			1103005MFL-KF																											0.01~0.06	0.04~1.30
			110301MFL-KF																		●									0.02~0.08	0.05~1.50
			110302MFL-KF																					●						0.03~0.11	0.06~1.70
Finishing	KM [High precision]	VCGT	1103003R-KM																											0.01~0.06	0.04~1.30
			110301R-KM																											0.02~0.08	0.05~1.50
			110302R-KM																							●				0.03~0.13	0.06~1.70
			1103003L-KM																											0.01~0.06	0.04~1.30
			110301L-KM																											0.02~0.08	0.05~1.50
			110302L-KM																											0.03 ~0.13	0.06~1.70
Medium to finishing	KM [Ultra high precision]	VCET	1103005MFR-KM																					●						0.02~0.08	0.05~1.50
			110301MFR-KM																					●						0.03~0.11	0.06~1.70
			110302MFR-KM																		●			●						0.04~0.15	0.08~2.00
			1103005MFL-KM																											0.02~0.08	0.05~1.50
			110301MFL-KM																											0.03~0.11	0.06~1.70
			110302MFL-KM																		●			●						0.04~0.15	0.08~2.00

● : Stock item

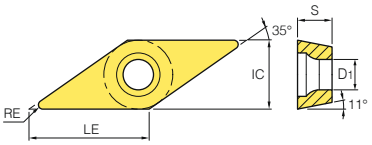
External Tool Holder	
Screw on	Page
SVJCR/L	B120
SVVCN	B120

Auto Tool	
TH	Page
SVJCR/L	B170

Boring Bar	
Screw on	Page
SVJCR/L	B139
SVQCR/L	B140
SVUCR/L	B140

VP ○○

Rhombic 35° Positive
Relief Angle: 11°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
08	4.76	0.05~0.2	2.38	8.299	2.3
11	6.35	0.1~0.4	3.18	11.071	2.8

Workpiece			Machining types
	Steel	P	● Continuous cutting
	Stainless steel	M	⬌ General cutting
	Cast iron	K	✖ Interrupted cutting
	Non-ferrous metal	N	
	Heat resistant alloy, Titanium alloy	S	
	Hardened steel	H	

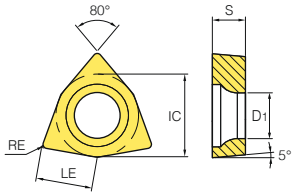
Application	Picture	Designation		Cermet		Coated		Coated																Uncoated		Cutting Condition	
				CN1500	CN2500	CC1015	CC1025	NC3205	NC3215	NC3225	NC3120	NC3030	NC3235	NC5320	NC5330	NC6310	NC6315	NC9115	NC9125	NC9135	PC5300	PC5400	PC8105	PC8110	PC8115	PC9030	PC9035	H01	H05	fn (mm/rev)	ap (mm)
Finishing	VP1 [High precision]	VPGT	110301-VP1																		●			●					0.02~0.15	0.05~0.50
			110302-VP1																		●			●	●			●		0.02~0.18	0.10~1.00
			110304-VP1																		●			●				●		0.03~0.18	0.15~1.20
Finishing	VP1 [Ultra high precision]	VPGT	110301MFN-VP1																		●			●						0.02~0.15	0.05~0.50
			110302MFN-VP1																					●						0.02~0.18	0.10~1.00
			110304MFN-VP1																		●			●						0.03~0.18	0.15~1.20
Finishing	KF [Ultra high precision]	VPET	0802005MFR-KF																											0.01~0.12	0.05~0.50
			080201MFR-KF																											0.02~0.15	0.05~0.50
			080202MFR-KF																		●			●						0.02~0.18	0.10~1.00
			0802005MFL-KF																					●						0.01~0.12	0.05~0.50
			080201MFL-KF																											0.02~0.15	0.05~0.50
			080202MFL-KF																		●			●						0.02~0.18	0.10~1.00
Medium to finishing	KM [Ultra high precision]	VPET	0802005MFR-KM																											0.01~0.12	0.05~0.50
			080201MFR-KM																											0.02~0.15	0.05~0.50
			080202MFR-KM																		●			●						0.02~0.18	0.10~1.00
			0802005MFL-KM																											0.01~0.12	0.05~0.50
			080201MFL-KM																											0.02~0.15	0.05~0.50
			080202MFL-KM																											0.02~0.18	0.10~1.00

● : Stock item

Auto Tool	
TH	Page
SVAPR/L	B170
SVJPR/L	B171
SVVPN	B171

WB○○

Trigon 80° Positive
Relief Angle: 5°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
02	3.97	0.2	1.59	2.716	2.2
S3	4.76	0.2~0.4	2.38	3.256	2.4

| Workpiece | | | | |

Technical Information for Aluminum

AK special chip breaker for aluminum

- Unique and 3-dimensional rake angle controls chip breaking and chip flow ensuring longer tool life and reducing cutting load
- High rake angle at cutting edge part reduces cutting load to increase tool life
- Buffed finish on top face controls chip flow reducing built-up edge

1. High rake angle & tabby pattern chip pocket - Low cutting load
2. Unique rake angle design - Effective chip breaking and good chip flow
3. Unique and 3-dimensional top face - Longer tool life & excellent surface roughness
4. Tabby pattern & Sharp cutting edge - Distributes cutting load and guarantees longer tool life
5. Buffed on top face - Excellent machining, prevents built-up edge, excellent chip flow

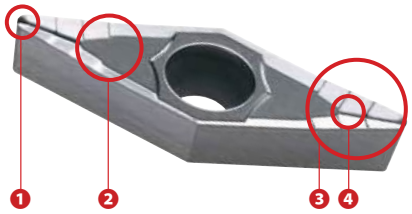
AM special chip breaker for aluminum

- Preventing welding and chip jam with internal bridge structure enhancing smooth chip flow
- Balanced surface finish and toughness from nose R and 2 step side rake angle
- Preventing minor cutting edge fracture with divided bridge structure on the top surface bottom part blocks chips over minor cutting edge

1. Nose R and 2 step rake angle - Balanced surface finish and toughness & smooth chip evacuation
2. Internal bridge - Preventing welding and chip jam & Smooth chip flow and chip control
3. Trigonal knobs on the back
   - Effective chip breaking in medium cutting
   - Less cutting resistance due to smooth chip flow
   - Directing flow of long chip for stable chip evacuation
   - Protecting cutting edge with a structure preventing chip jam
4. Side 2 step rake angle - Longer effective cutting edge, minimized cutting resistance, Good surface finish

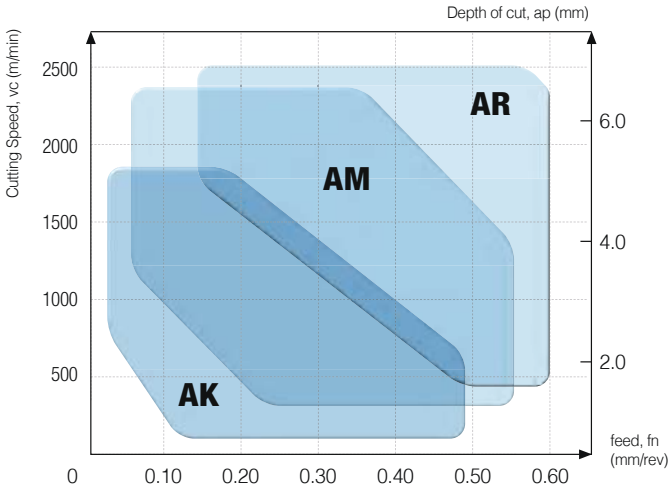
AR special chip breaker for aluminum

- AR chip breaker ensures reliability and good cutting performance at high feed, speed and interrupted machining



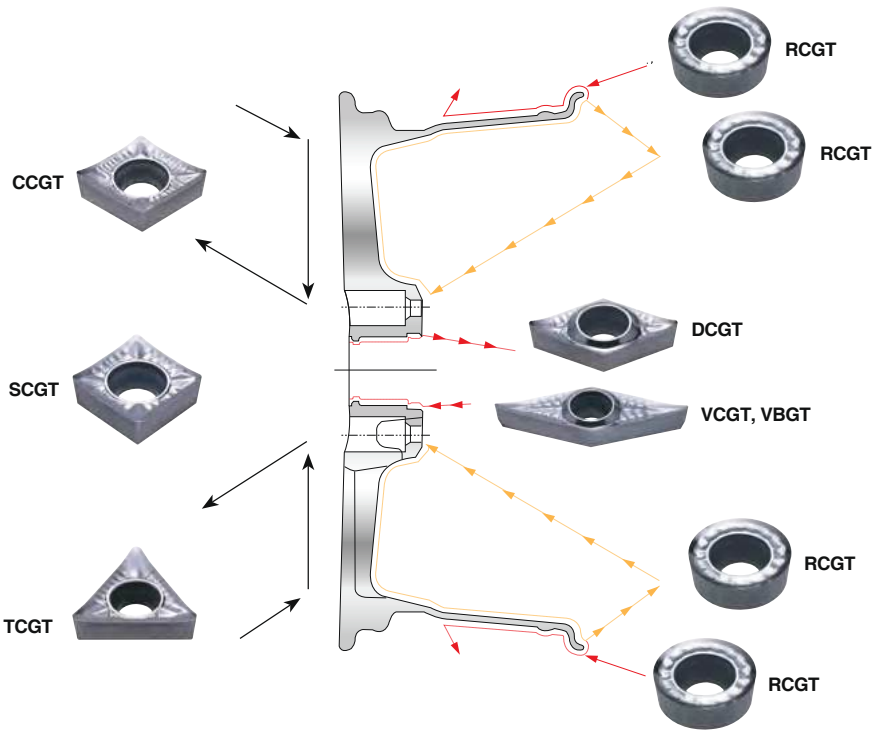
1. Flat corner cutting edge improved productivity at high feed machining and ensures good surface roughness and reliability owing to strong cutting edge
2. Specially buffed on top face controls chip flow reducing built-up edge
3. KORLOY's own technology applied for cutting edge and corner shape controlling chip flow ensures longer tool life
4. KORLOY special chip breaker design controls chip flow at high speed machining

Chip breakers specially developed for aluminum: AK, AM, and AR



	Recommendation range	Grades
AR	ap =0.50 ~ 6.00mm fn=0.05 ~ 0.60mm/rev	H01 (Uncoated cemented carbides N10~N20) ND3000 (Diamond coating) PD1010 (DLC coating)
AM	ap =0.30 ~ 5.50mm fn=0.04 ~ 0.55mm/rev	H05 (Uncoated cemented carbides N10~N20)
AK	ap =0.10 ~ 5.00mm fn=0.03 ~ 0.50mm/rev	H01 (Uncoated cemented carbides N10~N20) ND3000 (Diamond coating) PD1010 (DLC coating)

- AK : 1st recommended in aluminum and non-ferrous metal cutting
- AM : recommended in medium cutting and light interrupted cutting
  1st recommended in Aluminum wheel machining
- AR : recommended when high toughness is required in heavily interrupted cutting



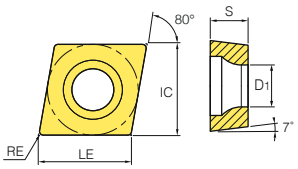
Features of H01 and cutting conditions

- Good for aluminum and alloy steel machining - Surface treatment reduces built-up edge
- 3-dimensional design reduces cutting resistance and ensures high machinability in high feed and speed machining

Workpiece		Hardness (HB)	kc(MPa)	vc(m/min)	fn(mm/rev)
Aluminum alloy (forged)	before heat treatment	50 ~ 70	500 ~ 600	1000 ~ 2500	0.1 ~ 0.6
	after heat treatment	90 ~ 110	700 ~ 900	300 ~ 1000	0.1 ~ 0.5
Aluminum alloy (cast)	before heat treatment	70 ~ 80	700 ~ 800	300 ~ 1000	0.1 ~ 0.6
	after heat treatment	80 ~ 100	800 ~ 950	200 ~ 600	0.1 ~ 0.4
Copper alloy	–	90 ~ 110	700	250 ~ 600	0.1 ~ 0.5
Non-ferrous metal, etc.	–	100	1700	150 ~ 300	0.1 ~ 0.6

CC ○○

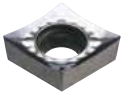
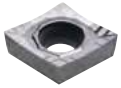
Rhombic 80° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
06	6.35	0.2~0.8	2.38	6.448	2.8
09	9.525	0.2~0.8	3.97	9.672	4.4
12	12.7	0.2~1.2	4.76	12.896	5.5

Workpiece								
Steel	P							
Stainless steel	M							
Cast iron	K							
Non-ferrous metal	N	●	✱	⬌	⬌	⬌	✱	
Heat resistant alloy, Titanium alloy	S							
Hardened steel	H							

Machining types
● Continuous cutting
⬌ General cutting
✱ Interrupted cutting

Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (mm/rev)	ap (mm)
AK	CCGT	060202-AK		●			●		0.01~0.12	0.05~3.00
		060204-AK		●			●	●	0.02~0.15	0.10~3.00
		060208-AK					●		0.02~0.20	0.10~4.00
		09T302-AK		●			●		0.02~0.20	0.05~3.00
		09T304-AK		●			●		0.02~0.30	0.10~5.00
		09T308-AK		●			●		0.03~0.50	0.10~5.00
		120402-AK					●		0.02~0.30	0.05~4.00
		120404-AK		●			●		0.03~0.50	0.10~5.00
		120408-AK					●	●	0.04~0.80	0.10~5.50
AM 	CCGT	09T302-AM						●	0.03~0.25	0.05~3.50
		09T304-AM						●	0.03~0.35	0.10~5.20
		09T308-AM						●	0.03~0.55	0.10~5.50
AR 	CCGT	060202-AR					●		0.02~0.30	0.30~4.00
		060204-AR							0.03~0.35	0.50~4.50
		060208-AR							0.04~0.50	0.50~4.50
		09T302-AR					●		0.03~0.45	0.30~4.00
		09T304-AR					●		0.04~0.50	0.50~4.50
		09T308-AR					●		0.05~0.60	0.50~6.00
		120402-AR							0.04~0.50	0.30~5.00
		120404-AR					●		0.05~0.60	0.50~6.00
		120408-AR					●	●	0.06~0.65	0.50~6.00
		120412-AR							0.08~0.70	0.50~6.50

● : Stock item

External Tool Holder	
Screw on	Page
SCACR/L	B114
SCLCR/L	B114

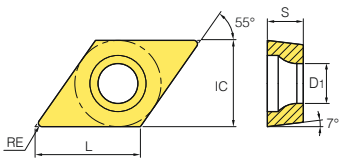
Auto Tool	
TH	Page
SCACR/L	B168
SCLCR/L	B168

Boring Bar	
Screw on	Page
SCLCR/L	B132

Compact Mini	
TH	Page
SCLCR/L	B142

DC

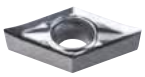
Rhombic 55° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D1
07	6.35	0.2~0.8	2.38	7.752	2.8
11	9.525	0.2~1.2	3.97	11.628	4.4

Workpiece								
Steel	P							
Stainless steel	M							
Cast iron	K							
Non-ferrous metal	N	●	✱	●	●	●	✱	
Heat resistant alloy, Titanium alloy	S							
Hardened steel	H							

Machining types
- ● Continuous cutting
- ● General cutting
- ✱ Interrupted cutting

Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (mm/rev)	ap (mm)
AK	DCGT	070202-AK		●			●		0.01~0.20	0.05~3.00
		070204-AK		●			●		0.02~0.30	0.10~4.00
		070208-AK		●			●		0.03~0.40	0.10~4.00
		11T302-AK		●			●	●	0.02~0.30	0.05~4.00
		11T304-AK		●			●	●	0.03~0.50	0.10~5.00
		11T308-AK		●			●	●	0.03~0.50	0.10~5.00
		11T312-AK					●	●	0.04~0.60	0.15~5.00
AM 	DCGT	11T302-AM						●	0.03~0.25	0.05~3.50
		11T304-AM						●	0.03~0.35	0.10~5.20
		11T308-AM						●	0.03~0.55	0.10~5.50
AR	DCGT	070202-AR					●		0.02~0.30	0.30~4.00
		070204-AR					●		0.03~0.40	0.50~5.00
		070208-AR					●		0.04~0.50	0.50~5.00
		11T302-AR							0.03~0.45	0.30~6.00
		11T304-AR					●		0.04~0.50	0.50~6.00
		11T308-AR					●		0.05~0.60	0.50~6.00
		11T312-AR					●		0.08~0.65	0.50~6.50

● : Stock item

External Tool Holder	
Screw on	Page
SDACR/L	B114
SDJCR/L	B115
SDNCN	B115

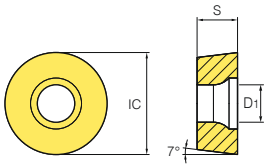
Auto Tool	
TH	Page
SDJCR/L	B168
SDNCN	B169

Boring Bar	
Screw on	Page
SDQCR/L	B134
SDUCR/L	B135
SDZCR/L	B136

RC

Round R° Positive

Relief Angle: 7°



Dimensions (mm)			
Size	IC	S	D_1
06	06	2.38	2.8
08	08	3.18	3.35
10	10	3.18~3.97	4.4
12	12	4.76	4.4

Workpiece								
Steel	P							
Stainless steel	M							
Cast iron	K							
Non-ferrous metal	N	●	✱	⬌	⬌	⬌	✱	
Heat resistant alloy, Titanium alloy	S							
Hardened steel	H							

Machining types

● Continuous cutting
⬌ General cutting
✱ Interrupted cutting

Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (mm/rev)	ap (mm)
AK	RCGT	0602M0-AK					●		0.05~0.20	0.50~2.00
		0803M0-AK					●	●	0.05~0.25	0.50~2.50
		1003M0-AK					●	●	0.10~0.30	1.00~3.00
		1204M0-AK					●		0.10~0.35	1.00~3.50
AR	RCGT	0602M0-AR							0.05~0.20	0.50~2.00
		0803M0-AR							0.05~0.25	0.50~2.50
		1003M0-AR					●	●	0.10~0.30	1.00~3.00
		10T3M0-AR							0.10~0.30	1.00~3.00
		1204M0-AR							0.10~0.35	1.00~3.50

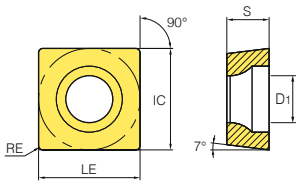
● : Stock item

External Tool Holder			
Lever Lock	Page	Screw on	Page
PRDCN	B98	SRDCN	B115
PRGCR/L	B99	SRGCR/L	B116

KHP Coolant	
TH	Page
SRGCR/L	B149

SC

Square 90° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
09	9.525	0.2~0.8	3.97	9.525	4.4
12	12.7	0.4~1.6	4.76	12.7	5.5

Workpiece			Machining types
	Steel	P	● Continuous cutting
	Stainless steel	M	⬬ General cutting
	Cast iron	K	✱ Interrupted cutting
	Non-ferrous metal	N	● ✱ ⬬ ⬬ ⬬ ✱
	Heat resistant alloy, Titanium alloy	S	
	Hardened steel	H	

Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (mm/rev)	ap (mm)
AK	SCGT	09T302-AK							0.02~0.30	0.10~4.00
		09T304-AK		●			●	●	0.04~0.40	0.10~5.00
		09T308-AK					●		0.03~0.40	0.10~5.00
		120404-AK					●		0.03~0.50	0.10~5.00
		120408-AK					●		0.04~0.60	0.15~5.50
		120416-AK							0.04~0.60	0.15~5.50
AR	SCGT	09T302-AR							0.03~0.40	0.50~5.00
		09T304-AR					●	●	0.04~0.50	0.50~6.00
		09T308-AR							0.04~0.50	0.50~6.50
		120404-AR					●	●	0.05~0.60	0.50~6.50
		120408-AR							0.05~0.60	0.50~7.00
		120416-AR							0.05~0.60	0.50~7.00

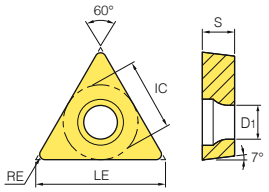
● : Stock item

External Tool Holder	
Screw on	Page
SSBCR/L	B116
SSDCN	B116
SSKCR/L	B117
SSSCR/L	B117

Boring Bar	
Screw on	Page
SSKCR/L	B136

TC

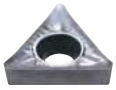
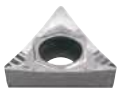
Triangular 60° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
09	5.56	0.2~0.4	2.38	9.63	2.5
11	6.35	0.2~0.8	2.38	10.999	2.8
16	9.525	0.2~2.5	3.97	16.498	4.4

Workpiece								
Steel	P							
Stainless steel	M							
Cast iron	K							
Non-ferrous metal	N	●	✱	⬌	⬌	⬌	✱	
Heat resistant alloy, Titanium alloy	S							
Hardened steel	H							

Machining types
● Continuous cutting
⬌ General cutting
✱ Interrupted cutting

Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (mm/rev)	ap (mm)
AK 	TCGT	090202-AK					●		0.01~0.12	0.05~3.00
		090204-AK					●		0.02~0.15	0.10~4.00
		110202-AK		●			●		0.02~0.20	0.05~4.00
		110204-AK		●			●	●	0.03~0.30	0.10~4.00
		110208-AK					●	●	0.03~0.40	0.10~5.00
		16T302-AK					●		0.02~0.30	0.05~5.00
		16T304-AK					●		0.03~0.40	0.10~5.50
		16T308-AK					●	●	0.03~0.50	0.10~5.50
		16T312-AK					●		0.04~0.60	0.15~5.50
		16T316-AK					●	●	0.05~0.80	0.15~5.50
		16T325-AK							0.06~0.90	0.20~7.00
AR 	TCGT	090202-AR							0.02~0.18	0.30~3.00
		090204-AR					●		0.02~0.25	0.30~5.00
		110202-AR							0.02~0.30	0.30~4.00
		110204-AR					●		0.03~0.40	0.30~5.00
		110208-AR							0.04~0.45	0.50~6.00
		16T302-AR							0.03~0.45	0.30~5.00
		16T304-AR					●		0.04~0.50	0.50~6.00
		16T308-AR					●		0.05~0.60	0.50~6.00
		16T312-AR							0.06~0.65	0.50~6.00
		16T316-AR							0.08~0.70	0.50~6.50
		16T325-AR							0.10~0.10	0.80~7.00

● : Stock item

External Tool Holder	
Screw on	Page
STACR/L	B117
STFCR/L	B118
STGCR/L	B118
STTCR/L	B118

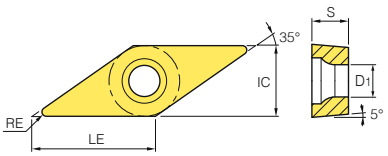
Auto Tool	
TH	Page
STACR/L	B169

Boring Bar	
Screw on	Page
STFCR/L	B137

VB ○○

Rhombic 35° Positive

Relief Angle: 5°



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
11	6.35	0.2~0.8	3.18	11.071	2.8
16	9.525	0.2~1.2	4.76	16.606	4.4

Workpiece			
	Steel	P	
	Stainless steel	M	
	Cast iron	K	
	Non-ferrous metal	N	● ✱ ● ● ● ✱
	Heat resistant alloy, Titanium alloy	S	
	Hardened steel	H	

Machining types

● Continuous cutting
● General cutting
✱ Interrupted cutting

Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (mm/rev)	ap (mm)
AK	VBGT	110302-AK					●		0.02~0.15	0.05~3.00
		110304-AK					●	●	0.02~0.15	0.10~4.00
		110308-AK						●	0.03~0.18	0.10~5.00
		160402-AK							0.03~0.30	0.05~4.00
		160404-AK					●	●	0.03~0.40	0.10~5.00
		160408-AK					●		0.03~0.50	0.10~5.00
		160412-AK							0.05~0.60	0.10~5.50
AR	VBGT	110302-AR							0.02~0.35	0.30~3.00
		110304-AR							0.03~0.45	0.30~4.00
		110308-AR							0.03~0.50	0.50~6.00
		160402-AR							0.04~0.45	0.30~5.00
		160404-AR					●		0.04~0.50	0.50~6.00
		160408-AR					●		0.05~0.60	0.50~6.00
		160412-AR							0.05~0.70	0.50~6.50

● : Stock item

External Tool Holder	
Screw on	Page
SVVBN	B120
SVABR/L	B119
SVHBR/L	B119
SVJBR/L	B119

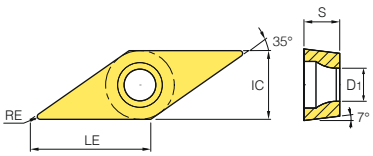
Auto Tool	
TH	Page
SVJBR/L	B170

KHP Coolant	
TH	Page
SVJBR/L	B149

Boring Bar	
Screw on	Page
SVQBR/L	B139
SVUBR/L	B140

VC ○○

Rhombic 35° Positive
Relief Angle: 7°



Dimensions (mm)					
Size	IC	RE	S	LE	D_1
11	6.35	0.1~0.8	3.18	11.071	2.8
13	7.94	0.2~0.8	3.18	14.314	3.4
16	9.525	0.2~1.2	4.76	16.606	4.4
22	12.7	1.6~3.0	5.56	22.142	5.6

Workpiece								
Steel	P							
Stainless steel	M							
Cast iron	K							
Non-ferrous metal	N	●	✱	⬌	⬌	⬌	✱	
Heat resistant alloy, Titanium alloy	S							
Hardened steel	H							

Machining types
● Continuous cutting
⬌ General cutting
✱ Interrupted cutting

Picture	Designation		Coated				Uncoated		Cutting Conditions	
			ND3000	PC5040	PD1005	PD1010	H01	H05	fn (mm/rev)	ap (mm)
AK	VCGT	110301-AK					●		0.02~0.15	0.05~3.00
		110302-AK		●			●		0.02~0.20	0.05~3.00
		110304-AK		●			●	●	0.02~0.25	0.10~4.00
		110308-AK					●	●	0.03~0.30	0.10~5.00
		130302-AK		●			●		0.02~0.35	0.10~5.00
		130304-AK		●			●		0.03~0.35	0.10~5.00
		130308-AK							0.04~0.40	0.10~5.00
		160402-AK	●				●		0.02~0.30	0.05~5.00
		160404-AK	●				●		0.03~0.40	0.10~5.00
		160408-AK	●				●	●	0.03~0.50	0.10~5.00
		160412-AK					●	●	0.03~0.50	0.10~5.00
		220516-AK					●		0.03~0.60	0.10~7.00
		220525-AK						●	0.05~0.70	0.10~7.00
		220530-AK					●	●	0.08~1.00	0.10~7.00
AM	VCGT	160402-AM						●	0.03~0.25	0.05~3.50
		160404-AM						●	0.03~0.35	0.10~5.20
		160408-AM						●	0.03~0.55	0.10~5.50
		220520-AM						●	0.12~1.00	1.20~7.00
		220530-AM						●	0.15~1.00	1.20~7.50
AR	VCGT	110301-AR							0.02~0.20	0.10~3.00
		110302-AR					●		0.02~0.25	0.30~3.00
		110304-AR					●		0.03~0.35	0.30~4.00
		110308-AR							0.04~0.45	0.50~6.00
		130302-AR							0.02~0.40	0.50~3.00
		130304-AR							0.03~0.45	0.50~4.00
		130308-AR							0.04~0.50	0.50~5.00
		160402-AR					●	●	0.03~0.40	0.30~5.00
		160404-AR					●	●	0.04~0.50	0.50~6.00
		160408-AR					●	●	0.05~0.60	0.50~6.00
		160412-AR							0.06~0.65	0.50~6.50
		220516-AR							0.10~0.65	0.80~6.50
		220525-AR							0.10~0.70	0.80~7.00
		220530-AR					●	●	0.12~0.75	1.00~7.00

● : Stock item

External Tool Holder	
Screw on	Page
SVJCR/L	B120
SVVCN	B120

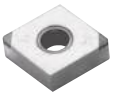
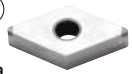
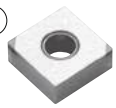
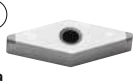
Auto Tool	
TH	Page
SVACR/L	B169

Boring Bar	
Screw on	Page
SVJCR/L	B139
SVQCR/L	B140
SVUCR/L	B140

cBN

Multi-Corner Type (Negative)

Dimensions (mm)				
Size	IC	RE	S	D_1
12	12.7	0.4~1.2	4.76	5.16
15	12.7	0.4~1.2	4.76~6.35	5.16
16	9.525	0.4~1.2	4.76	3.81

Picture	Designation		Coated				Uncoated						Available tool holders	
			DNC100	DNC250	DNC300	DNC350	DB1000	DB2000	DBN250	DBN350	DBN700A	DBNX20	Designation	Page
CN○○ 80° Nega 	**2NU-CNGA**	120404	●	●	●	●	●				●		DCBNR/L	B91
		120404F		●		●							DCLNR/L	B91
		120404T		●		●	●						MCKNR/L	B107
		120404W		●									MCLNR/L	B107
		120404WF		●									MCMNN	B107
		120408	●	●	●	●	●	●			●		PCBNR/L	B96
		120408F		●		●							PCLNR/L	B97
		120408T		●		●	●							
		120408W		●		●	●				●			
		120408WF						●						
		120412	●	●	●	●								
		120412F		●		●								
		120412T		●		●								
		120412W		●							●			
		120412WT					●							
	T-2NU-CNGA	120404		●										
		120408		●		●								
	4NU-CNGA	120404		●										
		120408		●		●								
		120412		●										
DN○○ 55° Nega 	**2NU-DNGA**	150404		●	●	●		●	●				DDJNR/L	B92
		150404F		●		●							MDJNR/L	B108
		150404T		●		●							MDNNN	B108
		150408		●	●	●	●	●	●				MDQNR/L	B109
		150408F		●		●							MDUNR/L	B130
		150408T		●		●	●	●					PDJNR/L	B97
		150412		●		●							PDNNR/L	B98
		150412F		●		●							PDSNR/L	B127
		150412T		●		●							PDUNR/L	B127
		150604	●	●		●								
		150608	●	●		●								
	4NU-DNGA	150404		●		●								
		150408		●		●								
		150412		●		●								
		150608		●										
SN○○ 90° Nega 	**4NU-SNGA**	120404		●									DSBNR/L MSBNR/L	B92 B109
		120408		●							●		MSDNN MSKNR/L	B109 B110
													MSRNR/L MSSNR/L	B110 B111
													PSBNR/L PSDNN	B99 B100
													PSKNR/L	B100
TN○○ 60° Nega	**3NU-TNGA**	160404		●		●	●	●	●		●		MTENN MTFNR/L	B111 B111
		160404T		●									MTGNR/L MTJNR/L	B112 B112
		160408		●		●					●		PTFNR/L PTGNR/L	B101 B102
		160408F		●									PTTNR/L WTENN	B102 B103
		160408T		●									WTJNR/L WTXNR/L	B103 B103
		160412				●								
VN○○ 35° Nega 	**2NU-VNGA**	160404	●	●	●	●			●		●		MVJNR/L	B112
		160404F		●		●							MVQNR/L	B113
		160404T		●		●							MVUNR/L	B131
		160408	●	●	●	●	●	●	●		●		MVVNN	B113
		160408F		●		●								
		160408T		●		●		●						
	T-2NU-VNGA	160408		●			●							

※ T-2NU-□□□□△△△△△△ designation package unit is 10pcs.

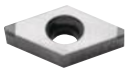
● : Stock item

cBN

Multi-Corner Type (Positive)

Dimensions (mm)				
Size	IC	RE	S	D_1
06	6.35	0.2~0.8	2.38	2.8
07	6.35	0.4~0.8	2.38	2.8
09	5.56~9.525	0.2~0.8	2.38~3.97	2.5~4.4

Dimensions (mm)				
Size	IC	RE	S	D_1
11	6.35~9.525	0.2~0.8	3.18~3.97	3.4~4.4
16	9.525	0.2~0.8	4.76	4.4

Picture	Designation		Coated				Uncoated						Available tool holders	
			DNC100	DNC250	DNC300	DNC350	DB1000	DB2000	DBN250	DBN350	DBN700A	DBNX20	Designation	Page
CC○○ 80° Posi	2NU-CCGW	060202		●									SCACR/L	B114
		060202T		●									SCLCR/L	B114
		060204		●				●						
		060204F		●										
		060204T		●										
		060208					●							
		09T302		●										
		09T304	●	●		●	●		●		●			
		09T304T		●										
		09T308	●	●		●		●	●		●			
		09T308T		●										
		09T308W		●										
DC○○ 55° Posi 	2NU-DCGW	070204		●			●						SDACR/L	B114
		070208		●									SDJCR/L	B115
		070208T					●						SDNCN	B115
		11T302		●									SDQCR/L	B134
		11T304	●	●		●	●		●				SDUCR/L	B135
		11T304F		●									SDZCR/L	B136
		11T304T		●										
		11T308	●	●		●			●		●			
		11T308T		●										
	T-2NU-DCGW	11T304		●										
		11T308		●		●								
TC○○ 60° Posi	3NU-TCGW	090204		●									STACR/L	B117
		090204F		●									STFCR/L	B118
		090204T		●									STGCR/L	B118
													STTCR/L	B118
TP○○ 60° Posi	3NU-TPGW	110304		●		●	●	●			●		CTFPR/L	B129
		110304F		●										
		110304T		●										
		110308		●		●	●	●			●			
		110308F		●										
		110308T		●										
	3NU-TPGN	110308					●	●					CTFPR/L	B106
		160304		●									CTGPR/L	B106
		160308		●										
	3NU-TPGB	110304											CTFPR/L	B106
		110308F											CTGPR/L	B106
		110308T												
VB○○ 35° Posi	2NU-VBGW	160402		●									SVABR/L	B119
		160404	●	●		●	●		●		●		SVHBR/L	B119
		160404F		●									SVJBR/L	B119
		160404T		●									SVQBR/L	B139
		160408	●	●		●		●	●				SVUBR/L	B140
		160408F		●										
		160408T		●										
	T-2NU-VBGW	160408				●								
VC○○ 35° Posi	2NU-VCGW	160404		●		●							SVVCN	B120
		160404F		●									SVJCR/L	B120
		160404T		●									SVQCR/L	B140
		160408		●									SVUCR/L	B140
		160408F		●										
		160408T		●				●						
	T-2NU-VCGW	160404		●										
		160408		●										

※ T-2NU-□□□□△△△△△△ designation package unit is 10pcs.

● : Stock item

cBN

Regrinding Type (Negative/Positive)

Dimensions (mm)				
Size	IC	RE	S	D1
09	9.525	0.4	3.97	4.4
11	6.35~9.525	0.4~0.8	3.8~3.97	3.4~4.4
12	12.7	0.4~0.8	4.76	5.16

Dimensions (mm)				
Size	IC	RE	S	D1
15	12.7	0.4~0.8	4.76	5.16
16	9.525	0.4~0.8	4.76	3.81~4.4

Picture	Designation		Coated				Uncoated						Available tool holders			
			DNC100	DNC250	DNC300	DNC350	DB1000	DB2000	DBN250	DBN350	DBN700A	DBNX20	Designation		Page	
CN○○ 80° Nega	CNMA	120404							●				DCBNR/L	MCKNR/L	B91	B107
		120408							●			●	DCLNR/L	MCLNR/L	B91	B107
	T-CNMA	120408							●				PCBNR/L	MCMNN	B96	B107
													PCLNR/L		B97	
DN○○ 55° Nega	DNMA	150404							●				DDJNR/L	MDJNR/L	B92	B108
		150408							●				MDNNN	MDQNR/L	B108	B109
													MDUNR/L	PDJNR/L	B130	B97
													PDNNR/L	PDSNR/L	B98	B127
													PDUNR/L		B127	
TN○○ 60° Nega	TNMA	160404							●				MTENN	MTFNR/L	B111	B111
		160408							●				MTGNR/L	MTJNR/L	B112	B112
													PTFNR/L	PTGNR/L	B101	B102
													PTTNR/L	WTENN	B102	B103
													WTJNR/L	WTXNR/L	B103	B103
VN○○ 35° Nega	T-VNMA	160404							●				MVJNR/L		B112	
	VNMA	160404							●				MVQNR/L		B113	
		160408							●				MVUNR/L		B131	
													MVVNN		B113	
CC○○ 80° Posi	CCMW	09T304							●				SCACR/L		B114	
													SCLCR/L		B114	
DC○○ 55° Posi	DCGW	11T308							●				SDACR/L		B114	
	T-DCGW	11T308							●				SDJCR/L		B115	
													SDNCN		B115	
VB○○ 35° Posi	VBMW	160404							●				SVABR/L		B119	
		160408							●				SVHBR/L		B119	
													SVJBR/L		B119	
													SVQBR/L		B139	
													SVUBR/L		B140	
TP○○ 60° Posi	T-TPGB	110304											CTFPR/L		B106	
	TPGB	110304							●				CTGPR/L		B106	
		110308							●							

※ T-2NU-□□□□△△△△△△ designation package unit is 10pcs.

● : Stock item

PCD

Insert (Negative/Positive)

Dimensions (mm)				
Size	IC	RE	S	D_1
06	6.35	0.2~0.4	2.38	2.8
07	6.35	0.2~0.4	2.38	2.8
08	4.76	0.4	2.38	2.3
09	5.56~9.525	0.4	2.38~3.97	2.5~4.4

Dimensions (mm)				
Size	IC	RE	S	D_1
11	6.35~9.525	0.2~0.8	3.18~3.97	3.4~4.4
12	12.7	0.4~0.8	4.76	5.16
15	12.7	0.4~0.8	4.76	5.16
16	9.525	0.4~0.8	4.76	3.81

Picture	Designation		PCD			Available tool holders			
			DP90	DP150	DP200	Designation		Page	
CN○○ 80° Nega	CNMM	120404		●		DCBNR/L	DCLNR/L	B91	B91
		120408		●		MCKNR/L	MCLNR/L	B107	B107
						MCMNN	PCBNR/L	B107	B96
						PCLNR/L		B97	
DN○○ 55° Nega	DNMM	150404		●		DDJNR/L	MDJNR/L	B92	B108
		150408		●		MDNNN	MDQNR/L	B108	B109
						MDUNR/L	PDJNR/L	B130	B97
						PDNNR/L	PDSNR/L	B98	B127
						PDUNR/L		B127	
CC○○ 80° Posi	CCMW	120404		●		SCACR/L		B114	
	CCMT	060202		●		SCLCR/L		B114	
		060204		●					
		09T304		●					
		09T308		●					
DC○○ 55° Posi	DCMT	070202		●		SDACR/L		B114	
		070204		●		SDJCR/L		B115	
		11T302		●		SDNCN		B115	
		11T304		●		SDQCR/L		B134	
		11T308		●		SDUCR/L		B135	
	DCGT	11T304		●		SDZCR/L		B136	
TP○○ 60° Posi	TPGW	080204		●		STUPR/L		B143	
		090204		●		STFPR/L		B138	
		110304		●					
		110308		●					
VB○○ VC○○ 35° Posi	VBGW	160404		●		SVHBR/L		B119	
	VBMT	110304		●		SVJBR/L		B119	
		110308		●		SVUBR/L		B140	
		160404		●					
		160408		●					
	VCMT	160404		●		SVVCN		B120	
		160408		●					
TP○○ 60° Posi	TPGN	110304		●		CTFPR/L		B129	
		110308		●					
SP○○ 90° Posi	SPGN	090304		●		CSDPN		B105	
						CSKPR/L		B106	

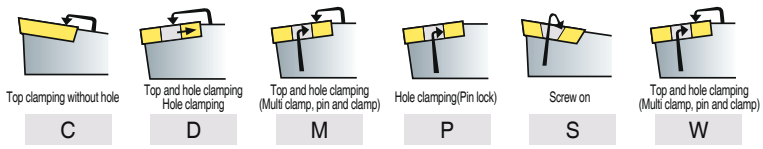
● : Stock item

P S K N R 25 25 - M 12

1	2	3	4	5	6	7	8	9
Clamping Method of Insert	Insert Shape	Holder Style	Relief Angle of Insert	Hand	Height of Shank	Width of Shank	Length of Holder	Length of Insert Cutting Edge

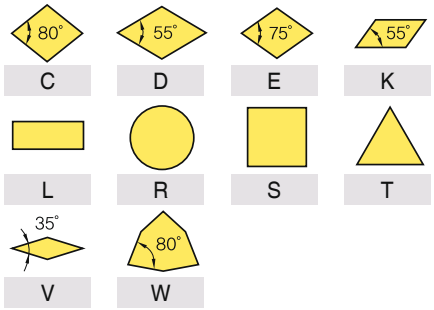
1 Clamping Method of Insert

P S K N R 25 25 - M 12



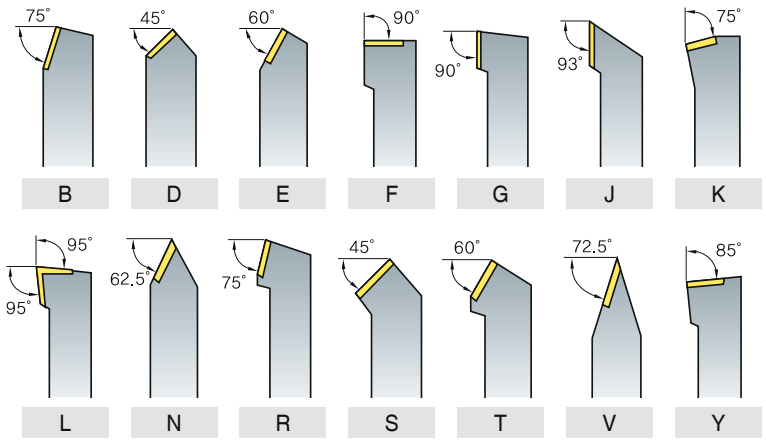
2 Insert Shape

P S K N R 25 25 - M 12



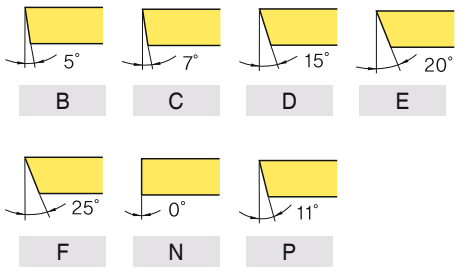
3 Holder Style

P S K N R 25 25 - M 12



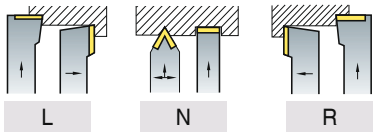
4 Relief Angle of Insert

P S K N R 25 25 - M 12



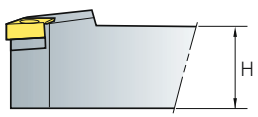
5 Hand

P S K N R 25 25 - M 12



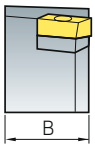
6 Height of Shank

P S K N R 25 25 - M 12



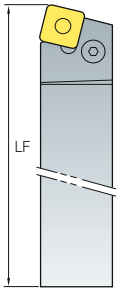
7 Width of Shank

P S K N R 25 25 - M 12



8 Length of Holder

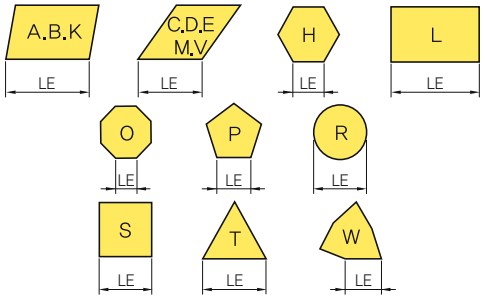
P S K N R 25 25 - M 12



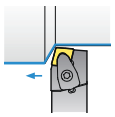
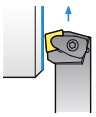
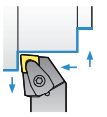
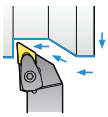
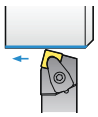
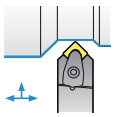
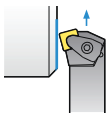
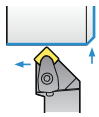
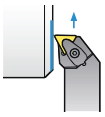
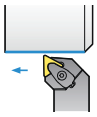
A - 32	H - 100	Q - 180	X-Special Item
B - 40	J - 110	R - 200	
C - 50	K - 125	S - 250	
D - 60	L - 140	T - 300	
E - 70	M - 150	U - 350	
F - 80	N - 160	V - 400	
G - 90	P - 170	W - 450	

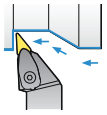
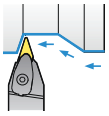
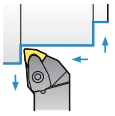
9 Length of Insert Cutting Edge

P S K N R 25 25 - M 12

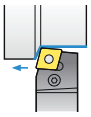
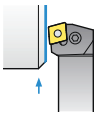
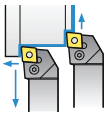
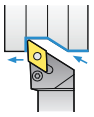
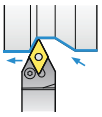
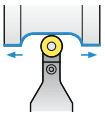
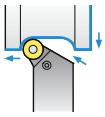
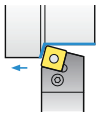
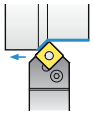
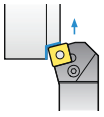


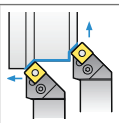
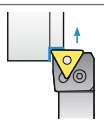
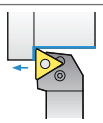
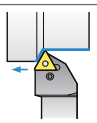
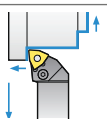
Double Clamp System

Cutting Shape										
Designation	**DCBNR/L**	**DCKNR/L**	**DCLNR/L**	**DDJNR/L**	**DSBNR/L**	**DSDNN**	**DSKNR/L**	**DSSNR/L**	**DTFNR/L**	**DTGNR/L**
Tool cutting edge angle	75°	75°	95°	93°	75°	45°	75°	45°	90°	90°
Page	B91	B91	B91	B92	B92	B93	B93	B93	B94	B94
Turning	●		●	●	●	●		●		●
Copying				●						
Facing		●	●				●	●	●	
Chamfering						●				
Back turning			●	●						

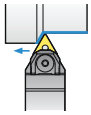
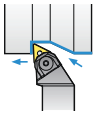
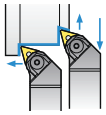
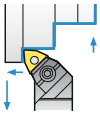
Cutting Shape			
Designation	**DVJNR/L**	**DVVNN**	**DWLNR/L**
Tool cutting edge angle	93°	72.5°	95°
Page	B94	B95	B95
Turning	●	●	●
Copying	●	●	
Facing			●
Chamfering			
Back turning	●		●

Lever Lock System

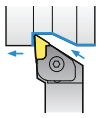
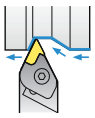
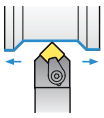
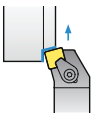
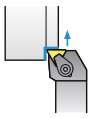
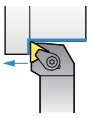
Cutting Shape										
Designation	**PCBNR/L**	**PCKNR/L**	**PCLNR/L**	**PDJNR/L**	**PDNNR/L**	**PRDCN**	**PRGCR/L**	**PSBNR/L**	**PSDNN**	**PSKNR/L**
Tool cutting edge angle	75°	75°	95°	93°	62.5°	-	-	75°	45°	75°
Page	B96	B96	B97	B97	B98	B98	B99	B99	B100	B100
Turning	●	●	●	●	●	●	●	●	●	
Copying				●	●	●	●			
Facing			●							●
Chamfering										
Back turning			●	●						

Cutting Shape					
Designation	**PSSNR/L**	**PTFNR/L**	**PTGNR/L**	**PTTNR/L**	**PWLNR/L**
Tool cutting edge angle	45°	90°	90°	60°	95°
Page	B101	B101	B102	B102	B102
Turning	●		●	●	●
Copying					
Facing	●	●			●
Chamfering				●	
Back turning					●

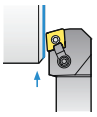
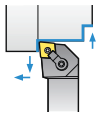
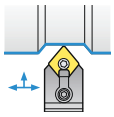
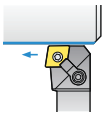
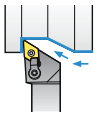
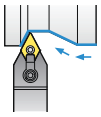
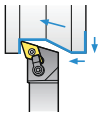
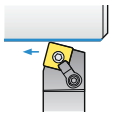
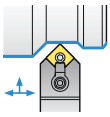
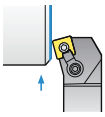
Wedge Clamp System

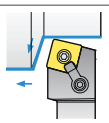
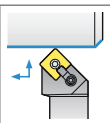
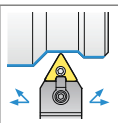
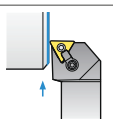
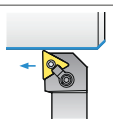
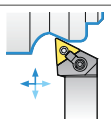
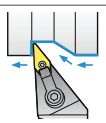
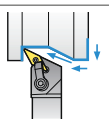
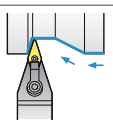
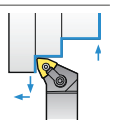
Cutting Shape										
Designation	**WTENN**	**WTJNR/L**	**WTXNR/L**	**WWLNR/L**						
Tool cutting edge angle	60°	93°	105°	95°						
Page	B103	B103	B103	B104						
Turning	●	●	●	●						
Copying	●	●	●							
Facing				●						
Chamfering										
Back turning		●	●	●						

Clamp on System

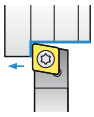
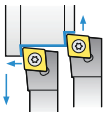
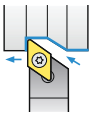
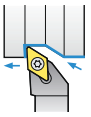
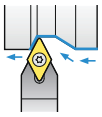
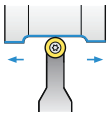
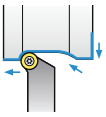
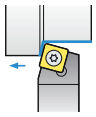
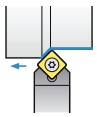
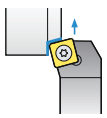
Cutting Shape										
Designation	**CKJNR/L**	**CKNNR/L**	**CSDPN**	**CSKPR/L**	**CTFPR/L**	**CTGPR/L**				
Tool cutting edge angle	93°	62.5°	45°	75°	90°	90°				
Page	B105	B105	B105	B106	B106	B106				
Turning	●	●	●			●				
Copying	●	●								
Facing				●	●					
Chamfering										
Back turning	●									

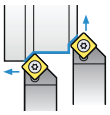
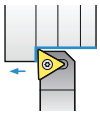
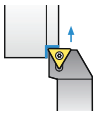
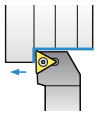
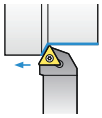
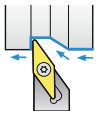
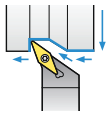
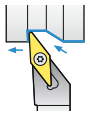
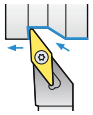
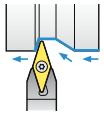
Multi Lock System

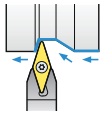
Cutting Shape										
Designation	**MCKNR/L**	**MCLNR/L**	**MCMNN**	**MCRNR/L**	**MDJNR/L**	**MDNNN**	**MDQNR/L**	**MSBNR/L**	**MSDNN**	**MSKNR/L**
Tool cutting edge angle	75°	95°	50°	75°	93°	62.5°	107.5°	75°	45°	75°
Page	B107	B107	B107	B108	B108	B108	B109	B109	B109	B110
Turning		●	●	●	●	●	●	●	●	
Copying					●	●	●			
Facing	●	●								●
Chamfering										
Back turning		●			●		●			

Cutting Shape										
Designation	**MSRNR/L**	**MSSNR/L**	**MTENN**	**MTFNR/L**	**MTGNR/L**	**MTJNR/L**	**MVJNR/L**	**MVQNR/L**	**MVVNN**	**MWLNR/L**
Tool cutting edge angle	75°	45°	60°	90°	90°	93°	93°	117.5°	72.5°	95°
Page	B110	B111	B111	B111	B112	B112	B112	B113	B113	B113
Turning	●	●	●		●	●	●	●	●	●
Copying			●			●	●	●	●	
Facing		●		●		●				●
Chamfering										
Back turning						●	●	●		●

Screw on System

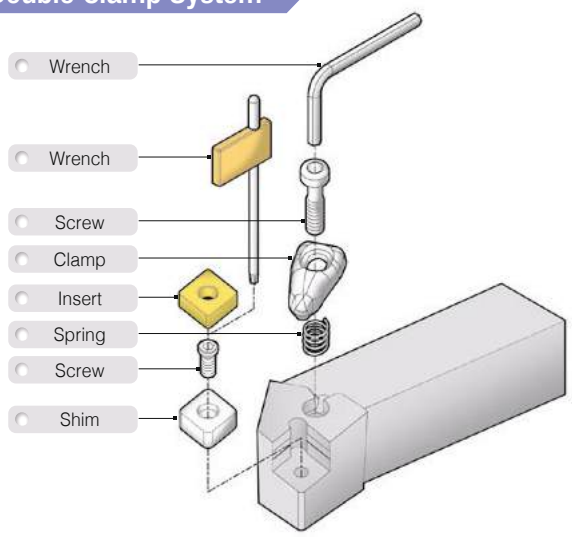
Cutting Shape										
Designation	**SCACR/L**	**SCLCR/L**	**SDACR/L**	**SDJCR/L**	**SDNCN**	**SRDCN**	**SRGCR/L**	**SSBCR/L**	**SSDCN**	**SSKCR/L**
Tool cutting edge angle	90°	95°	90°	93°	62.5°	-	-	75°	45°	75°
Page	B114	B114	B114	B115	B115	B115	B116	B116	B116	B117
Turning	●	●	●	●	●	●	●	●	●	
Copying			●	●	●	●	●			
Facing		●								●
Chamfering										
Back turning		●		●						

Cutting Shape										
Designation	**SSSCR/L**	**STACR/L**	**STFCR/L**	**STGCR/L**	**STTCR/L**	**SVABR/L**	**SVHBR/L**	**SVJBR/L**	**SVJCR/L**	**SVVBN**
Tool cutting edge angle	45°	90°	90°	90°	60°	90°	107.5°	93°	93°	72.5°
Page	B117	B117	B118	B118	B118	B119	B119	B119	B120	B120
Turning	●	●		●	●	●	●	●	●	●
Copying						●	●	●	●	●
Facing	●		●							
Chamfering										
Back turning						●	●	●	●	

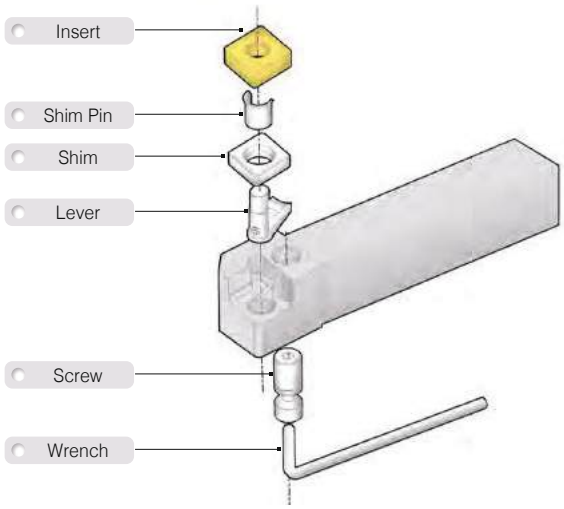
Cutting Shape										
Designation	**SVVCN**									
Tool cutting edge angle	72.5°									
Page	B120									
Turning	●									
Copying	●									
Facing										
Chamfering										
Back turning										

Instruction of External Holders

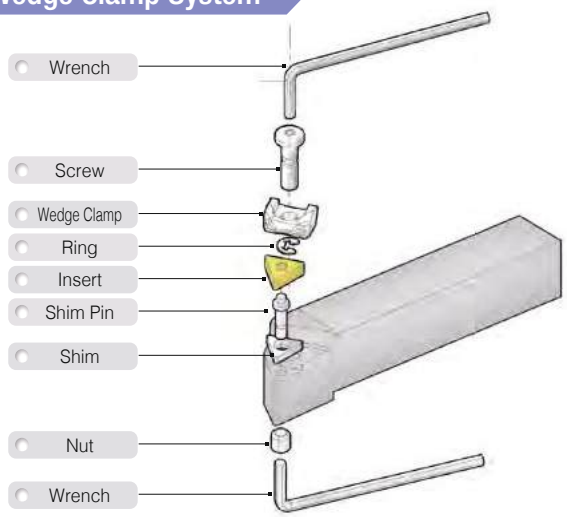
Double Clamp System



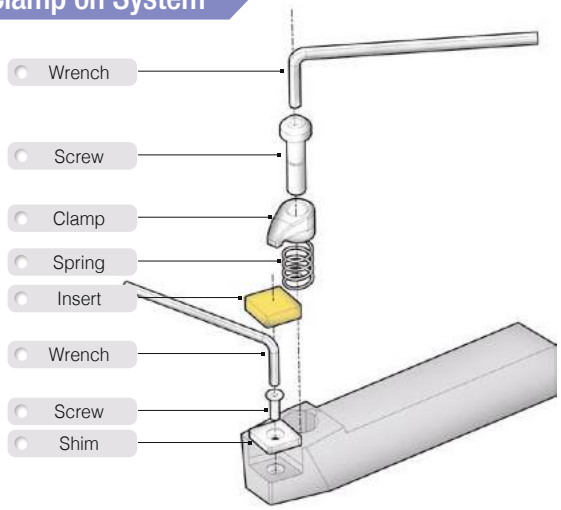
Lever Lock System



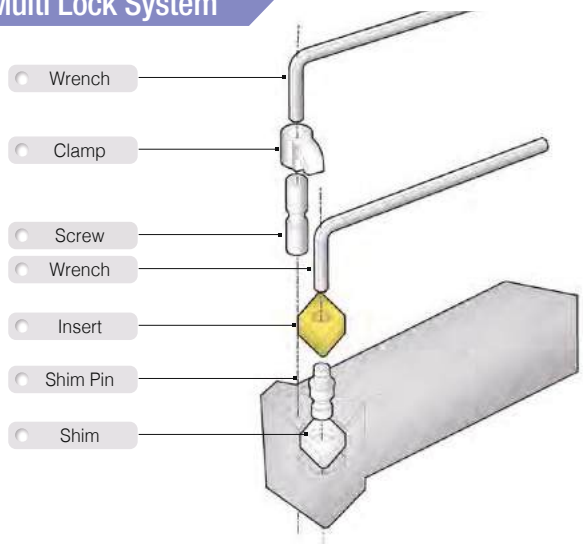
Wedge Clamp System



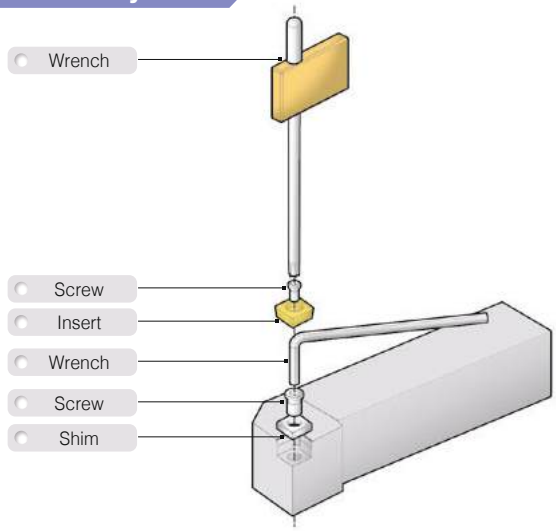
Clamp on System



Multi Lock System

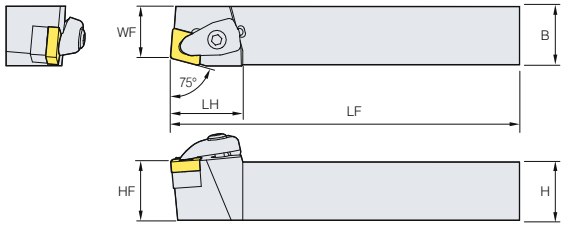


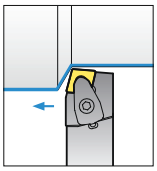
Screw on System



DCBNR/L

CN□□





75°
• R type holder

(mm)

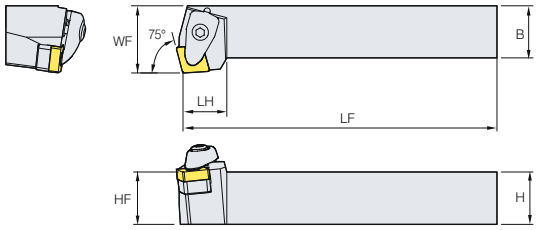
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DCBNR/L	2020-K12	●	●	31	125	17	20	20	20	R/L	CN□□1204□□	CVH4	CHX0518	SC44V	FTKA0410	SPR0714	HW30P
	2525-M12	●	●	31	150	22	25	25	25	R/L							
	3225-P12	●		31	170	22	32	25	32	R/L							
	2525-M16			38	150	22	25	25	25	R/L	CN□□1606□□	CVH5	CHX0622	SC54V	FTNA0511	SPR0811	HW40L
	3232-P16			38	170	27	32	32	32	R/L							
	3232-P19	●	●	43	170	27	32	32	32	R/L	CN□□1906□□	CVH6	CHX0622	SC63V	FTNA0511	SPR0811	HW40L
	4040-S19			43	250	35	40	40	40	R/L							

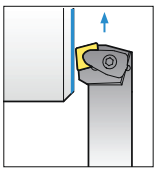
Applicable inserts **B5 ~ B12**

● : Stock item

DCKNR/L

CN□□





75°
• R type holder

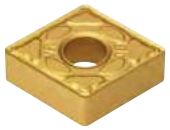
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DCKNR/L	2020-K12			21	125	25	20	20	20	R/L	CN□□1204□□	CVH4	CHX0518	SC44V	FTKA0410	SPR0714	HW30P
	2525-M12	●	●	21	150	32	25	25	25	R/L							
	3225-P12			21	170	32	32	25	32	R/L							
	3232-P16			26	170	40	32	32	32	R/L	CN□□1606□□	CVH5	CHX0622	SC54V	FTNA0511	SPR0811	HW40L
	4040-S16			26	250	50	40	40	40	R/L							

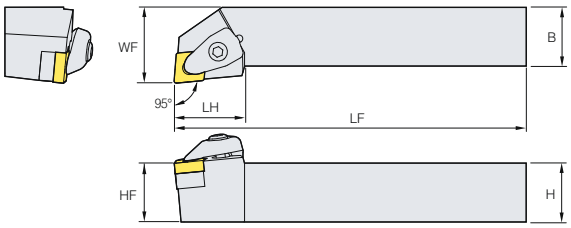
Applicable inserts **B5 ~ B12**

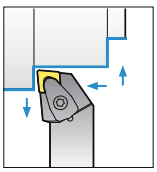
● : Stock item

DCLNR/L



CN□□





95°
• R type holder

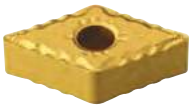
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DCLNR/L	2020-K09			24.5	125	25	20	20	20	R/L	CN□□0903□□	CVH3	CHX0415	SC32V	FTKA0307	SPR0510	HW25P
	2525-M09			24.5	150	32	25	25	25	R/L							
	2020-K12	●	●	30	125	25	20	20	20	R/L	CN□□1204□□	CVH4	CHX0518	SC44V	FTKA0410	SPR0714	HW30P
	2525-M12	●	●	30	150	32	25	25	25	R/L							
	3225-P12	●	●	30	170	32	32	25	32	R/L							
	3232-P12	●	●	30	170	40	32	32	32	R/L							
	2525-M16	●	●	36	150	32	25	25	25	R/L	CN□□1606□□	CVH5	CHX0622	SC54V	FTNA0511	SPR0811	HW40L
	3225-P16	●	●	36	170	32	32	25	32	R/L							
	3232-P16	●	●	39	170	40	32	32	32	R/L							
	2525-M19			40	150	32	25	25	25	R/L	CN□□1906□□	CVH6	CHX0622	SC63V	FTNA0511	SPR0811	HW40L
	3225-P19			40	170	32	32	25	32	R/L							
	3232-P19	●	●	40	170	40	32	32	32	R/L							
	4040-S19	●	●	40	250	50	40	40	40	R/L							

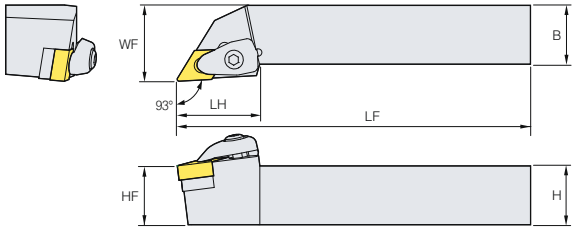
Applicable inserts **B5 ~ B12**

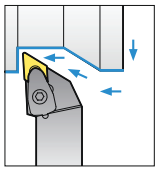
● : Stock item

DDJNR/L



DN□□





93°

• R type holder

(mm)

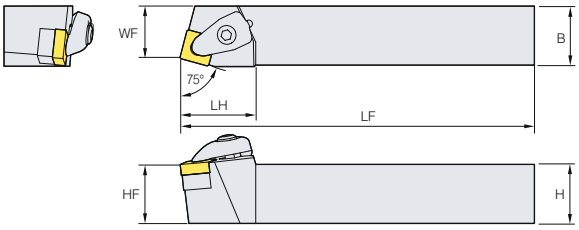
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DDJNR/L	2020-K11	●	●	30	125	25	20	20	20	R/L	DN□□1104□□	CVH3	CHX0415	SD32V	FTKA0307	SPR0510	HW25P
	2525-M11	●	●	30	150	32	25	25	25	R/L							
	3225-P11			30	170	32	32	25	32	R/L							
	3232-P11			30	170	40	32	32	32	R/L							
	2020-K15	●	●	35	125	25	20	20	20	R/L	DN□□1506□□	CVH4	CHX0518	SD43V	FTKA0410	SPR0714	HW30P
	2525-M15	●	●	35	150	32	25	25	25	R/L							
	3225-P15	●		35	170	32	32	25	32	R/L							
	3232-P15	●	●	35	170	40	32	32	32	R/L							
	2020-K15-3	●	●	35	125	25	20	20	20	R/L	DN□□1504□□	CVH4	CHX0518	SD44V	FTKA0410	SPR0714	HW30P
	2525-M15-3	●	●	35	150	32	25	25	25	R/L							
	3232-P15-3	●		35	170	40	32	32	32	R/L							

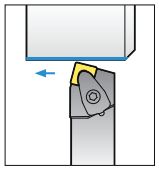
Applicable inserts **B13 ~ B18**

● : Stock item

DSBNR/L

SN□□





75°

• R type holder

(mm)

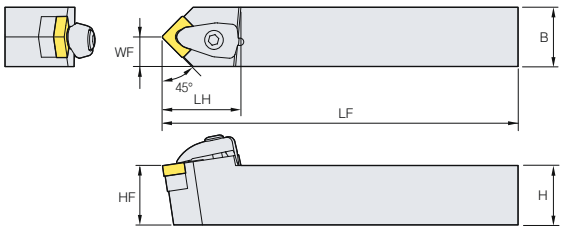
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DSBNR/L	2020-K09			25	125	17	20	20	20	R/L	SN□□0903□□	CVH3	CHX0415	SS32V	FTKA0307	SPR0510	HW25P
	2525-M09			25	150	22	25	25	25	R/L							
	2020-K12	●		32	125	17	20	20	20	R/L	SN□□1204□□	CVH4	CHX0518	SS44V	FTKA0410	SPR0714	HW30P
	2525-M12	●	●	31	150	22	25	25	25	R/L							
	3225-P12	●		32	170	22	32	25	32	R/L							
	3232-P12			32	170	27	32	32	32	R/L							
	2525-M15			38	150	22	25	25	25	R/L	SN□□1506□□	CVH5	CHX0622	SS54V	FTNA0511	SPR0811	HW40L
	3225-P15			38	170	22	32	25	32	R/L							
	3232-P15			38	170	27	32	32	32	R/L							
	3232-P19			43	170	27	32	32	32	R/L	SN□□1906□□	CVH6	CHX0622	SS64V	FTNA0511	SPR0811	HW40L
	4040-S19			43	250	35	40	40	40	R/L							

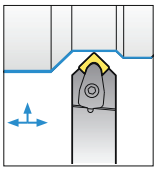
Applicable inserts **B20 ~ B28**

● : Stock item

DSDNN

SN□□





45°

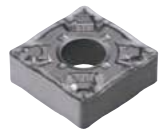
(mm)

Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DSDNN	2020-K09		26.55	125	10	20	20	20	N	SN□□0903□□	CVH3	CHX0415	SS32V	FTKA0307	SPR0510	HW25P
	2020-K12	●	33	125	10	20	20	20	N	SN□□1204□□	CVH4	CHX0518	SS44V	FTKA0410	SPR0714	HW30P
	2525-M12	●	33	150	12.5	25	25	25	N							
	3225-P12	●	33	170	12.5	32	25	32	N							
	3232-P12	●	33	170	16	32	32	32	N							
	2525-M15		39.4	150	12.5	25	25	25	N	SN□□1506□□	CVH5	CHX0622	SS54V	FTNA0511	SPR0811	HW25P
	3232-P15		39.7	170	16	32	32	32	N							
	3232-P19	●	44.5	170	16	32	32	32	N	SN□□1906□□	CVH6	CHX0622	SS64V	FTNA0511	SPR0811	HW40L
	4040-S19		45	250	20	40	40	40	N							

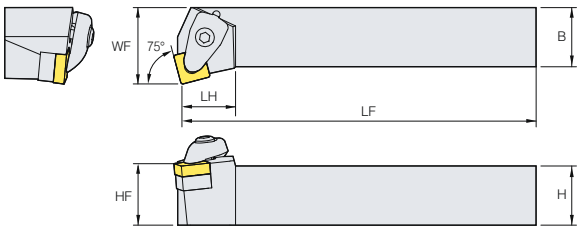
Applicable inserts **B20 ~ B28**

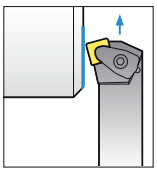
● : Stock item

DSKNR/L



SN□□





75°

• R type holder

(mm)

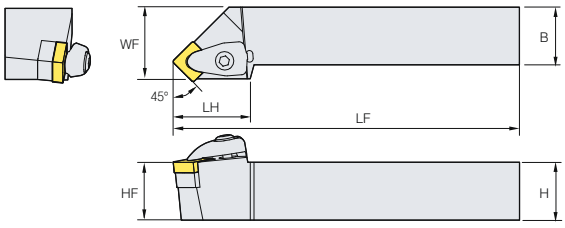
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DSKNR/L	2020-K09			20	125	25	20	20	20	R/L	SN□□0903□□	CVH3	CHX0415	SS32V	FTKA0307	SPR0510	HW25P
	2020-K12	●	●	21.5	125	25	20	20	20	R/L	SN□□1204□□	CVH4	CHX0518	SS44V	FTKA0410	SPR0714	HW30P
	2525-M12	●		23	150	32	25	25	25	R/L							
	3232-P12	●		23	170	40	32	32	32	R/L							
	3232-P15			28	170	40	32	32	32	R/L	SN□□1506□□	CVH5	CHX0622	SS54V	FTNA0511	SPR0811	HW40L
	3232-P19			35	170	40	32	32	32	R/L	SN□□1906□□	CVH6	CHX0622	SC64V	FTNA0511	SPR0811	HW40L
	4040-S19			35	250	50	40	40	40	R/L							

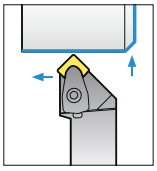
Applicable inserts **B20 ~ B28**

● : Stock item

DSSNR/L

SN□□





45°

• R type holder

(mm)

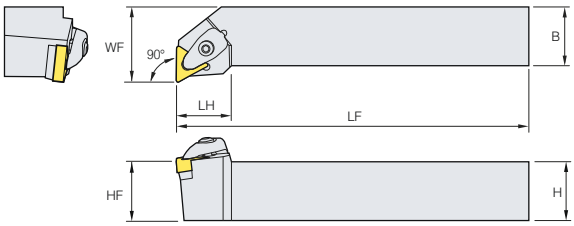
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DSSNR/L	2020-K09			28.5	125	25	20	20	20	R/L	SN□□0903□□	CVH3	CHX0415	SS32V	FTKA0307	SPR0510	HW25P
	2020-K12	●	●	35	125	25	20	20	20	R/L	SN□□1204□□	CVH4	CHX0518	SS44V	FTKA0410	SPR0714	HW30P
	2525-M12	●	●	35	150	32	25	25	25	R/L							
	3225-P12	●		35	170	32	32	25	32	R/L							
	3232-P12	●		35	170	40	32	32	32	R/L							
	2525-M15			38.5	150	32	25	25	25	R/L	SN□□1506□□	CVH5	CHX0622	SS54V	FTNA0511	SPR0811	HW40L
	3232-P15			38.4	170	40	32	32	32	R/L							
	3232-P19	●		46	170	40	32	32	32	R/L	SN□□1906□□	CVH6	CHX0622	SS64V	FTNA0511	SPR0811	HW40L
	4040-S19			46	250	50	40	40	40	R/L							

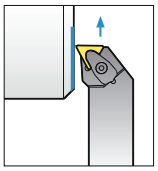
Applicable inserts **B20 ~ B28**

● : Stock item

DTFNR/L

TN□□





90°

• R type holder

(mm)

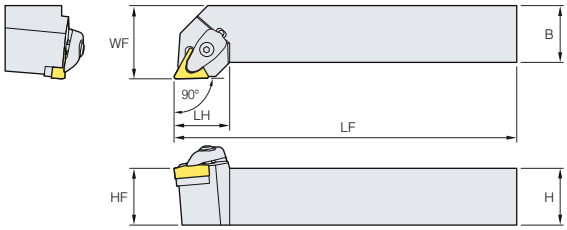
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DTFNR/L	2020-K16			23.5	125	25	20	20	20	R/L	TN□□1604□□	CVH3	CHX0415	ST32V	FTKA0307	SPR0510	HW25P
	2525-M16			23.5	150	32	25	25	25	R/L							
	3232-P16			23.5	170	40	32	32	32	R/L							
	2525-M22			33	150	32	25	25	25	R/L	TN□□2204□□	CVH4	CHX0518	ST44V	FTKA0410	SPR0714	HW30P
	3225-P22			33	170	32	32	25	32	R/L							
	3232-P22			33	170	40	32	32	32	R/L							

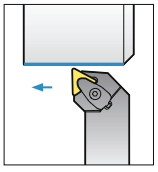
Applicable inserts **B29 ~ B36**

● : Stock item

DTGNR/L

TN□□





90°

• R type holder

(mm)

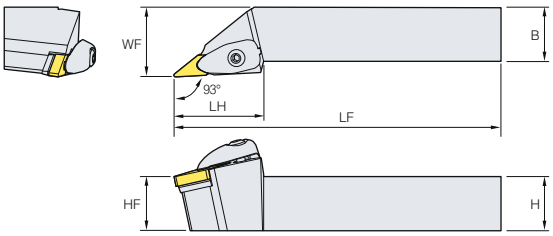
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DTGNR/L	2020-K16			24.5	125	25	20	20	20	R/L	TN□□1604□□	CVH3	CHX0415	ST32V	FTKA0307	SPR0510	HW25P
	2525-M16			24.5	150	32	25	25	25	R/L							
	3232-P16			24.5	170	40	32	32	32	R/L							
	2525-M22			32.6	150	32	25	25	25	R/L	TN□□2204□□	CVH4	CHX0518	ST44V	FTKA0410	SPR0714	HW30P
	3225-P22			32.6	170	32	32	25	32	R/L							
	3232-P22			32.6	170	40	32	32	32	R/L							

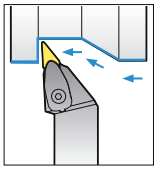
Applicable inserts **B29 ~ B36**

● : Stock item

DVJNR/L

VN□□





93°

• R type holder

(mm)

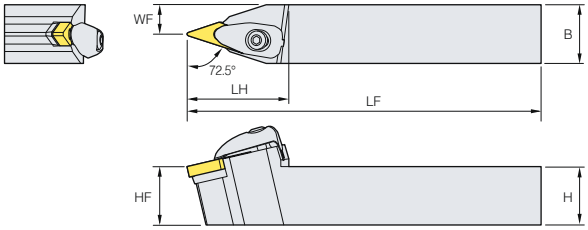
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DVJNR/L	2020-K16	●	●	41.5	125	25	20	20	20	R/L	VN□□1604□□	CVH3V	CHX0518	SV32V	FTNA03508	SPR0714	HW30P
	2525-M16	●	●	41.5	150	32	25	25	25	R/L							
	3232-P16	●	●	41.5	170	40	32	32	32	R/L							

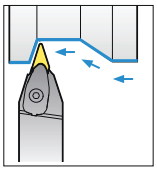
Applicable inserts **B37 ~ B38**

● : Stock item

DVVNN

VN□□





72.5°

(mm)

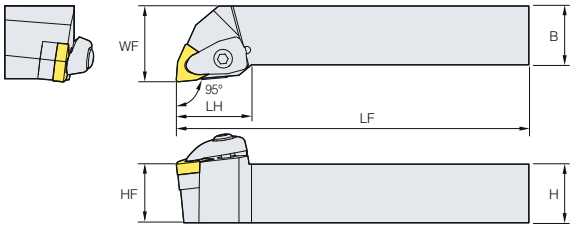
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
DVVNN	2020-K16		40	125	10.582	20	20	20	N	VN□□1604□□	CVH3V	CHX0518	SV32V	FTNA03508	SPR0714	HW30P
	2525-M16	●	40	150	13.08	25	25	25	N							
	3232-P16		40	170	16.58	32	32	32	N							

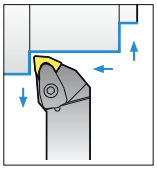
Applicable inserts **B37 ~ B38**

● : Stock item

DWLNR/L

WN□□





95°

• R type holder

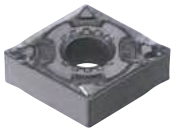
(mm)

Designation		Stock		LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Wrench
		R	L														
DWLNR/L	2020-K06	●	●	26.5	125	25	20	20	20	R/L	WN□□0604□□	CVH3	CHX0415	SW32V	FTKA0307	SPR0510	HW25P
	2525-M06	●	●	26	150	32	25	25	25	R/L							
	2020-K08	●	●	32	125	25	20	20	20	R/L	WN□□0804□□	CVH4	CHX0518	SW44V	FTKA0410	SPR0714	HW30P
	2525-M08	●	●	32	150	32	25	25	25	R/L							

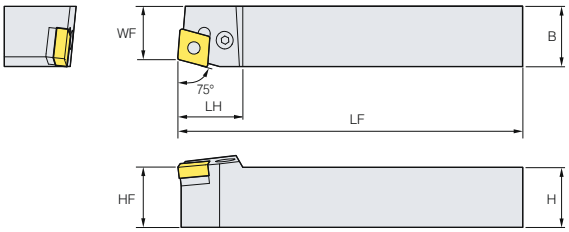
Applicable inserts **B39 ~ B43**

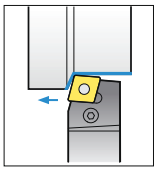
● : Stock item

PCBNR/L



CN□□





75°

• R type holder

(mm)

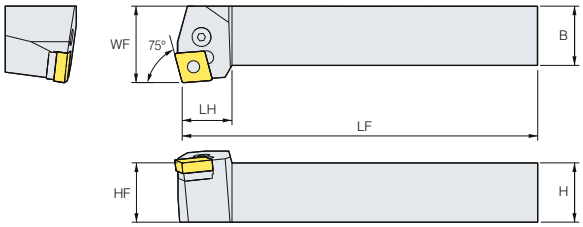
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PCBNR/L	2020-K12	●	●	27	125	17	20	20	20	R/L	CN□□1204□□	LV4	VHX0821	SC42	SP4	HW30L	LSPS4
	2525-M12	●	●	27	150	22	25	25	25	R/L							
	3225-P12	●	●	27	170	22	32	25	32	R/L							
	2525-M16	●	●	33	150	22	25	25	25	R/L	CN□□1606□□	LV5	VHX0825	SC53	SP5	HW30L	LSPS6
	3232-P16	●	●	33	170	27	32	32	32	R/L							
	3232-P19	●	●	36	170	27	32	32	32	R/L	CN□□1906□□	LV6N	VHX1027N	SC63N	SP6N	HW40L	LSPS6
	4040-S19	●	●	38	250	35	40	40	40	R/L							
	4040-S25	●	●	47	250	35	40	40	40	R/L	CN□□2509□□	LV8N	VHX1236N	SC84N	SP8N	HW50L	LSPS8
	4040-S25-5			47	250	35	40	40	40	R/L	CN□□2507□□						
	5050-T25	●	●	47	300	43	50	50	50	R/L	CN□□2509□□	LV8N	VHX1236N	SC84N	SP8N	HW50L	LSPS8

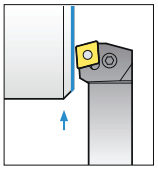
Applicable inserts **B5 ~ B12**

● : Stock item

PCKNR/L

CN□□





75°

• R type holder

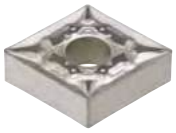
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PCKNR/L	2020-K12	●	●	27	125	25	20	20	20	R/L	CN□□1204□□	LV4	VHX0821	SC42	SP4	HW30L	LSPS4
	2525-M12	●	●	27	150	32	25	25	25	R/L							
	3225-P12			30	170	32	32	25	32	R/L							
	3232-P16			33	170	39	32	32	32	R/L	CN□□1606□□	LV5	VHX0825	SC53	SP5	HW30L	HW30L
	4040-S16			33	250	50	40	40	40	R/L							

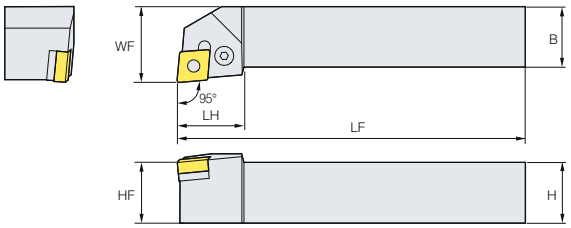
Applicable inserts **B5 ~ B12**

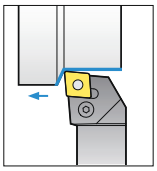
● : Stock item

PCLNR/L



CN□□





95°

• R type holder

(mm)

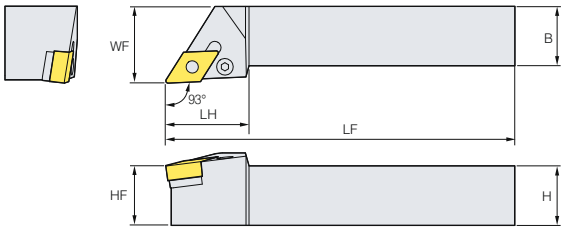
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PCLNR/L	1616-H09	●		22	100	20	16	16	16	R/L							
	2020-K09	●	●	22	125	25	20	20	20	R/L	CN□□0903□□	LV3	VHX0617	SC32	SP3	HW25L	LSPS3
	2525-M09	●	●	22	150	32	25	25	25	R/L							
	1616-H12	●	●	28	100	20	16	16	16	R/L							
	2020-K12	●	●	28	125	25	20	20	20	R/L							
	2525-M12	●	●	28	150	32	25	25	25	R/L	CN□□1204□□	LV4	VHX0821	SC42	SP4	HW30L	LSPS4
	3225-P12	●	●	28	170	32	32	25	32	R/L							
	3232-P12	●	●	28	170	32	32	32	32	R/L							
	2525-M16	●	●	32	150	32	25	25	25	R/L	CN□□1606□□	LV5	VHX0825	SC53	SP5	HW30L	LSPS5
	3232-P16	●	●	33	170	40	32	32	32	R/L							
	2525-M19	●	●	36	150	32	25	25	25	R/L							
	3225-P19	●		36	170	32	32	25	32	R/L							
	3232-P19	●	●	36	170	40	32	32	32	R/L	CN□□1906□□	LV6N	VHX1027N	SC63N	SP6N	HW40L	LSPS6
	4040-P19	●	●	36	170	50	40	40	40	R/L							
	4040-S19	●	●	36	250	50	40	40	40	R/L							
	4040-S25	●	●	47	250	50	40	40	40	R/L	CN□□2509□□	LV8N	VHX1236N	SC84N	SP8N	HW50L	LSPS8
	5050-T25	●	●	60	300	60	50	50	50	R/L							
	4040-S25-5			47	250	50	40	40	40	R/L	CN□□2507□□	LV8N	VHX1236N	SC84N	SP8N	HW50L	LSPS8
	5050-S25-5			47	250	60	50	50	50	R/L							

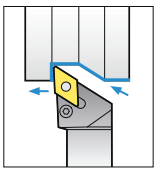
Applicable inserts **B5 ~ B12**

● : Stock item

PDJNR/L

DN□□





93°

• R type holder

(mm)

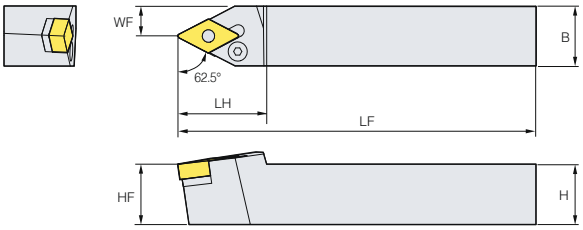
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PDJNR/L	1616-H11	●	●	25	100	20	16	16	16	R/L							
	2020-K11	●	●	25	125	25	20	20	20	R/L	DN□□1104□□	LV3	VHX0617	SD317	SP4	HW30L	LSPS4
	2525-M11	●	●	30	150	30	25	25	25	R/L							
	2020-K15	●	●	35	125	25	20	20	20	R/L							
	2525-M15	●	●	35	150	32	25	25	25	R/L							
	3225-P15	●	●	35	170	32	32	25	32	R/L	DN□□1506□□	LV4B	VHX0821	SD42	SP4	HW30L	LSPS4
	3232-P15	●	●	35	170	40	32	32	32	R/L							
	2020-K15-3	●		35	125	25	20	20	20	R/L							
	2525-M15-3	●	●	35	150	32	25	25	25	R/L	DN□□1504□□	LV4	VHX0821	SD42	SP4	HW30L	LSPS4
	3232-P15-3			35	170	40	32	32	32	R/L							

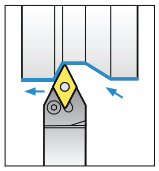
Applicable inserts **B13 ~ B18**

● : Stock item

PDNNR/L

DN□□





62.5°

• R type holder

(mm)

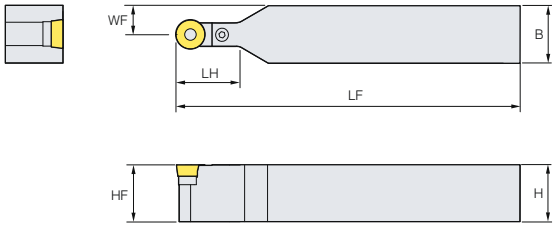
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PDNNR/L	2020-K15	●		37	125	8	20	20	20	R/L	DN□□1506□□	LV4B	VHX0821	SD42	SP4	HW30L	LSPS4
	2525-M15	●	●	37	150	12.5	25	25	25	R/L							
	3232-P15	●		37	170	16	32	32	32	R/L							
	4025-M15			37	150	12.5	40	25	40	R/L							
	2525-M15-3	●		37	150	12.5	25	25	25	R/L	DN□□1504□□	LV4	VHX0821	SD42	SP4	HW30L	LSPS4
	4025-M15-3			37	150	12.5	40	25	40	R/L							

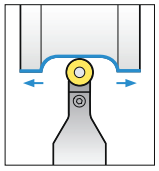
Applicable inserts **B13 ~ B18**

● : Stock item

PRDCN

RCMX





(mm)

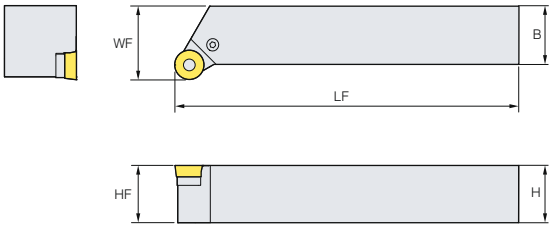
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PRDCN	2020-M10	●	22	150	10	20	20	20	N	RCMX1003M0	LR10	VHX0514	SR10	SP3	HW20L	LSPS3
	2525-M10	●	24	150	12.5	25	25	25	N							
	2525-M12	●	24	150	12.5	25	25	25	N	RCMX1204M0	LR12	VHX0617	SR12	SP3	HW25L	LSPS3
	2020-K12	●	24	125	10	20	20	20	N							
	3225-Q12	●	24	180	12.5	32	25	32	N							
	2525-Q16	●	30	180	12.5	25	25	25	N	RCMX1606M0	LR16	VHX0621	SR16	SP4	HW25L	LSPS4
	3225-Q16	●	30	180	12.5	32	25	32	N							
	3232-Q16	●	35	180	16	32	32	32	N							
	3232-Q20	●	40	180	16	32	32	32	N	RCMX2006M0	LR20	VHX0823	SR20	SP20	HW30L	LSPS5
	4040-S25	●	42	250	20	40	40	40	N	RCMX2507M0	LR25	VHX1030	SR25	SP6N	HW40L	LSPS6
	4040-T25	●	42	300	20	40	40	40	N							
	5050-U32	●	52	350	25	50	50	50	N	RCMX3209M0	LR32	VHX1236	SR32	SP8N	HW50L	LSPS8

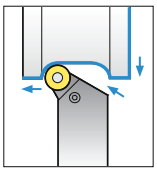
Applicable inserts **B54, B77**

● : Stock item

PRGCR/L

RCMX





• R type holder

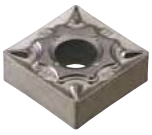
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PRGCR/L	2020-K10	●	●	-	125	25	20	20	20	R/L	RCMX1003M0	LR10	VHX0514	SR10	SP3	HW20L	LSPS3
	2525-M10	●	●	-	150	32	25	25	25	R/L							
	2020-K12	●	●	-	125	25	20	20	20	R/L	RCMX1204M0	LR12	VHX0617	SR12	SP3	HW25L	LSPS3
	2525-M12	●	●	-	150	32	25	25	25	R/L							
	3225-P12	●	●	-	170	32	32	25	32	R/L							
	2525-M16	●	●	-	150	32	25	25	25	R/L	RCMX1606M0	LR16	VHX0621	SR16	SP4	HW25L	LSPS4
	3225-P16	●	●	-	170	32	32	25	32	R/L							
	3232-P20	●	●	-	170	40	32	32	32	R/L	RCMX2006M0	LR20	VHX0823	SR20	SP5-1	HW30L	LSPS5
	4040-S25	●	●	-	250	50	40	40	40	R/L	RCMX2507M0	LR25	VHX1030	SR25	SP6N	HW40L	LSPS6

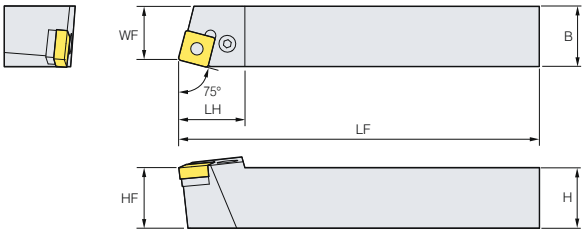
Applicable inserts **B54, B77**

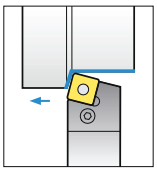
● : Stock item

PSBNR/L



SN□□





75°

• R type holder

(mm)

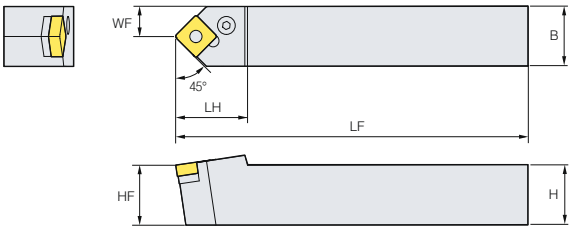
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSBNR/L	1616-H09		●	21	100	13	16	16	16	R/L	SN□□0903□□	LV3	VHX0617	SS32	SP3	HW25L	LSPS3
	2020-K09			23	125	17	20	20	20	R/L							
	2020-K12	●	●	28	125	17	20	20	20	R/L	SN□□1204□□	LV4	VHX0821	SS42	SP4	HW30L	LSPS4
	2525-M12	●	●	28	150	22	25	25	25	R/L							
	3225-P12	●	●	28	170	22	32	25	32	R/L							
	3232-P12			28	170	27	32	32	32	R/L							
	2525-M15	●	●	35	150	22	25	25	25	R/L	SN□□1506□□	LV5	VHX0825	SS53	SP5	HW30L	LSPS5
	3232-P15	●	●	35	170	27	32	32	32	R/L							
	3232-P19	●	●	41.5	170	27	32	32	32	R/L	SN□□1906□□	LV6N	VHX1027N	SS63N	SP6N	HW40L	LSPS6
	4040-S19	●	●	41.5	250	35	40	40	40	R/L							
	4040-S25	●	●	46	250	35	40	40	40	R/L	SN□□2507□□	LV8N	VHX1236N	SS84N	SP8N	HW50L	LSPS8
	4040-S25-6	●	●	46	250	35	40	40	40	R/L	SN□□2509□□						
	5050-T25	●	●	46	300	43	50	50	50	R/L	SN□□2507□□						
	5050-T25-6	●	●	46	300	43	50	50	50	R/L	SN□□2509□□						

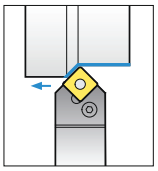
Applicable inserts **B20 ~ B28**

● : Stock item

PSDNN

SN□□





45°

(mm)

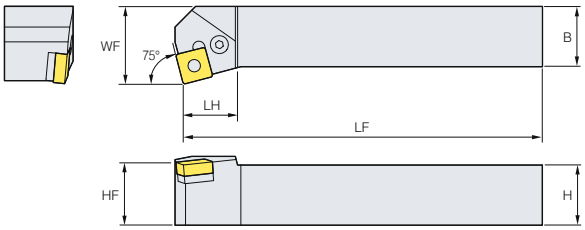
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSDNN	1616-H09	●	22	100	8	16	16	16	N	SN□□0903□□	LV3	VHX0617	SS32	SP3	HW25L	LSPS3
	2020-K12	●	30	125	10	20	20	20	N	SN□□1204□□	LV4	VHX0821	SS42	SP4	HW30L	LSPS4
	2525-M12	●	30	150	12.5	25	25	25	N							
	3225-P12	●	30	170	12.5	32	25	32	N							
	3232-P12	●	40	170	16	32	32	32	N							
	2525-M15	●	40	150	12.5	25	25	25	N	SN□□1506□□	LV5	VHX0825	SS53	SP5	HW30L	LSPS5
	3232-P15		40	170	16	32	32	32	N							
	3225-P19		41.5	170	12.5	32	25	32	N	SN□□1906□□	LV6N	VHX1027N	SS63N	SP6N	HW40L	LSPS6
	3232-P19	●	41.5	170	16	32	32	32	N							
	4040-S19	●	40	250	20	40	40	40	N							
	4040-S25	●	48	250	20	40	40	40	N	SN□□2507□□	LV8N	VHX1236N	SS84N	SP8N	HW50L	LSPS8
	5050-T25	●	54	300	25	50	50	50	N							
	4040-S25-6	●	48	250	20	40	40	40	N	SN□□2509□□	LV8N	VHX1236N	SS84N	SP8N	HW50L	LSPS8
	5050-T25-6	●	50	300	25	50	50	50	N							

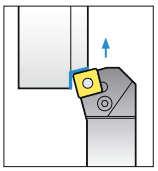
Applicable inserts **B20 ~ B28**

● : Stock item

PSKNR/L

SN□□





75°

• R type holder

(mm)

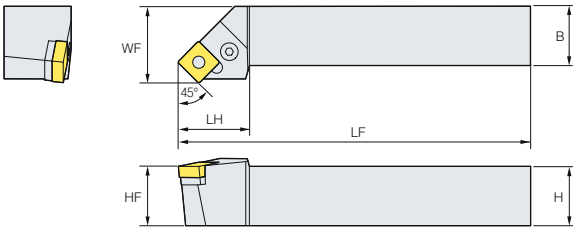
Designation		Stock		LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
		R	L														
PSKNR/L	1616-H09			17	100	20	16	16	16	R/L	SN□□0903□□	LV3	VHX0617	SS32	SP3	HW25L	LSPS3
	2020-K09	●		20	125	25	20	20	20	R/L							
	2020-K12	●	●	23	125	25	20	20	20	R/L	SN□□1204□□	LV4	VHX0821	SS42	SP4	HW30L	LSPS4
	2525-M12	●	●	26	150	32	25	25	25	R/L							
	3232-P12			26	170	40	32	32	32	R/L							
	2525-M15	●		28	150	32	25	25	25	R/L	SN□□1506□□	LV5	VHX0825	SS53	SP5	HW30L	LSPS5
	3232-P15	●	●	32	170	40	32	32	32	R/L							
	3232-P19	●	●	41.5	170	40	32	32	32	R/L	SN□□1906□□	LV6N	VHX1027N	SS63N	SP6N	HW40L	LSPS6
	4040-S19	●	●	41.5	250	50	40	40	40	R/L							
	4040-S25	●		44	250	50	40	40	40	R/L	SN□□2507□□	LV8N	VHX1236N	SS84N	SP8N	HW50L	LSPS8
	4040-S25-6	●	●	46	250	50	40	40	40	R/L	SN□□2509□□						
	5050-T25-6	●	●	37.5	300	60	50	50	50	R/L	SN□□2509□□						

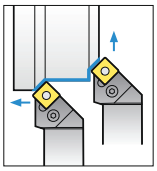
Applicable inserts **B20 ~ B28**

● : Stock item

PSSNR/L

SN□□





45°

• R type holder

(mm)

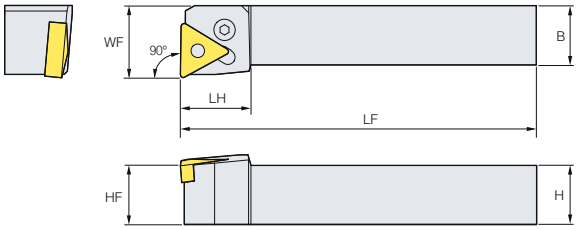
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSSNR/L	1616-H09	●		25	100	20	16	16	16	R/L	SN□□0903□□	LV3	VHX0617	SS32	SP3	HW25L	LSPS3
	2020-K12	●	●	30	125	25	20	20	20	R/L	SN□□1204□□	LV4	VHX0821	SS42	SP4	HW30L	LSPS4
	2525-M12	●	●	36	150	32	25	25	25	R/L							
	3225-P12	●		35	170	32	32	25	32	R/L							
	3232-P12			40	170	40	32	32	32	R/L							
	2525-M15	●		32	150	32	25	25	25	R/L	SN□□1506□□	LV5	VHX0825	SS53	SP5	HW30L	LSPS5
	3232-P15	●	●	40	170	40	32	32	32	R/L							
	3232-P19	●	●	41.5	170	40	32	32	32	R/L	SN□□1906□□	LV6N	VHX1027N	SS63N	SP6N	HW40L	LSPS6
	4040-R19	●		50	200	50	40	40	40	R/L							
	4040-S19	●	●	50	250	50	40	40	40	R/L							
	4040-S25	●		48	250	50	40	40	40	R/L	SN□□2507□□	LV8N	VHX1236N	SS84N	SP8N	HW50L	LSPS8
	4040-S25-6	●	●	48	250	50	40	40	40	R/L	SN□□2509□□						

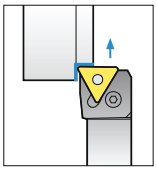
Applicable inserts **B20 ~ B28**

● : Stock item

PTFNR/L

TN□□





90°

• R type holder

(mm)

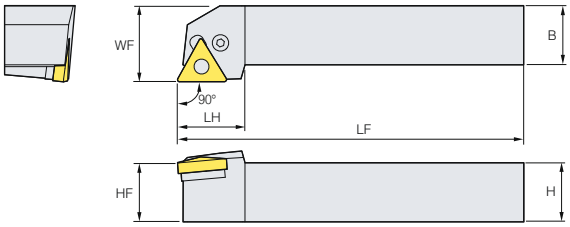
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PTFNR/L	1616-H16	●	●	20	100	20	16	16	16	R/L	TN□□1604□□	LV3	VHX0617	ST317	SP3	HW25L	LSPS3
	2020-K16	●	●	20	125	25	20	20	20	R/L							
	2525-M16	●	●	20	150	32	25	25	25	R/L							
	2525-M22	●	●	25	150	32	25	25	25	R/L	TN□□2204□□	LV4	VHX0821	ST42	SP4	HW30L	LSPS4
	3232-P22	●		25	170	40	32	32	32	R/L							
	3232-P27			34	170	40	32	32	32	R/L	TN□□2706□□	LV5	VHX0825	ST53	SP5	HW30L	LSPS5
	4040-S27			34	250	50	40	40	40	R/L							

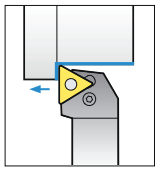
Applicable inserts **B29 ~ B36**

● : Stock item

PTGNR/L

TN□□





90°

• R type holder

(mm)

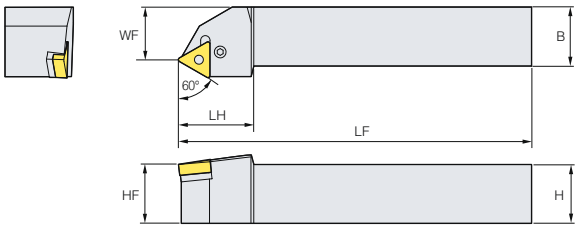
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PTGNR/L	1212-F11	●		18	80	16	12	12	12	R/L	TN□□1103□□	LV2	VHX0509B	-	-	HW20L	-
	1616-H11	●		18	100	20	16	16	16	R/L							
	2020-K11			19	125	25	20	20	20	R/L							
	2525-M11			20	150	32	25	25	25	R/L							
	1616-H16	●	●	20	100	20	16	16	16	R/L	TN□□1604□□	LV3	VHX0617	ST317	SP3	HW25L	LSPS3
	2020-K16	●	●	20	125	25	20	20	20	R/L							
	2525-M16	●	●	20	150	32	25	25	25	R/L							
	3232-P16	●		20	170	40	32	32	32	R/L							
	2525-M22	●	●	28	150	32	25	25	25	R/L	TN□□2204□□	LV4	VHX0821	ST42	SP4	HW30L	LSPS4
	3232-P22	●	●	28	170	40	32	32	32	R/L							
	3232-P27	●		33	170	40	32	32	32	R/L	TN□□2706□□	LV5	VHX0825	ST53	SP5	HW30L	LSPS5
	4040-S27			33	250	50	40	40	40	R/L							

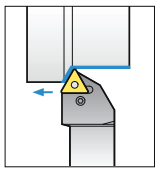
Applicable inserts **B29 ~ B36**

● : Stock item

PTTNR/L

TN□□





60°

• R type holder

(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PTTNR/L	1616-H16			25	100	13	16	16	16	R/L	TN□□1604□□	LV3	VHX0617	ST317	SP3	HW25L	LSPS3
	2020-K16	●		25	125	17	20	20	20	R/L							
	2525-M16	●		32	150	22	25	25	25	R/L							
	2525-M22	●		32	150	22	25	25	25	R/L	TN□□2204□□	LV4	VHX0821	ST42	SP4	HW30L	LSPS4

Applicable inserts **B29 ~ B36**

● : Stock item

PWLNR/L

WN□□

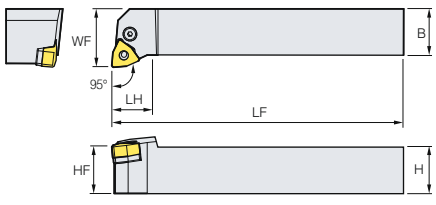


Fig. 1

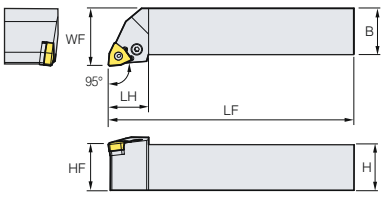
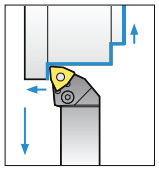


Fig. 2



95°

• R type holder

(mm)

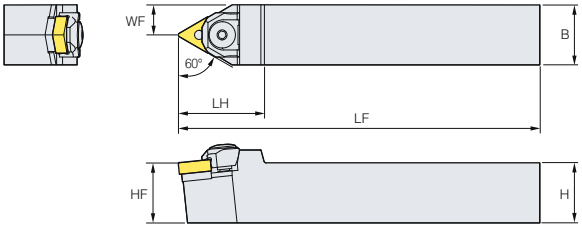
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch	Fig.
PWLNR/L	1616-H06	●	●	20	100	20	16	16	16	R/L	WN□□0604□□	LV3	VHX0617	SW317	SP3	HW25L	LSPS3	1
	2020-K06	●	●	20	125	25	20	20	20	R/L								
	2525-M06	●	●	20	150	32	25	25	25	R/L								
	2020-K08	●	●	26	125	25	20	20	20	R/L	WN□□0804□□	LV4	VHX0821	SW42	SP4	HW30L	LSPS4	2
	2525-M08	●	●	30	150	32	25	25	25	R/L								

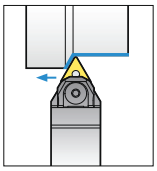
Applicable inserts **B39 ~ B43**

● : Stock item

WTENN

TN□□





60°

(mm)

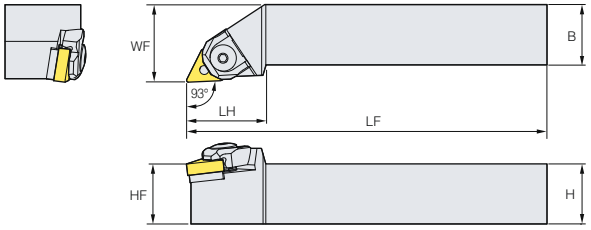
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Wedge Clamp	Screw	Stopper Ring	Shim	Shim Pin	Nut	Wrench
WTENN	2020-K16	●	36	125	10	20	20	20	N	TN□□1604□□	CMH6R6	MHX0626	ER04	ST32M	SP3M-1 / SP3M	N0407	HW30L
	2525-M16	●	36	150	12.5	25	25	25	N								
	2525-M22	●	42	150	12.5	25	25	25	N	TN□□2204□□	CMH6R1	MHX0626	ER04	ST43M	SP4M	N0508	HW30L
	3232-P22	●	42	170	16	32	32	32	N								

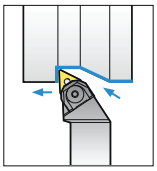
Applicable inserts **B29 ~ B36**

● : Stock item

WTJNR/L

TN□□





93°

• R type holder

(mm)

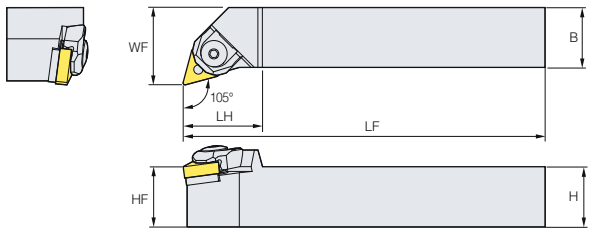
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Wedge Clamp	Screw	Stopper Ring	Shim	Shim Pin	Nut	Wrench
WTJNR/L	2020-K16	●	●	33	125	25	20	20	20	R/L	TN□□1604□□	CMH6R6	MHX0626	ER04	ST32M	SP3M-1 / SP3M	N0407	HW30L
	2525-M16	●	●	33	150	32	25	25	25	R/L								
	3232-P16	●	●	33	170	40	32	32	32	R/L								
	2525-M22	●	●	40	150	32	25	25	25	R/L	TN□□2204□□	CMH6R1	MHX0626	ER04	ST43M	SP4M	N0508	HW30L
	3232-P22	●	●	40	170	40	32	32	32	R/L								

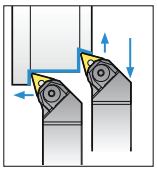
Applicable inserts **B29 ~ B36**

● : Stock item

WTXNR/L

TN□□





105°

• R type holder

(mm)

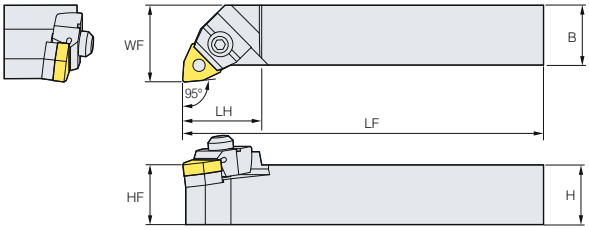
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Wedge Clamp	Screw	Stopper Ring	Shim	Shim Pin	Nut	Wrench
WTXNR/L	2020-K16	●	●	30	125	25	20	20	20	R/L	TN□□1604□□	CMH6R6	MHX0626	ER04	ST32M	SP3M-1 / SP3M	N0407	HW30L
	2525-M16	●	●	33	150	32	25	25	25	R/L								
	3232-P16			33	170	40	32	32	32	R/L								

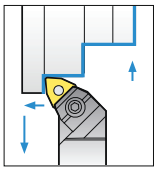
Applicable inserts **B29 ~ B36**

● : Stock item

WWLNR/L

WN□□





95°

• R type holder

(mm)

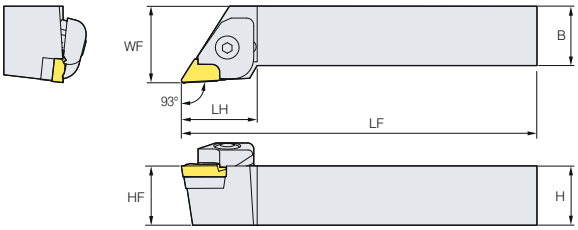
Designation	Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Wedge Clamp	Screw	Stopper Ring	Shim	Shim Pin	Nut	Wrench
WWLNR/L 2020-K08	●	●	32	125	25	20	20	20	R/L	WN□□0804□□	CMH6R/L3	MHX0630	CR05	SW43M	SP2M	N0508	HW30L
2525-M08	●	●	33	150	32	25	25	25	R/L		CMH6R2				SP4M		HW40L
3232-P08	●	●	33	170	40	32	32	32	R/L		CMH6R2						

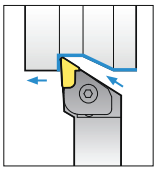
Applicable inserts **B39 ~ B43**

● : Stock item

CKJNR/L

KN□□





93°

• R type holder

(mm)

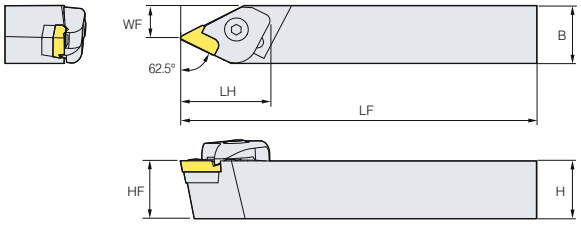
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Spring	Shim	Pin + Spring	Shim Screw	Wrench
CKJNR	2020-K16	●	32	125	25	20	20	20	R	KN□□1604□□R	CTH6R1	CHX0625	SR3	SK33C	PN0515 SR4	SHX0310	HW20L HW40L
	2525-M16	●	32	150	32	25	25	25	R								
	3225-M16		32	150	32	32	32	32	R								
	3225-P16	●	32	170	32	32	32	32	R								
	3232-P16	●	32	170	40	32	32	32	R								
	4040-R16	●	32	200	50	40	40	40	R								
CKJNL	2020-K16	●	32	125	25	20	20	20	L	KN□□1604□□L	CTH6L1	CHX0625	SR3	SK33CL	PN0515 SR4	SHX0310	HW20L HW40L
	2525-M16	●	32	150	32	25	25	25	L								
	3232-P16	●	32	170	40	32	32	32	L								
	4040-R16		32	200	50	40	40	40	L								

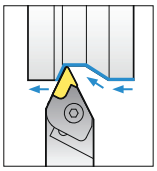
Applicable inserts **B19**

● : Stock item

CKNNR/L

KN□□





62.5°

• R type holder

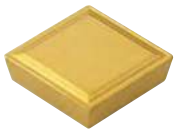
(mm)

Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Spring	Shim	Pin + Spring	Shim Screw	Wrench
CKNNR	2525-M16	●	25	150	14.3	25	25	25	R	KN□□1604□□R	CTH6R1	CHX0625	SR3	SK33C	PN0515 SR4	SHX0310	HW20L HW40L
	3232-P16		32	170	16.8	32	32	32	R								
CKNNL	2525-M16		25	150	14.3	25	25	25	L	KN□□1604□□L	CTH6L1	CHX0625	SR3	SK33CL	PN0515 SR4	SHX0310	HW20L HW40L
	3232-P16	●	32	170	16.8	32	32	32	L								

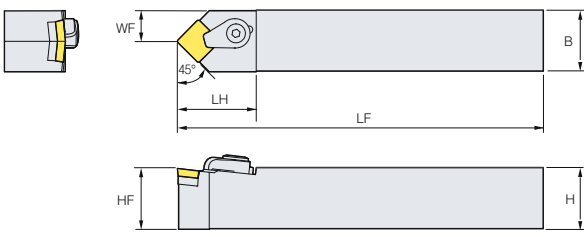
Applicable inserts **B19**

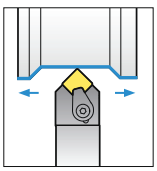
● : Stock item

CSDPN



SP□R





45°

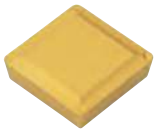
(mm)

Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	C–Ring	Wrench
CSDPN	1616-H09		30	100	8	16	16	16	N	SP□R0903□□	CH53R1	CH0515C	SS32C	SP3C	CR03C	HW25L
	2525-M12	●	35	150	12.5	25	25	25	N	SP□R1203□□	CH6R5	CHX0622C	SS42C	SP3C	CR04C	HW30L

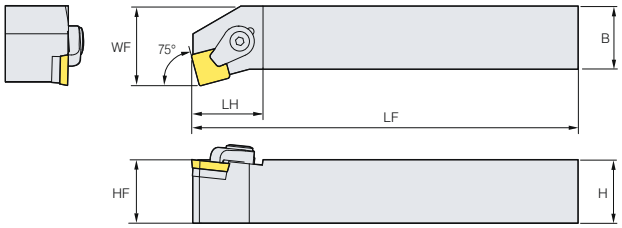
Applicable inserts **B56 ~ B57**

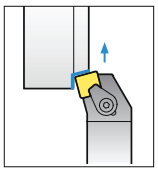
● : Stock item

CSKPR/L



SP□R





75°

• R type holder

(mm)

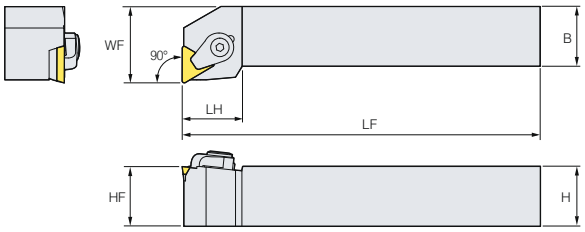
Designation	Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	C–Ring	Wrench
CSKPR/L 2525-M12			32	150	32	25	25	25	R/L	SP□R1203□□	CH6R5	CHX0622C	SS42C	SP3C	CR04C	HW30L

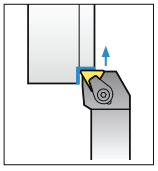
Applicable inserts **B56 ~ B57**

● : Stock item

CTFPR/L

TP□R





90°

• R type holder

(mm)

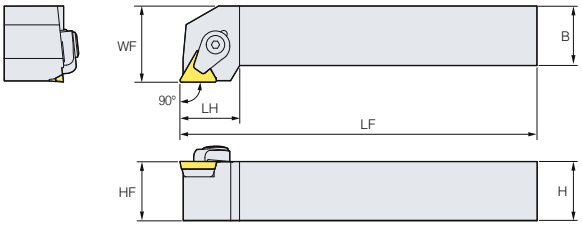
Designation	Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	C–Ring	Wrench
CTFPR/L 2020-K16	●	●	32	125	25	20	20	20	R/L	TP□R1603□□	CH6R5	CHX0622C	ST32C	SP3C	CR04C	HW30L
2525-M16	●		32	150	32	25	25	25	R/L							

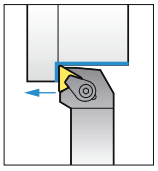
Applicable inserts **B61 ~ B64**

● : Stock item

CTGPR/L

TP□R





90°

• R type holder

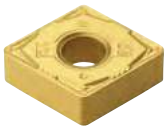
(mm)

Designation	Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	C–Ring	Wrench
CTGPR/L 1212-F11	●		20	80	16	12	12	12	R/L	TP□R1103□□	CH53R1	CHX0515C	-	-	CR03C	HW25L
1616-H11	●		20	100	20	16	16	16	R/L							
2020-K11			20	125	25	20	20	20	R/L							
2020-K16	●	●	20	125	25	20	20	20	R/L	TP□R1603□□	CH6R5	CHX0622C	ST32C	SP3C	CR04C	HW30L
2525-M16	●	●	25	150	32	25	25	25	R/L							
2525-M22	●		25	150	32	25	25	25	R/L	TP□R2204□□	CH83R1	CHX0823C	ST43C	SP4C	CR05C	HW40L
3232-P22			25	170	40	32	32	32	R/L							

Applicable inserts **B61 ~ B64**

● : Stock item

MCKNR/L



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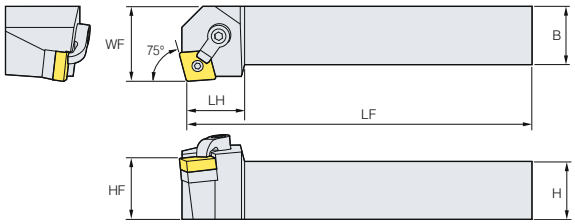
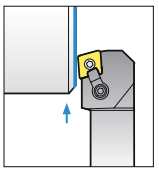




75°

• R type holder

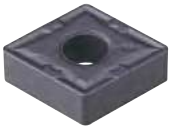
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MCKNR/L	2020-K12			27	125	25	20	20	20	R/L	CN□□1204□□	CDH6N	DHA1/4-25	SC43D	SP4D	HW31.8L HW23.8L
	2525-M12	▯		25	150	32	25	25	25	R/L						
	3232-P12			25	170	40	32	32	32	R/L						

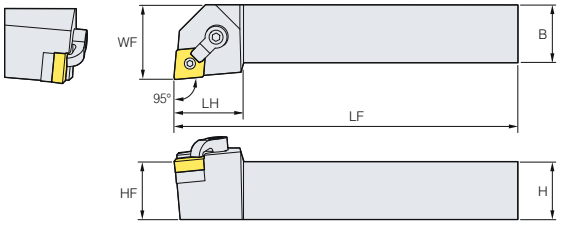
Applicable inserts **B5 ~ B12**

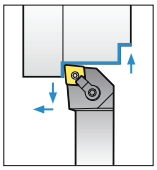
● : Stock item

MCLNR/L



CN□□





95°

• R type holder

(mm)

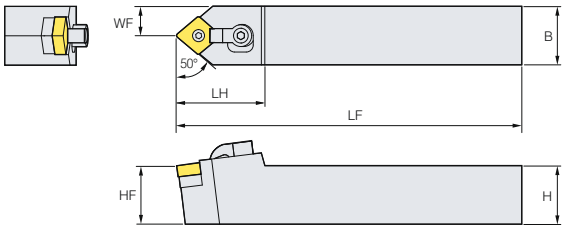
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MCLNR/L	1616-H09			22	100	20	16	16	16	R/L	CN□□0903□□	CDH7N	DHA10-32-19	SC32D	SP3DS	HW23.8L HW19.8L
	2020-K09			25	125	25	20	20	20	R/L						
	2525-M09			25	150	32	25	25	25	R/L						
	2020-K12			30	125	25	20	20	20	R/L	CN□□1204□□	CDH6N	DHA1/4-25	SC43D	SP4D	HW31.8L HW23.8L
	2525-M12	▯	▯	30	150	32	25	25	25	R/L						
	3225-P12			30	170	32	32	25	32	R/L						
	3232-P12	▯		30	170	40	32	32	32	R/L						
	2525-M16	▯		35	150	32	25	25	25	R/L	CN□□1606□□	CDH8N	DHA5/16-32	SC53D	SP5D	HW39.7L HW31.8L
	3232-P16	▯		35	170	40	32	32	32	R/L						
	4040-S16			35	250	50	40	40	40	R/L						
	2525-M19			42	150	32	25	25	25	R/L	CN□□1906□□	CDH8N	DHA5/16-32	SC63D	SP6D	HW39.7L HW35.7L
	3232-P19			42	170	40	32	32	32	R/L						
	4040-S19			42	250	50	40	40	40	R/L						
	4040-S25			48.5	250	50	40	40	40	R/L	CN□□2507□□	CDH8N3	DHA3/8-35	SC84D	SP8D	HW39.7L HW47.6L

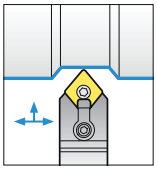
Applicable inserts **B5 ~ B12**

● : Stock item

MCMNN

CN□□





50°

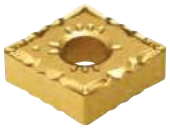
(mm)

Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MCMNN	2020-K12		35	125	10	20	20	20	N	CN□□1204□□	CDH6N	DHA1/4-25	SC43D	SP4D	HW31.8L HW23.8L
	2525-M12		35	150	12.5	25	25	25	N						
	3232-P12		35	170	16	32	32	32	N						
	2525-M16		40	150	12.5	25	25	25	N	CN□□1606□□	CDH8N	DHA5/16-32	SC53D	SP5D	HW39.7L HW31.8L
	3232-P16		40	170	16	32	32	32	N						
	3232-P19		45	170	16	32	32	32	N	CN□□1906□□	CDH8N	DHA5/16-32	SD63D	SP6D	HW39.7L HW35.7L
	4040-S19		45	250	16	40	40	40	N						

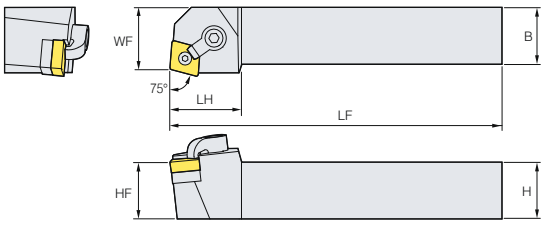
Applicable inserts **B5 ~ B12**

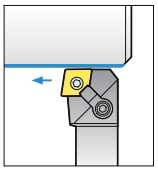
● : Stock item

MCRNR/L



CN□□





75°

• R type holder

(mm)

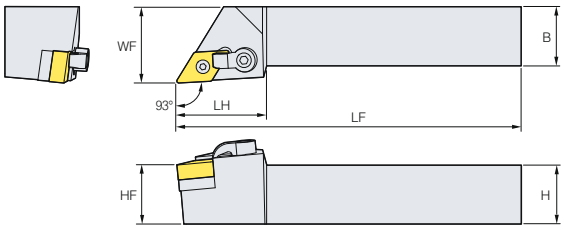
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MCRNR/L	2020-K12			30	125	22	20	20	20	R/L	CN□□1204□□	CDH8N1	DHA5/16-32	SC43D	SP4D	HW39.7L HW23.8L
	2525-M12			30	150	27	25	25	25	R/L						
	2525-M16			35	150	27	25	25	25	R/L	CN□□1606□□	CDH8N1	DHA5/16-32	SC53D	SP5D	HW39.7L HW31.8L
	3232-P16			35	170	35	32	32	32	R/L						
	3232-P19			38	170	35	32	32	32	R/L	CN□□1906□□	CDH8N1	DHA5/16-32	SC63D	SP6D	HW39.7L HW35.7L
	4040-S19			38	250	43	40	40	40	R/L						

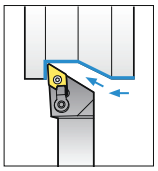
Applicable inserts **B5 ~ B12**

● : Stock item

MDJNR/L

DN□□





93°

• R type holder

(mm)

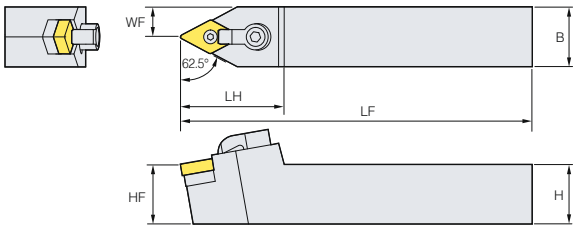
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MDJNR/L	2020-K11			38	125	25	20	20	20	R/L	DN□□1104□□	CDH6N	DHA1/4-19	SD32D	SP3D	HW31.8L HW19.8L
	2525-M11			38	150	32	25	25	25	R/L						
	2020-K15-3	▯		38	125	25	20	20	20	R/L	DN□□1504□□	CDH6N	DHA1/4-25	SD43D	SP4D	HW31.8L HW23.8L
	2525-M15-3	▯		38	150	32	25	25	25	R/L						
	3232-P15-3			38	170	40	32	32	32	R/L						
	2020-K15			37	125	25	20	20	20	R/L	DN□□1506□□	CDH6N	DHA1/4-25	SD43D	SP4DL	HW31.8L HW23.8L
	2525-M15			38	150	32	25	25	25	R/L						
	3232-P15			39	170	40	32	32	32	R/L						

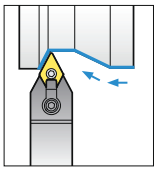
Applicable inserts **B13 ~ B18**

● : Stock item

MDNNN

DN□□





62.5°

(mm)

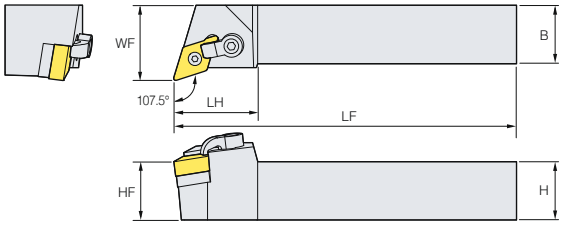
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MDNNN	2525-M15-3	▯	43.5	150	12.5	25	25	25	N	DN□□1504□□	CDH8N	DHA5/16-32	SD43D	SP4D	HW39.7L HW23.8L
	2525-M15		43.5	150	12.5	25	25	25	N	DN□□1506□□	CDH8N	DHA5/16-32	SD43D	SP4DL	HW39.7L HW23.8L

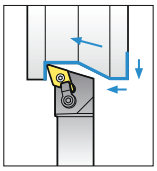
Applicable inserts **B13 ~ B18**

● : Stock item

MDQNR/L

DN□□





107.5°

• R type holder

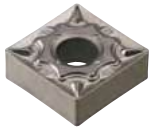
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MDQNR/L	2525-M15-3		●	36	150	32	25	25	25	R/L	DN□□1504□□	CDH6N	DHA1/4-25	SD43D	SP4D	HW31.8L HW23.8L
	3232-P15-3			36	170	40	32	32	32	R/L						
	2525-M15	●	●	36	150	32	25	25	25	R/L	DN□□1506□□	CDH6N	DHA1/4-25	SD43D	SP4DL	HW31.8L HW23.8L
	3232-M15			36	150	40	32	32	32	R/L						

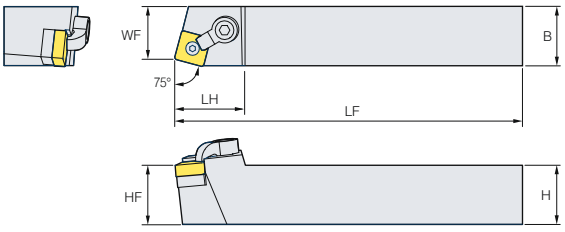
Applicable inserts **B13 ~ B18**

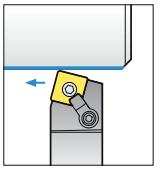
● : Stock item

MSBNR/L



SN□□





75°

• R type holder

(mm)

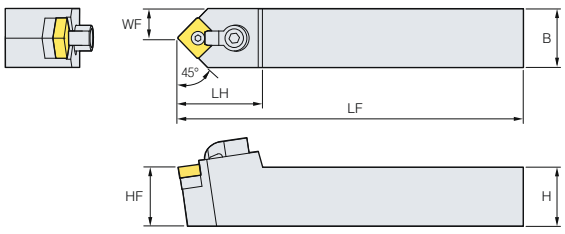
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MSBNR/L	2020-K12			30	125	17	20	20	20	R/L	SN□□1204□□	CDH8N1	DHA5/16-32	SS43D	SP4D	HW39.7L HW23.8L
	2525-M12			30	150	22	25	25	25	R/L						
	2525-M15			40	150	22	25	25	25	R/L	SN□□1506□□	CDH8N	DHA5/16-32	SS53D	SP5D	HW39.7L HW31.8L
	3232-P15			40	170	27	32	32	32	R/L						
	3232-P19			40	170	27	32	32	32	R/L	SN□□1906□□	CDH8N	DHA5/16-32	SS63D	SP6D	HW39.7L HW35.7L
	4040-S19			40	250	35	40	40	40	R/L						

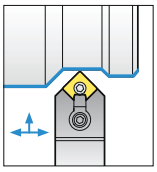
Applicable inserts **B20 ~ B28**

● : Stock item

MSDNN

SN□□





45°

(mm)

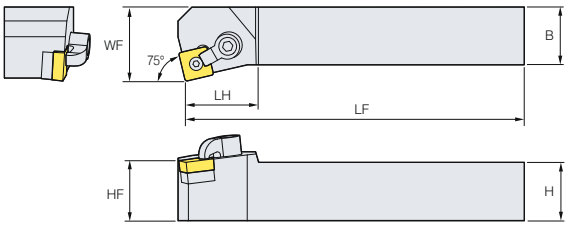
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MSDNN	1616-H09		28	100	8	16	16	16	N	SN□□0903□□	CDH7N	DHA10-32-19	SS32D	SP3DS	HW19.8L HW23.8L
	2020-K09		28	125	10	20	20	20	N						
	2020-K12		36	125	10	20	20	20	N	SN□□1204□□	CDH8N1	DHA5/16-32	SS43D	SP4D	HW39.7L HW23.8L
	2525-M12		36	150	12.5	25	25	25	N						
	3225-P12		32	170	12.5	32	25	32	N						
	2525-M15		40.9	150	12.5	25	25	25	N	SN□□1506□□	CDH8N	DHA5/16-32	SS53D	SP5D	HW39.7L HW31.8L
	3225-P15		35	170	12.5	32	25	32	N						
	3232-P15		40.9	170	16	32	32	32	N						
	4040-S15		47	250	20	40	40	40	N						
	3232-P19		46	170	16	32	32	32	N	SN□□1906□□	CDH8N	DHA5/16-32	SS63D	SP6D	HW39.7L HW35.7L
	4040-S19		47	250	20	40	40	40	N						

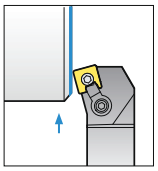
Applicable inserts **B20 ~ B28**

● : Stock item

MSKNR/L

SN□□





75°

• R type holder

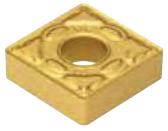
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MSKNR/L	1616-H09			22	100	20	16	16	16	R/L	SN□□0903□□	CDH7N	DHA10-32-19	SS32D	SP3DS	HW19.8L HW23.8L
	2020-K09			22	125	25	20	20	20	R/L						
	2020-K12			32	125	25	20	20	20	R/L	SN□□1204□□	CDH8N1	DHA5/16-32	SS43D	SP4D	HW39.7L HW23.8L
	2525-M12			22	150	32	25	25	25	R/L						
	3225-P12			32	170	32	32	25	32	R/L						
	2525-M15			32	150	32	25	25	25	R/L	SN□□1506□□	CDH8N	DHA5/16-32	SS53D	SP5D	HW39.7L HW31.8L
	3232-P15			34	170	40	32	32	32	R/L						
	3232-P19			28	170	40	32	32	32	R/L	SN□□1906□□	CDH8N	DHA5/16-32	SS63D	SP6D	HW39.7L HW35.7L
	4040-S19			36	250	50	40	40	40	R/L						
	4040-S25			43	250	50	40	40	40	R/L	SN□□2507□□	CDH8N3	DHA3/8-35	SS84D	SP8D	HW47.6L HW39.7L

Applicable inserts **B20 ~ B28**

● : Stock item

MSRNR/L



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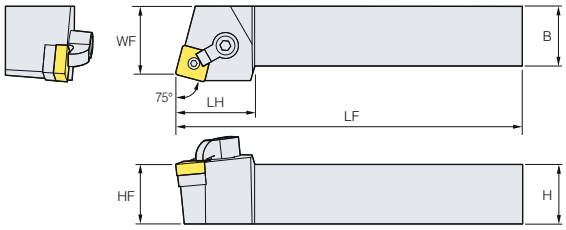
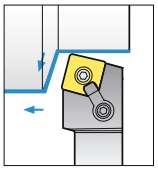




75°

• R type holder

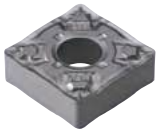
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MSRNR/L	1616-H09			25	100	17	16	16	16	R/L	SN□□0903□□	CDH7N	DHA10-32-19	SS32D	SP3DS	HW19.8L HW23.8L
	2020-K09			28	125	22	20	20	20	R/L						
	2020-K12			32	125	22	20	20	20	R/L	SN□□1204□□	CDH8N1	DHA5/16-32	SS43D	SP4D	HW39.7L HW23.8L
	2525-M12			32	150	27	25	25	25	R/L						
	2525-M15			38	150	27	25	25	25	R/L	SN□□1506□□	CDH8N	DHA5/16-32	SS53D	SP5D	HW39.7L HW31.8L
	3232-P15			35	170	35	32	32	32	R/L						
	3225-P19			40	170	27	32	25	32	R/L	SN□□1906□□	CDH8N	DHA5/16-32	SS63D	SP6D	HW39.7L HW35.7L
	3232-P19			40	170	35	32	32	32	R/L						
	4040-S19			40	250	43	40	40	40	R/L						
	4040-S25			51	250	43	40	40	40	R/L	SN□□2507□□	CDH8N3	DHA3/8-35	SS84D	SP8D	HW47.6L HW39.7L

Applicable inserts **B20 ~ B28**

● : Stock item

MSSNR/L



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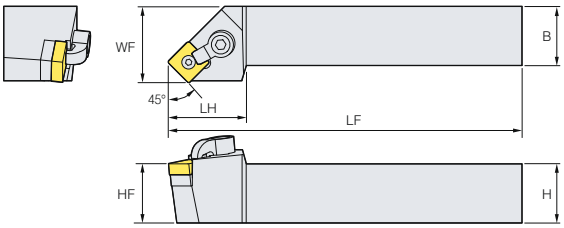
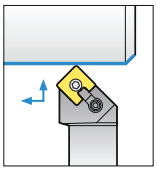




45°

• R type holder

(mm)

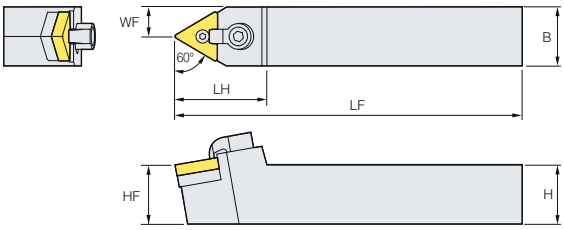
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MSSNR/L	1616-H09			28	100	20	16	16	16	R/L	SN□□0903□□	CDH7N	DHA10-32-19	SS32D	SP3DS	HW19.8L HW23.8L
	2020-K09			28	125	25	20	20	20	R/L						
	2020-K12			33	125	25	20	20	20	R/L	SN□□1204□□	CDH8N1	DHA5/16-32	SS43D	SP4D	HW39.7L HW23.8L
	2525-M12			33	150	32	25	25	25	R/L						
	2525-M15			35	150	32	25	25	25	R/L	SN□□1506□□	CDH8N1	DHA5/16-32	SS53D	SP5D	HW39.7L HW31.8L
	3232-P15			40	170	40	32	32	32	R/L						
	3232-P19			40	170	40	32	32	32	R/L	SN□□1906□□	CDH8N1	DHA5/16-32	SS63D	SP6D	HW39.7L HW35.7L
	4040-S19			43	250	50	40	40	40	R/L						

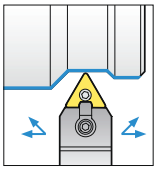
Applicable inserts **B20 ~ B28**

● : Stock item

MTENN

TN□□





60°

(mm)

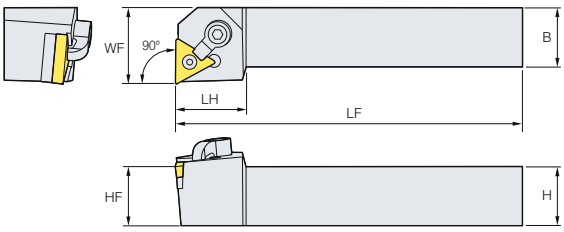
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MTENN	2020-K16		30	125	10	20	20	20	N	TN□□1604□□	CDH7N	DHA10-32-19	ST32D	SP3D	HW23.8L HW19.8L
	2525-M16	●	30	150	12.5	25	25	25	N						
	2525-M22		39	150	12.5	12.5	25	25	N	TN□□2204□□	CDH8N1	DHA5/16-32	ST43D	SP4D	HW39.7L HW23.8L
	3232-P27		45	170	16	32	32	32	N	TN□□2706□□	CDH8N1	DHA5/16-32	ST53D	SP5D	HW39.7L HW31.8L
	4040-S33		50	250	20	40	40	40	N	TN□□3307□□	CDH8N	DHA5/16-32	ST63D	SP6DL	HW39.7L HW35.7L

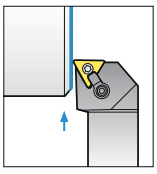
Applicable inserts **B29 ~ B36**

● : Stock item

MTFNR/L

TN□□





90°

• R type holder

(mm)

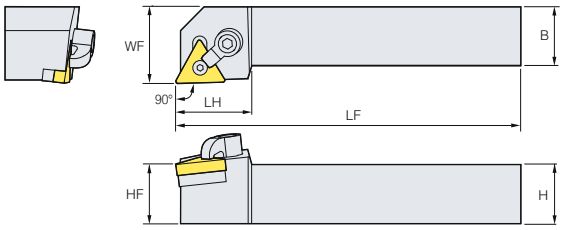
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MTFNR/L	1616-H16			23.5	100	21	16	16	16	R/L	TN□□1604□□	CDH7N	DHA10-32-19	ST32D	SP3D	HW23.8L HW19.8L
	2020-K16			23.5	125	25	20	16	20	R/L						
	2525-M16			26	150	32	25	16	25	R/L						
	2525-M22			36	150	32	25	22	25	R/L	TN□□2204□□	CDH8N1	DHA5/16-32	ST43D	SP4D	HW39.7L HW23.8L
	3232-P22			32	170	40	32	22	32	R/L						
	4040-S22			32	250	50	40	22	40	R/L						
	3232-P27			35	170	40	32	27	32	R/L	TN□□2706□□	CDH8N1	DHA5/16-32	ST53D	SP5D	HW39.7L HW31.8L
	4040-S27			35	250	50	40	27	40	R/L						
	4040-S33			40	250	50	40	33	40	R/L	TN□□3307□□	CDH8N	DHA5/16-32	ST63D	SP6DL	HW39.7L HW35.7L

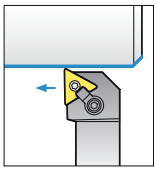
Applicable inserts **B29 ~ B36**

● : Stock item

MTGNR/L

TN□□





90°

• R type holder

(mm)

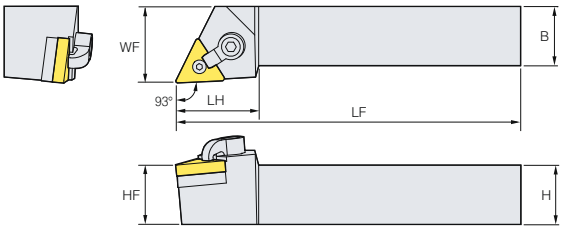
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MTGNR/L	1616-H16			27.5	100	20	16	16	16	R/L	TN□□1604□□	CDH7N	DHA10-32-19	ST32D	SP3D	HW23.8L HW19.8L
	2020-K16			32	125	25	20	20	20	R/L						
	2525-M16			27.5	150	32	25	25	25	R/L						
	2525-M22			35	150	32	25	25	25	R/L	TN□□2204□□	CDH8N1	DHA5/16-32	ST43D	SP4D	HW39.7L HW23.8L
	3232-P22			35	170	40	32	32	32	R/L						
	3232-P27			35	170	40	32	32	32	R/L	TN□□2706□□	CDH8N1	DHA5/16-32	ST53D	SP5D	HW39.7L HW31.8L
	4040-S27			40	250	50	40	40	40	R/L						
	4040-S33			45	250	50	40	40	40	R/L	TN□□3307□□	CDH8N	DHA5/16-32	ST63D	SP6DL	HW39.7L HW35.7L

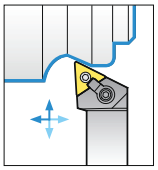
Applicable inserts **B29 ~ B36**

● : Stock item

MTJNR/L

TN□□





93°

• R type holder

(mm)

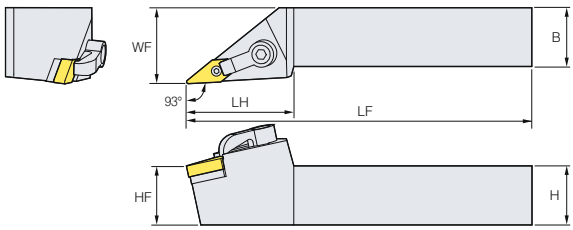
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MTJNR/L	2020-K16			28	125	25	20	20	20	R/L	TN□□1604□□	CDH7N	DHA10-32-19	ST32D	SP3D	HW23.8L HW19.8L
	2525-M16	●		28	150	32	25	25	25	R/L						
	2525-M22			35	150	32	25	25	25	R/L	TN□□2204□□	CDH8N1	DHA5/16-32	ST43D	SP4D	HW39.7L HW23.8L
	3232-P22			35	170	40	32	32	32	R/L						
	3232-P27			40	170	40	32	32	32	R/L	TN□□2706□□	CDH8N1	DHA5/16-32	ST53D	SP5D	HW39.7L HW31.8L
	4040-S27			40	250	50	40	40	40	R/L						
	4040-S33			48	250	50	40	40	40	R/L	TN□□3307□□	CDH8N	DHA5/16-32	ST63D	SP6DL	HW39.7L HW35.7L

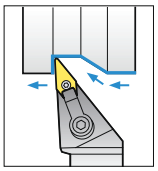
Applicable inserts **B29 ~ B36**

● : Stock item

MVJNR/L

VN□□





93°

• R type holder

(mm)

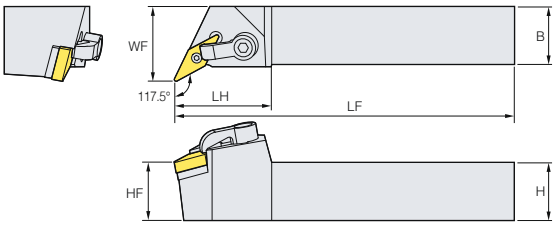
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MVJNR/L	2020-K16	●	●	44	125	25	20	20	20	R/L	VN□□1604□□	CDH8N2	DHA5/16-32	SV32D	SP3D	HW39.7L HW19.8L
	2525-M16	●	●	45.5	150	32	25	25	25	R/L						
	3232-P16			55.5	170	40	32	32	32	R/L						
	2525-M22			56	150	32	25	25	25	R/L	VN□□2204□□	CDH8N2	DHA5/16-32	SV43D	SP4D	HW39.7L HW23.8L
	3232-P22			55	170	40	32	32	32	R/L						
	4040-S22			65	250	50	40	40	40	R/L						

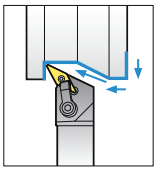
Applicable inserts **B37 ~ B38**

● : Stock item

MVQNR/L

VN□□





117.5°

• R type holder

(mm)

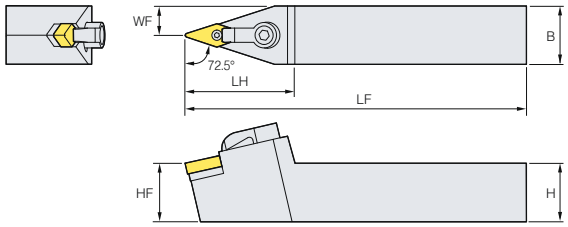
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MVQNR/L	2020-K16	●	●	42	125	25	20	20	20	R/L	VN□□1604□□	CDH8N2	DHA5/16-32	SV32D	SP3D	HW39.7L HW19.8L
	2525-M16	●	●	42	150	32	25	25	25	R/L						
	3232-P16			42	170	40	32	32	32	R/L						

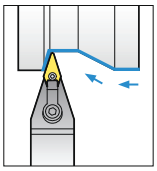
Applicable inserts **B37 ~ B38**

● : Stock item

MVVNN

VN□□





72.5°

(mm)

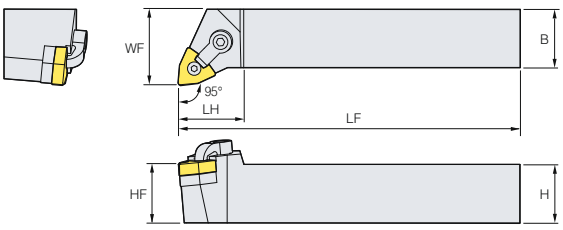
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MVVNN	2020-K16	●	47	125	10	20	20	20	N	VN□□1604□□	CDH8N2	DHA5/16-32	SV32D	SP3D	HW39.7L HW19.8L
	2525-M16	●	47	150	12.5	25	25	25	N						

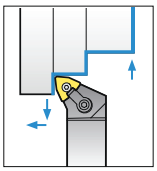
Applicable inserts **B37 ~ B38**

● : Stock item

MWLNR/L

WN□□





95°

• R type holder

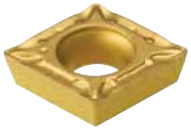
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench
MWLNR/L	2020-K06			24	125	25	20	20	20	R/L	WN□□0604□□	CDH7N	DHA10-32-19	SW32D	SP3D	HW19.8L HW23.8L
	2525-M06			24	150	32	25	25	25	R/L						
	3232-P06			27	170	40	32	32	32	R/L						
	2020-K08	●		28	125	25	20	20	20	R/L	WN□□0804□□	CDH6N	DHA1/4-21	SW43D	SP4D	HW31.8L HW23.8L
	2525-M08	●	●	28	150	32	25	25	25	R/L						
	3232-P08			30	170	40	32	32	32	R/L						

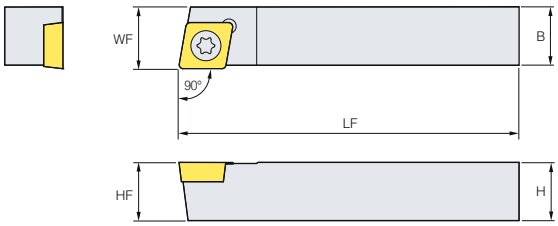
Applicable inserts **B39 ~ B43**

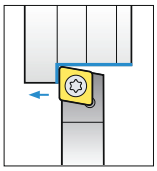
● : Stock item

SCACR/L



CC□T





90°

• R type holder

(mm)

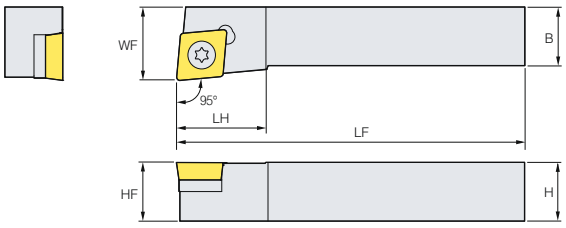
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SCACR/L	1010-E06		●	10	70	10.5	10	10	10	R/L	CC□T0602□□	FTKA02565	-	-	TW07P
	1212-F09	●		16	80	12.5	12	12	12	R/L	CC□T09T3□□	FTGA03508	-	-	TW15P

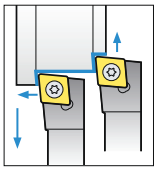
Applicable inserts **B44 ~ B48, B75**

●: Stock item

SCLCR/L

CC□T





95°

• R type holder

(mm)

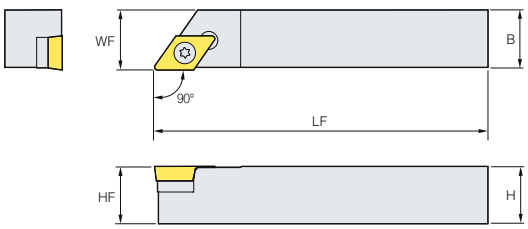
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SCLCR/L	0808-D06	●	●	10	60	10	8	8	8	R/L	CC□T0602□□	FTKA02565	-	-	TW07P
	1010-E06	●	●	10	70	12	10	10	10	R/L					
	1212-F09	●	●	16	80	16	12	12	12	R/L	CC□T09T3□□	FTGA03508	-	-	TW15P
	1616-H09	●	●	16	100	20	16	16	16	R/L					
	2020-K09	●	●	18	125	25	20	20	20	R/L					
	2525-M09	●		26	150	32	25	25	25	R/L					
	2020-K12	●	●	25	125	25	20	20	20	R/L	CC□T1204□□	FTGA0411F	SC42S	SHXN0610F	TW15P, HW40L
	2525-M12	●	●	26	150	32	25	25	25	R/L					

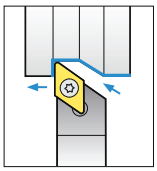
Applicable inserts **B44 ~ B48, B75**

●: Stock item

SDACR/L

DC□T





90°

• R type holder

(mm)

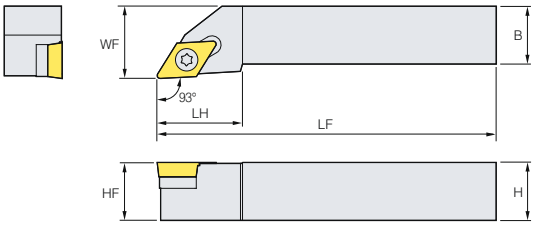
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SDACR/L	1010-E07			15	70	10.5	10	10	10	R/L	DC□T0702□□	FTKA02565	-	-	TW07P
	1212-F11	●		15	80	12.5	12	12	12	R/L	DC□T11T3□□	FTGA03508	-	-	TW15P
	1616-H11	●		24	100	16.5	16	16	16	R/L		FTGA03512	SD32S	SHXN0509F	TW15P, HW35L

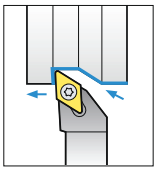
Applicable inserts **B50 ~ B53, B77**

●: Stock item

SDJCR/L

DC□T





93°

• R type holder

(mm)

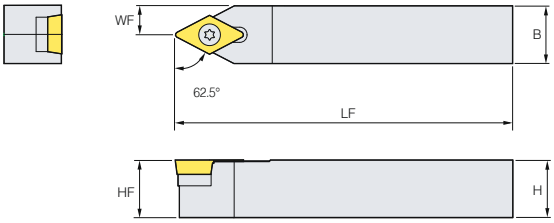
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SDJCR/L	1010-E07	●		15	70	12	10	10	10	R	DC□T0702□□	FTKA02565	-	-	TW07P
	1212-F07	●	●	15	80	16	12	12	12	R					
	1616-H07	●		18	100	20	16	16	16	R					
	2020-K07	●	●	20	125	25	20	20	20	R					
	1212-F11	●	●	20	80	16	12	12	12	R	DC□T11T3□□	FTGA03512	SD32S	SHXN0509F	TW15P, HW35L
	1616-H11	●	●	24	100	20	16	16	16	R					
	2020-K11	●	●	24	125	25	20	20	20	R					
	2525-M11	●	●	29	150	32	25	25	25	R					

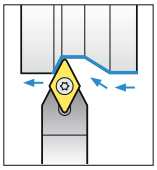
Applicable inserts **B50 ~ B53, B76**

● : Stock item

SDNCN

DC□T





62.5°

(mm)

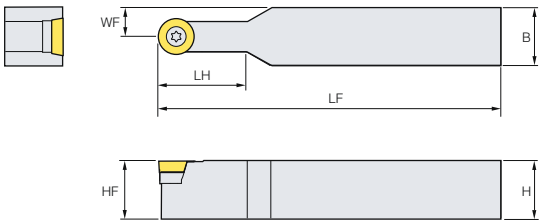
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SDNCN	1010-E07	●	20	70	5	10	10	10	N	DC□T0702□□	FTKA02565	-	-	TW07P
	1212-F07	●	20	80	6	12	12	12	N					
	1212-H11	●	30	100	6	12	12	12	N	DC□T11T3□□	FTGA03508	-	-	TW15P
	1616-H11	●	30	100	8	16	16	16	N	DC□T11T3□□	FTGA03512	SD32S	SHXN0509F	TW15P, HW35L
	2020-K11	●	30	125	10	20	20	20	N					
	2025-M11		30	150	12.5	25	25	25	N	DC□T11T3□□	FTGA03512	SD32S	SHXN0509F	TW25P, HW35L

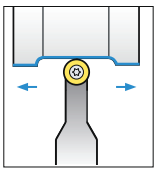
Applicable inserts **B50 ~ B53, B76**

● : Stock item

SRDCN

RC□T





(mm)

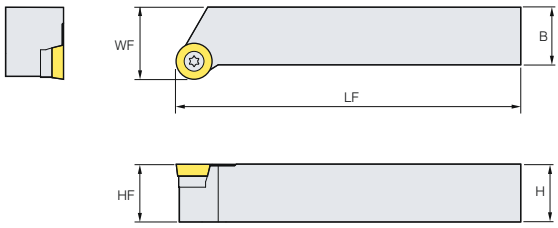
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench'
SRDCN	1010-E06		10	70	5	10	10	10	N	RC□T0602M0	FTKA02565	-	-	TW07P
	1212-F06	●	12	80	6	12	12	12	N					
	1616-H06		12	100	8	16	16	16	N					
	2525-M06	●	24	150	12.5	25	25	25	N					
	1616-H08	●	16	100	8	16	16	16	N	RC□T0803M0	FTNA0307	-	-	TW09P
	2020-K08		20	125	10	20	20	20	N					
	2525-M08	●	20	150	12.5	25	25	25	N					
	1616-H10		25	100	8	16	16	16	N	RC□T1003M0	FTKA03511A	SR10S	SHXN0509F	TW15P HW35L
	2020-K10	●	25	125	10	20	20	20	N					
	2525-M10	●	25	150	12.5	25	25	25	N					
	2020-K12		28	125	10	20	20	20	N	RC□T1204M0	FTGA03512	SR12S	SHXN0509F	TW15P HW35L
	2525-M12	●	28	150	12.5	25	25	25	N					

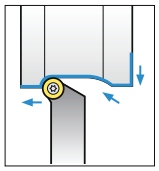
Applicable inserts **B54, B77**

● : Stock item

SRGCR/L

RC□T





• R type holder

(mm)

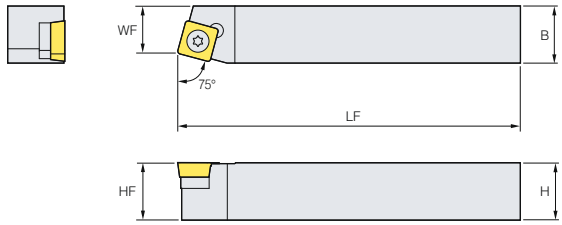
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench'
SRGCR/L	1010-E06			-	70	12	10	10	10	R/L	RC□T0602M0	FTKA02565	-	-	TW07P
	1212-F06	●		-	80	16	12	12	12	R/L					
	1616-H06			-	100	20	16	16	16	R/L					
	1616-H08			-	100	20	16	16	16	R/L	RC□T0803M0	FTNA0307	-	-	TW09P
	2020-K08			-	125	25	20	20	20	R/L					
	2525-M08			-	150	32	25	25	25	R/L					
	1616-H10			-	100	20	16	16	16	R/L	RC□T1003M0	FTKA03511A	SR10S	SHXN0509F	TW15P HW35L
	2020-K10	●	●	-	125	25	20	20	20	R/L					
	2525-M10			-	150	32	25	25	25	R/L					
	2020-K12	●	●	-	125	25	20	20	20	R/L	RC□T1204M0	FTGA03512	SR12S	SHXN0509F	TW15P HW35L
	2525-M12	●	●	-	150	32	25	25	25	R/L					

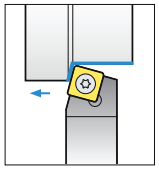
Applicable inserts **B54, B77**

● : Stock item

SSBCR/L

SC□T





75°

• R type holder

(mm)

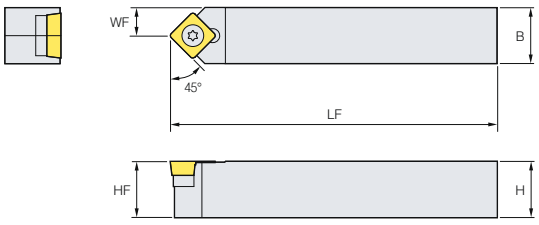
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench'
SSBCR/L	1212-F09			16	80	11	12	12	12	R/L	SC□T09T3□□	FTGA03508	-	-	TW15P
	1616-H09	●		16	100	13	16	16	16	R/L		FTGA03512	SS32S	SHXN0509F	TW15P, HW35L
	2020-K12			25	125	17	20	20	20	R/L	SC□T1204□□	FTGA0411F	SS42S	SHXN0610F	TW15P, HW40L

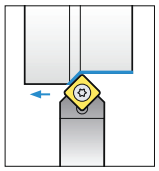
Applicable inserts **B55, B78**

● : Stock item

SSDCN

SC□T





45°

(mm)

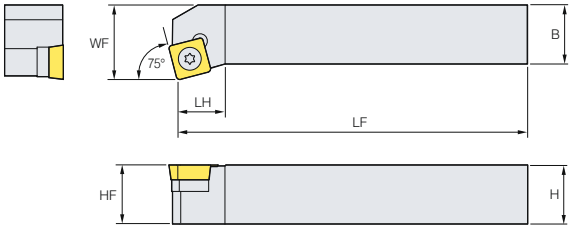
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench'
SSDCN	1212-F09	●	15.5	80	6	12	12	12	N	SC□T09T3□□	FTGA03508	-	-	TW15P
	1616-H09	●	15.5	100	8	16	16	16	N		FTGA03512	SS32S	SHXN0509F	TW15P, HW35L

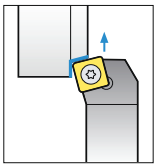
Applicable inserts **B55, B78**

● : Stock item

SSKCR/L

SC□T





75°
• R type holder

(mm)

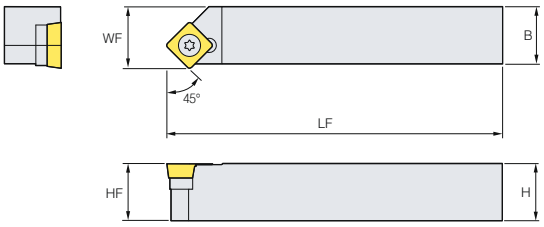
Designation	Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SSKCR/L 1616-H09			13	100	20	16	16	16	R/L	SC□T09T3□□	FTGA03512	SS32S	SHXN0509F	TW15P, HW35L

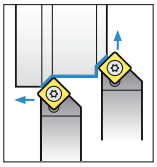
Applicable inserts **B55, B78**

● : Stock item

SSSCR/L

SC□T





45°
• R type holder

(mm)

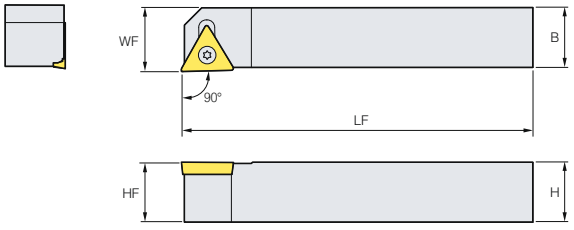
Designation	Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SSSCR/L 1616-H09	●		15.5	100	17	16	16	16	R/L	SC□T09T3□□	FTGA03512	SS32S	SHXN0509F	TW15P, HW35L
2020-K12	●	●	24	125	21	20	20	20	R/L	SC□T1204□□	FTGA0411F	SS42S	SHXN0610F	TW15P, HW40L
2525-M12	●	●	24	150	26	25	25	25	R/L	SC□T1204□□	FTGA0411F	SS42S	SHXN0610F	TW15P, HW40L

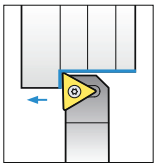
Applicable inserts **B55, B78**

● : Stock item

STACR/L

TC□T





90°
• R type holder

(mm)

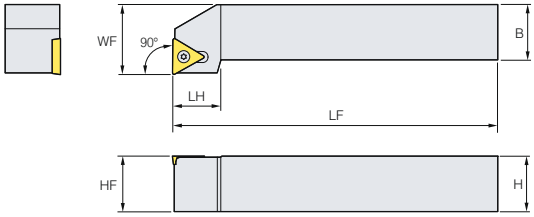
Designation	Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
STACR/L 1010-E09			10	70	12	10	10	10	R/L	TC□T0902□□	FTKA02206	-	-	TW06P
1212-F11	●		14	80	12.5	12	12	12	R/L	TC□T1102□□	FTKA02565	-	-	TW07P

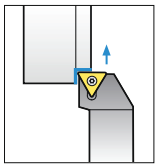
Applicable inserts **B59 ~ B60, B79**

● : Stock item

STFCR/L

TC□T





90°

• R type holder

(mm)

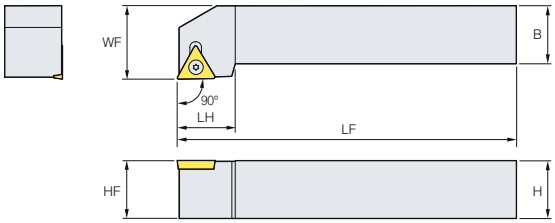
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
STFCR/L	1010-E09			10	70	12	10	10	10	R/L	TC□T0902□□	FTKA02206	-	-	TW06P
	1212-F11	●		14	80	16	12	12	12	R/L	TC□T1102□□	FTKA02565	-	-	TW07P
	1616-H11	●		14	100	20	16	16	16	R/L					
	1616-H16			19	100	20	16	16	16	R/L	TC□T16T3□□	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L
	2020-K16	●	●	19	125	25	20	20	20	R/L					
	2525-M16	●	●	25.2	150	32	25	25	25	R/L	TC□T16T3□□	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L

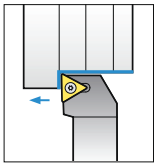
Applicable inserts **B59 ~ B60, B79**

● : Stock item

STGCR/L

TC□T





90°

• R type holder

(mm)

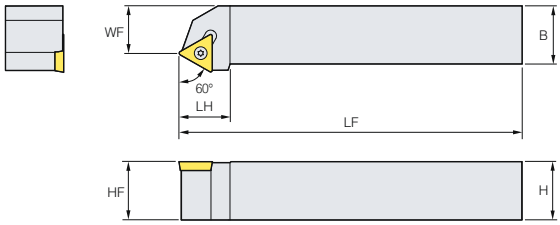
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
STGCR/L	0808-D09			11	60	10	8	8	8	R/L	TC□T0902□□	FTKA02206	-	-	TW06P
	1010-E09	●		11	70	12	10	10	10	R/L					
	1212-F11	●	●	14	80	16	12	12	12	R/L	TC□T1102□□	FTKA02565	-	-	TW07P
	1616-H11	●	●	16	100	20	16	16	16	R/L					
	1616-H16	●	●	21	100	20	16	16	16	R/L	TC□T16T3□□	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L
	2020-K16	●	●	21	125	25	20	20	20	R/L					
	2525-M16	●	●	21	150	32	25	25	25	R/L					

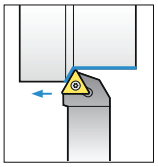
Applicable inserts **B59 ~ B60, B79**

● : Stock item

STTCR/L

TC□T





60°

• R type holder

(mm)

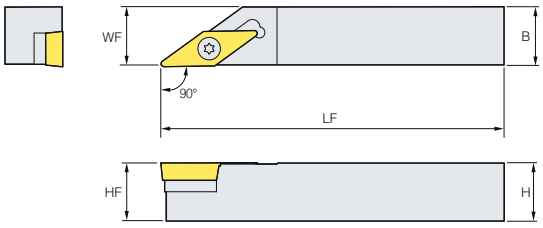
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
STTCR/L	1616-H11			14	100	13	16	16	16	R/L	TC□T1102□□	FTKA02565	-	-	TW07P
	1616-H16			19	100	13	16	16	16	R/L	TC□T16T3□□	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L
	2020-K16			19	125	17	20	20	20	R/L					

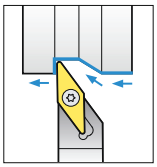
Applicable inserts **B59 ~ B60, B79**

● : Stock item

SVABR/L

VB□T





90°
• R type holder

(mm)

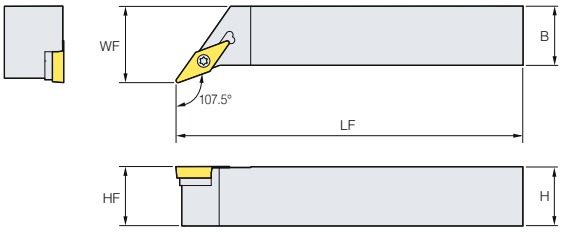
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SVABR/L	1616-H16			28	100	16.5	16	16	16	R/L	VB□T1604□□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	2020-K16			28	125	20.5	20	20	20	R/L					

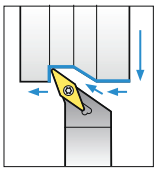
Applicable inserts **B65 ~ B67, B80**

● : Stock item

SVHBR/L

VB□T





107.5°
• R type holder

(mm)

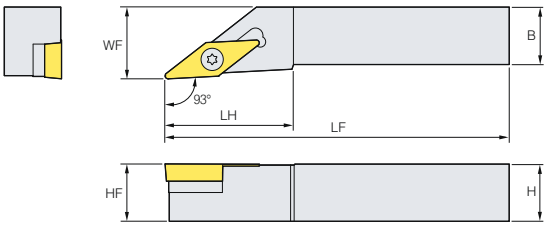
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SVHBR/L	2525-M16	●	●	31.5	150	32	25	25	25	R/L	VB□T1604□□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	3225-P16	●	●	31.5	170	32	32	25	32	R/L					

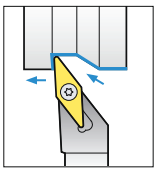
Applicable inserts **B65 ~ B67, B80**

● : Stock item

SVJBR/L

VB□T





93°
• R type holder

(mm)

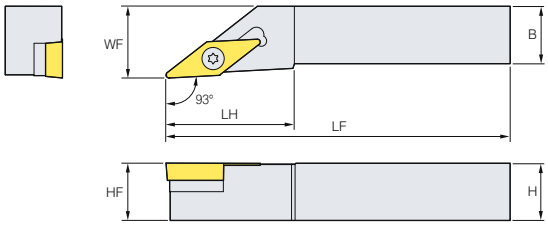
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SVJBR/L	1212-F11	●	●	27	80	16	12	12	12	R/L	VB□T1102□□	FTKA02565	-	-	TW07P
	1616-H11	●		27	80	16	16	16	16	R/L					
	2020-K11	●	●	27	125	25	20	20	20	R/L					
	1212-F11-2	●	●	27	80	16	12	12	12	R/L	VB□T1103□□	FTKA02565	-	-	TW07P
	1616-H11-2	●	●	27	80	16	16	16	16	R/L					
	2020-K11-2	●	●	27	125	25	20	20	20	R/L					
	1616-H16	●		36	100	20	16	16	16	R/L	VB□T1604□□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	2020-K16	●	●	41	125	25	20	20	20	R/L					
	2525-M16	●	●	41	150	32	25	25	25	R/L	VB□T1604□□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	3225-P16	●	●	41	170	32	32	25	32	R/L					
	3232-P16	●		55	170	40	32	32	32	R/L					

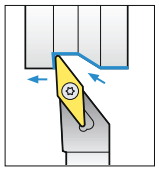
Applicable inserts **B65 ~ B67, B80**

● : Stock item

SVJCR/L

VC□T





93°

• R type holder

(mm)

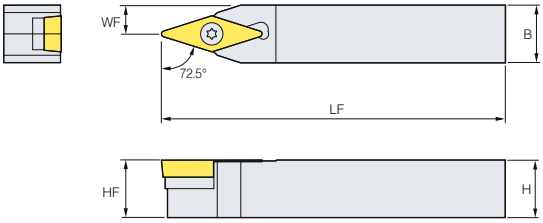
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SVJCR/L	1212-F11	●		25	80	16	12	12	12	R/L	VC□T1103□□	FTKA02565	-	-	TW07P
	1616-H11	●		25	100	20	16	16	16	R/L					
	2020-K11	●	●	25	125	25	20	20	20	R/L					
	1212-F13			32	80	16	12	12	12	R/L	VC□T1303□□	FTKA0307	-	-	TW09P
	1616-H13			32	100	20	16	16	16	R/L					
	2020-K13	●		32	125	25	20	20	20	R/L					
	1616-H16			40	100	20	16	16	16	R/L	VC□T1604□□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	2020-K16	●	●	40	125	25	20	20	20	R/L					
	2525-M16	●	●	40	150	32	25	25	25	R/L					

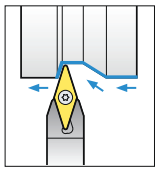
Applicable inserts **B68 ~ B70, B81**

● : Stock item

SVVBN

VB□T





72.5°

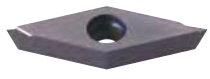
(mm)

Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SVVBN	1212-F11	●	27	80	6	12	12	12	N	VB□T1102□□	FTKA02565	-	-	TW07P
	1616-H11		27	100	8	16	16	16	N					
	2020-K11	●	27	125	8	20	20	20	N					
	1212-F11-2	●	27	80	6	12	12	12	N	VB□T1103□□	FTKA02565	-	-	TW07P
	1616-H11-2	●	27	100	8	16	16	16	N					
	2020-K11-2	●	27	125	8	20	20	20	N					
	1616-H16	●	33	100	8	16	16	16	N	VB□T1604□□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	2020-K16	●	32	125	10	20	20	20	N					
	2525-M16	●	32	150	12.5	25	25	25	N					
	3225-P16	●	32	170	12.5	32	25	32	N					

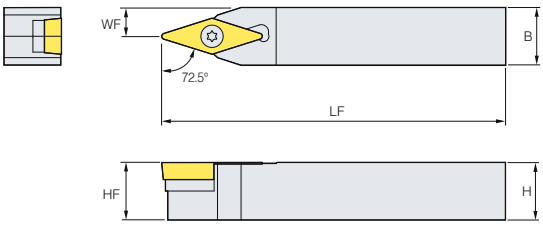
Applicable inserts **B65 ~ B67, B80**

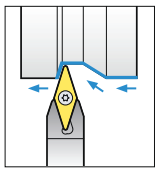
● : Stock item

SVVCN



VC□T





72.5°

(mm)

Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SVVCN	1212-F11	●	25	80	6	12	12	12	N	VC□T1103□□	FTKA02565	-	-	TW07P
	1616-H11		25	100	8	16	16	16	N					
	2020-K11	●	25	125	10	20	20	20	N					
	1212-F13		32	80	6	12	12	12	N	VC□T1303□□	FTNA0307	-	-	TW09P
	1616-H13		32	100	8	16	16	16	N					
	2020-K13		32	125	10	20	20	20	N					
	1616-H16		32	100	8	16	16	16	N	VC□T1604□□	FTGA03512	SV32S	SHXN0509F	TW15P, HW35L
	2020-K16	●	32	125	10	20	20	20	N					
	2525-M16	●	32	150	12.5	25	25	25	N					

Applicable inserts **B68 ~ B70, B81**

● : Stock item

S 12 M - S T F P R - 11

1	2	3	4	5	6	7	8	9
Type of Bar	Bar Diameter	Bar Length	Clamping system	Insert Shape	Lead Angle of Boring Bar	Relief Angle of Insert	Hand of Bar	Length of Insert Cutting Edge

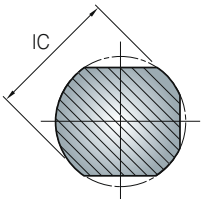
1 Type of Bar

S 12 M - S T F P R - 11

"A" Steel with coolant hole
"E" Carbide bar with fixed steel head and coolant hole
"C" Carbide shank
"S" Steel shank
"X" Special type

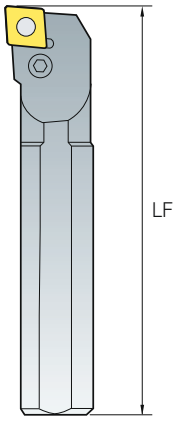
2 Bar Diameter

S 12 M - S T F P R - 11



3 Bar Length

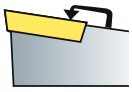
S 12 M - S T F P R - 11

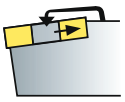


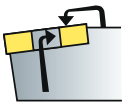
Symbol(LF)	Length(mm)
H	100
J	110
K	125
M	150
N	160
Q	180
R	200
S	250
T	300
U	350
V	400
W	450
Y	500

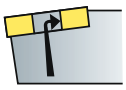
4 Clamping system

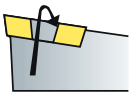
S 12 M - S T F P R - 11


Top clamping
C


Top and hole clamping
D

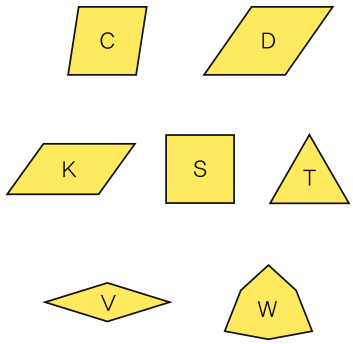

Top and hole clamping
M


Hole clamping
P


Screw on
S

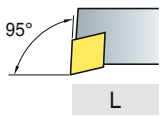
5 Insert Shape

S 12 M - S T F P R - 11



6 Lead Angle of Boring Bar

S 12 M - S T F P R - 11



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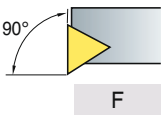

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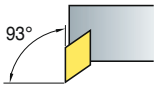

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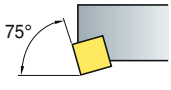

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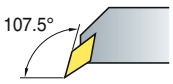

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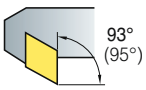

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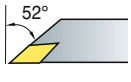

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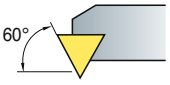
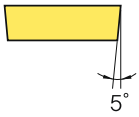


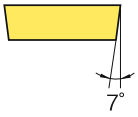
W

7 Relief Angle of Insert

S 12 M - S T F P R - 11



B



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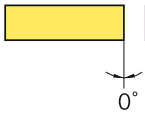

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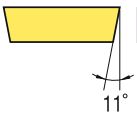
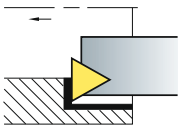


P

8 Hand of Bar

S 12 M - S T F P R - 11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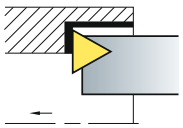
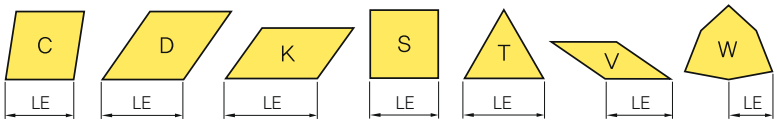
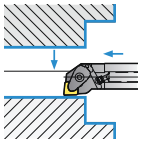
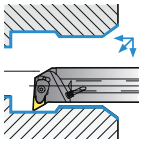
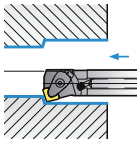
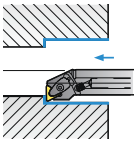
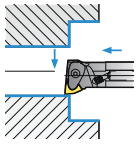

L

9 Length of Cutting Edge

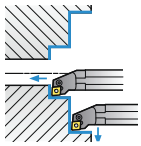
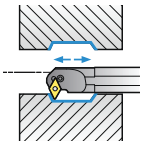
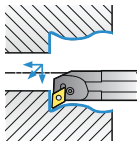
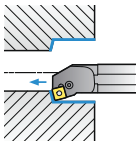
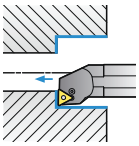
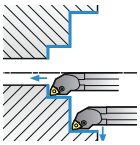
S 12 M - S T F P R - 11



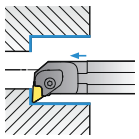
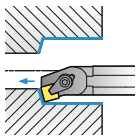
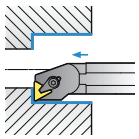
Double Clamp System

Cutting Shape								
Designation	**DCLNR/L**	**DDUNR/L**	**DSKNR/L**	**DTFNR/L**	**DWLNR/L**			
Tool cutting edge angle	95°	93°	75°	90°	95°			
Page	B125	B125	B125	B126	B126			
Copying		●						
Facing	●				●			
Back turning		●						
Turning	●	●	●	●	●			

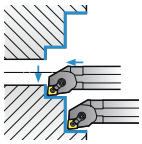
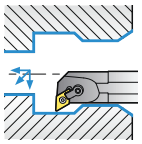
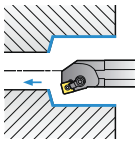
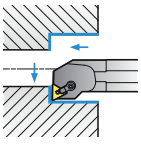
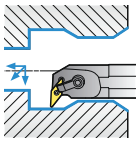
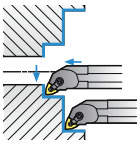
Lever Lock System

Cutting Shape								
Designation	**PCLNR/L**	**PDSNR/L**	**PDUNR/L**	**PSKNR/L**	**PTFNR/L**	**PWLNR/L**		
Tool cutting edge angle	95°	62.5°	93°	75°	90°	95°		
Page	B127	B127	B127	B128	B128	B128		
Copying		●	●					
Facing	●					●		
Back turning		●	●			●		
Turning	●	●	●	●	●	●		

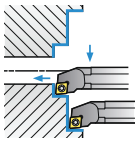
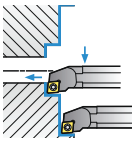
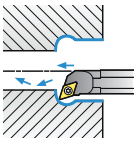
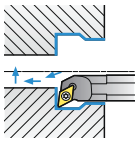
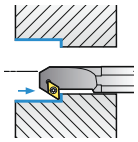
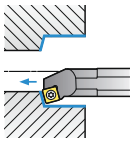
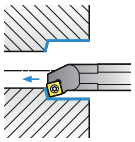
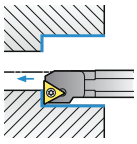
Clamp on System

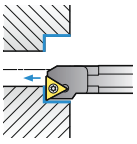
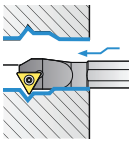
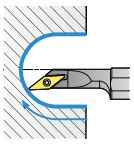
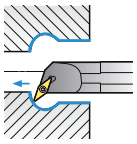
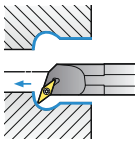
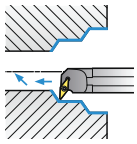
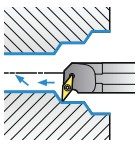
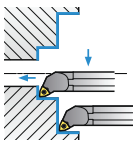
Cutting Shape								
Designation	**CKUNR/L**	**CSKPR/L**	**CTFPR/L**					
Tool cutting edge angle	93°	75°	90°					
Page	B129	B129	B129					
Copying								
Facing								
Back turning	●							
Turning	●	●	●					

Multi Lock System

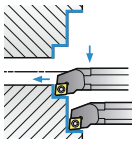
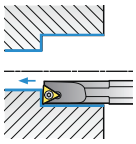
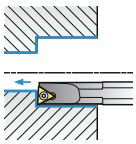
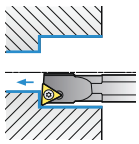
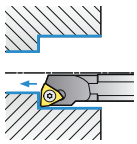
Cutting Shape								
Designation	**MCLNR/L**	**MDUNR/L**	**MSKNR/L**	**MTFNR/L**	**MVUNR/L**	**MWLNR/L**		
Tool cutting edge angle	95°	93°	75°	90°	93°	95°		
Page	B130	B130	B130	B131	B131	B131		
Copying		●			●			
Facing	●					●		
Back turning		●			●			
Turning	●	●	●	●	●	●		

Screw on System

Cutting Shape								
Designation	**SCLCR/L**	**SCLPR/L**	**SDQCR/L**	**SDUCR/L**	**SDZCR/L**	**SSKCR/L**	**SSKPR/L**	**STFCR/L**
Tool cutting edge angle	95°	95°	107.5°	93°	93°	75°	75°	90°
Page	B132	B133	B134	B135	B136	B136	B136	B137
Copying			●	●				
Facing	●	●						
Back turning			●	●	●			
Turning	●	●	●	●	●	●	●	●

Cutting Shape								
Designation	**STFPR/L**	**STWPR/L**	**SVJCR/L**	**SVQBR/L**	**SVQCR/L**	**SVUBR/L**	**SVUCR/L**	**SWLCR/L**
Tool cutting edge angle	90°	60°	52°	107.5°	107.5°	93°	93°	95°
Page	B138	B139	B139	B139	B140	B140	B140	B141
Copying			●	●	●	●	●	●
Facing								
Back turning				●	●	●	●	●
Turning	●	●	●	●	●	●	●	●

Compact Mini

Cutting Shape								
Designation	**SCLCR/L**	**STUBR/L**	**STLBR/L**	**STUPR/L**	**SWUBR/L**			
Tool cutting edge angle	95°	93°	95°	93°	93°			
Page	B142	B142	B142	B143	B144			
Copying								
Facing	●	●	●					
Back turning				●				
Turning	●	●	●	●	●			

Carbide Shank Boring Bar

Designation	SCLCR/L	SCLPR/L	SDQCR/L	SDUCR/L	STFCR/L
Tool cutting edge angle	95°	95°	107.5°	93°	90°
Page	B132	B133	B134	B135	B137

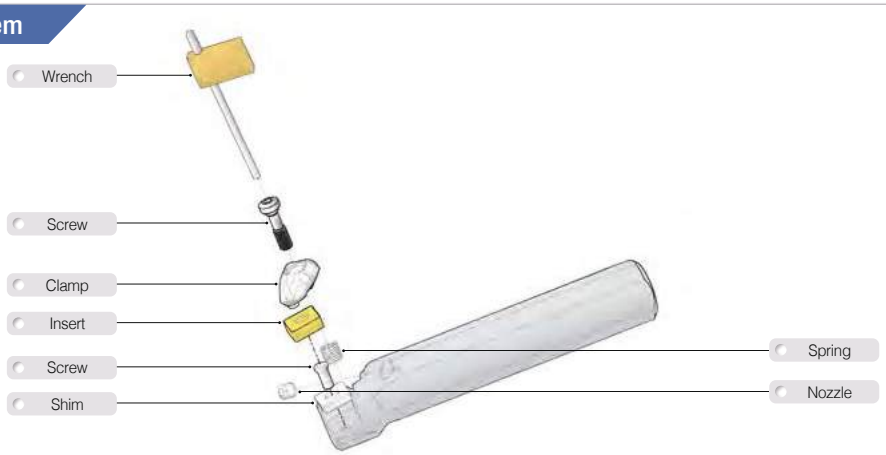
Designation	STFPR/L	STUBR/L	STUPR/L	SWUBR/L	-
Tool cutting edge angle	90°	93°	93°	93°	-
Page	B138	B142	B143	B144	-

Sleeve

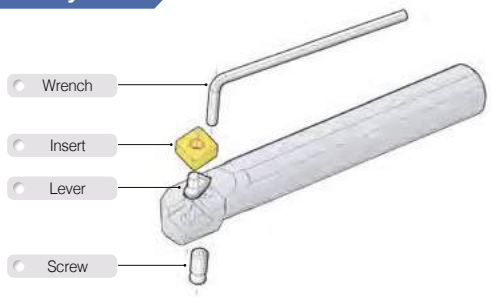
Shape	
Designation	**SL**
Page	B144

Instructions of Boring Bar Assembly

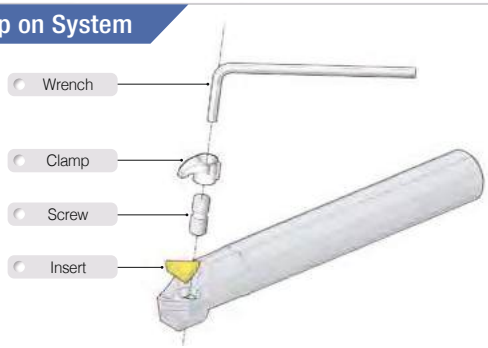
Double Clamp System



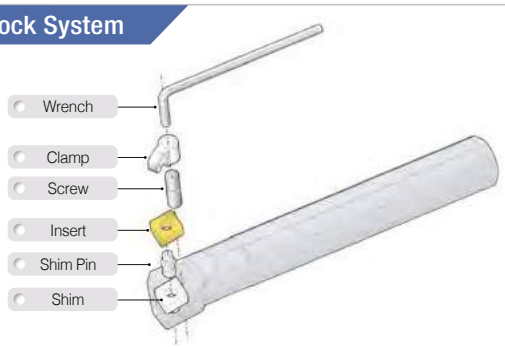
Lever Lock System



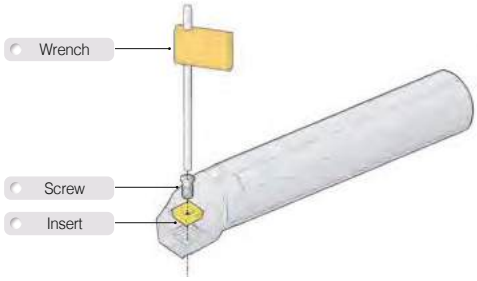
Clamp on System



Multi Lock System



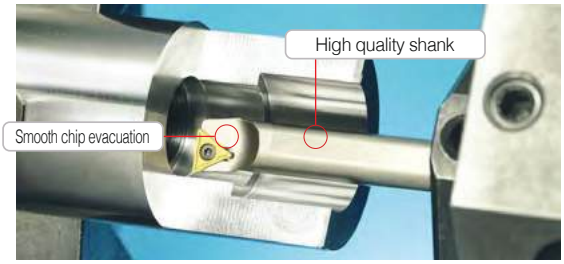
Screw on System



Carbide Shank Boring Bar

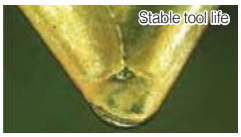
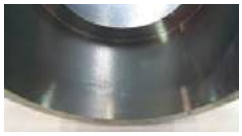
- Excellent cutting performance even in internal machining with chattering
- Available for various workpieces such as steel, stainless steel, cast iron, etc.
- Improved tool life and surface roughness

Features



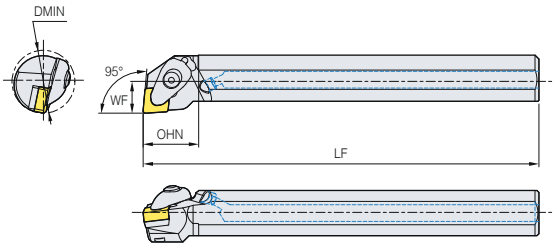
Higher strength and durability than steel shank, special surface treatment applied

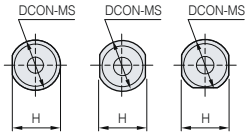
Comparison of chipping

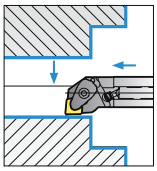
Specifications	Steel boring bar			Carbide boring bar		
• SCM440 • vc (m/min) = 200 • ap (mm) = 0.4 • fn (mm/rev) = 0.15 • Cutting depth: 5D						
						
	Rmax	Rz	Ra	Rmax	Rz	Ra
	4.67	3.68	0.62	3.07	2.76	0.53

DCLNR/L

CN□□







95°

• R type holder

(mm)

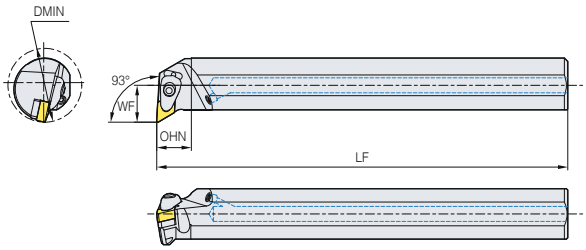
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench	Fig.
A25R-DCLNR/L-09			32	40	200	17	24	25	R/L	CN□□0903□□	CVH3	CHX0415	SC32V	FTKA0307	SPR0510	CN0605	HW25P	1
A25R-DCLNR/L-12	●	●	32	40	200	17	24	25	R/L	CN□□1204□□	CVH4	CHX0518	SC42V	FTKA0410	SPR0714	CN0605	HW30P	1
A32S-DCLNR/L-12	●	●	40	50	200	22	30	32	R/L									3
A40T-DCLNR/L-12	●	●	50	60	300	27	38	40	R/L									
A50U-DCLNR/L-16			63	70	350	35	47	50	R/L	CN□□1606□□	CVH5	CHX0622	SC54V	FTNA0511	SPR0811	CN0605	HW40L	3

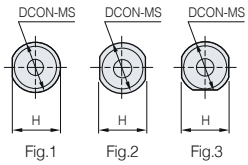
Applicable inserts **B5 ~ B12**

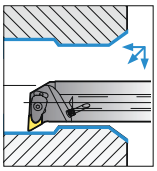
● : Stock item

DDUNR/L

DN□□







93°

• R type holder

(mm)

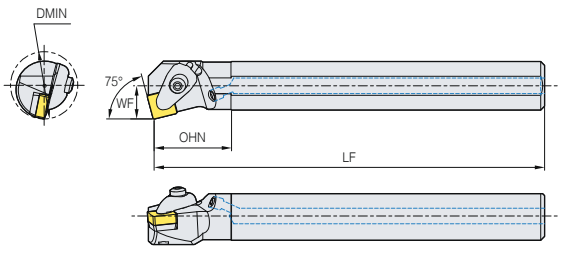
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench	Fig.
A40T-DDUNR/L-15	●		50	60	300	27	38	40	R/L	DN□□1506□□	CVH4	CHX0518	SD43V	FTKA0410	SPR0714	CN0605	HW30P	3
A50U-DDUNR/L-15		●	63	70	350	35	47	50	R/L									
A40T-DDUNR/L-15-3			50	60	300	27	38	40	R/L	DN□□1504□□	CVH4	CHX0518	SD44V	FTKA0410	SPR0714	CN0605	HW30P	3
A50U-DDUNR/L-15-3			63	70	350	35	47	50	R/L									

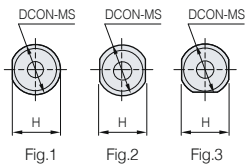
Applicable inserts **B13 ~ B18**

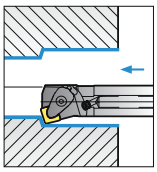
● : Stock item

DSKNR/L

SN□□







75°

• R type holder

(mm)

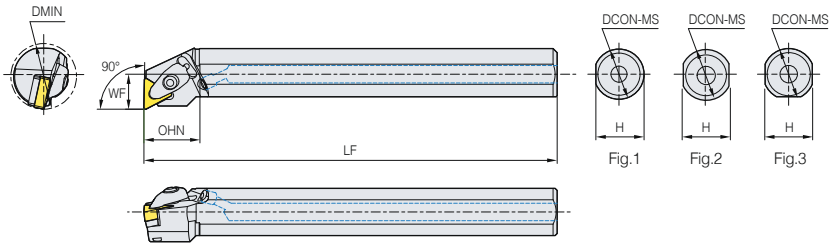
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench	Fig.
A25R-DSKNR/L-09	●	●	32	40	200	17	24	25	R/L	SN□□0903□□	CVH3	CHX0415	SS32V	FTKA0307	SPR0510	CN0605	HW25P	1
A25R-DSKNR/L-12			32	40	200	17	24	25	R/L	SN□□1204□□	CVH4	CHX0518	SS42V	FTKA0410	SPR0714	CN0605	HW30P	1
A32S-DSKNR/L-12	●		40	50	250	22	30	32	R/L									3
A40T-DSKNR/L-12			50	60	300	27	38	40	R/L									

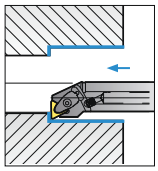
Applicable inserts **B20 ~ B28**

● : Stock item

DTFNR/L

TN□□





90°

• R type holder

(mm)

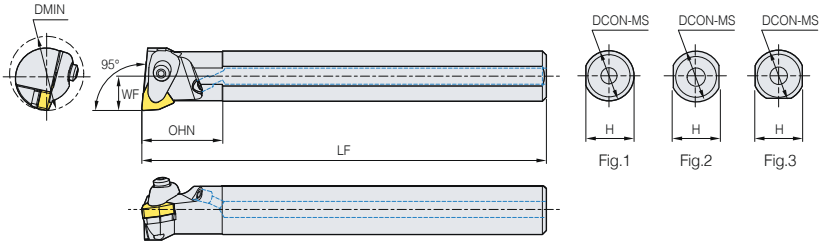
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench	Fig.
A25R-DTFNR/L-16	●	●	32	40	200	17	24	25	R/L	TN□□1604□□	CVH3	CHX0415	ST32V	FTKA0307	SPR0510	CN0605	HW25P	1
A32S-DTFNR/L-16	●		40	50	250	22	30	32	R/L									3
A40T-DTFNR/L-22	●		50	60	300	27	38	40	R/L	TN□□2204□□	CVH4	CHX0518	ST44V	FTKA0410	SPR0714	CN0605	HW30P	3
A50U-DTFNR/L-22	●		63	70	350	35	47	50	R/L									

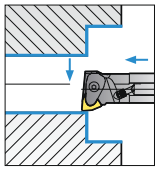
Applicable inserts **B29 ~ B36**

● : Stock item

DWLNR/L

WN□□





95°

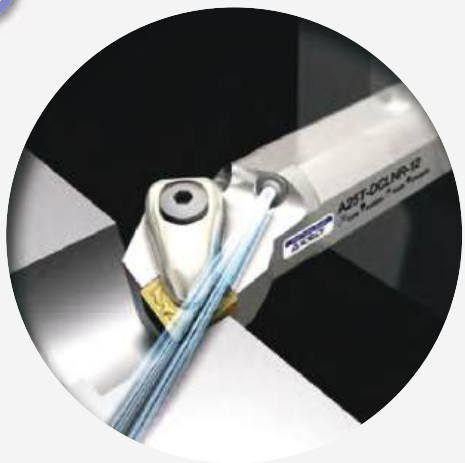
• R type holder

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Spring	Nozzle	Wrench	Fig.
A25R-DWLNR/L-06	●		32	40	200	17	24	25	R/L	WN□□0604□□	CVH3	CHX0415	SW32V	FTKA0307	SPR0510	CN0605	HW25P	1
A32S-DWLNR/L-06	●		40	50	250	22	30	32	R/L									3
A40T-DWLNR/L-06		●	50	60	300	27	38	40	R/L									
A25R-DWLNR/L-08	●	●	32	40	200	17	24	25	R/L	WN□□0804□□	CVH4	CHX0518	SW42V	FTKA0410	SPR0714	CN0605	HW30P	1
A32S-DWLNR/L-08	●	●	40	50	250	22	30	32	R/L									3
A40T-DWLNR/L-08	●		50	60	300	27	38	40	R/L									
A50U-DWLNR/L-08	●	●	63	70	350	35	47	50	R/L									

Applicable inserts **B39 ~ B43**

● : Stock item

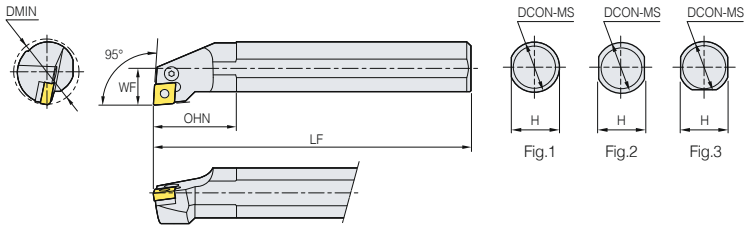


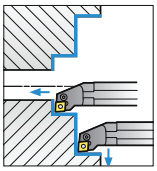
Features of Double Clamp (Boring bar)

Longer tool life and excellent surface finish can be achieved with the adjustable Coolant Nozzle

PCLNR/L

CN□□





95°

• R type holder

(mm)

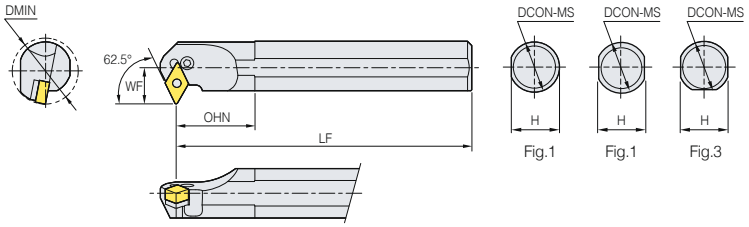
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench	Fig.
S16R-PCLNR/L-09	●	●	20	25	200	11	14	16	R/L	CN□□0903□□	LV3C	VHX0509B	-	-	-	HW20L	2
S20S-PCLNR/L-09	●	●	25	32	250	13	18	20	R/L								
S25R-PCLNR/L-09	●		32	40	200	17	23	25	R/L								3
S25R-PCLNR/L-12	●	●	32	40	200	17	23	25	R/L	CN□□1204□□	LV4A	VHX0613A	-	-	-	HW25L	3
S25T-PCLNR/L-12	●		32	40	300	17	23	25	R/L								
S32S-PCLNR/L-12	●	●	40	50	250	22	30	32	R/L		LV4	VHX0821	SC42B	SP4	LSPS4	HW30L	
S32U-PCLNR/L-12	●		40	50	350	22	30	32	R/L		LV4	VHX0821	SC43B	SP4	-	HW30L	
S40T-PCLNR/L-12	●	●	50	60	300	27	38	40	R/L		LV4	VHX0821	SC42B	SP4	LSPS4	HW30L	
S50U-PCLNR/L-12	●	●	63	70	350	35	47	50	R/L								
S50U-PCLNR/L-19	●	●	63	70	350	35	47	50	R/L	CN□□1906□□	LV6	VHX1027	SC63	SP6	LSPS6	HW40L	3
A25R-PCLNR/L-12	●	●	32	40	200	17	24	25	R/L	CN□□1204□□	LV4A	VHX0613A	-	-	-	HW25L	1
A32S-PCLNR/L-12	●	●	44	50	250	22	30	32	R/L		LV4	VHX0821	SC42B	SP4	LSPS4	HW30L	3
A40T-PCLNR/L-12	●		50	60	300	27	38	40	R/L								

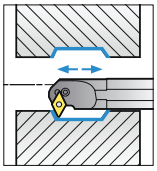
Applicable inserts **B5 ~ B12**

● : Stock item

PDSNR/L

DN□□





62.5°

• R type holder

(mm)

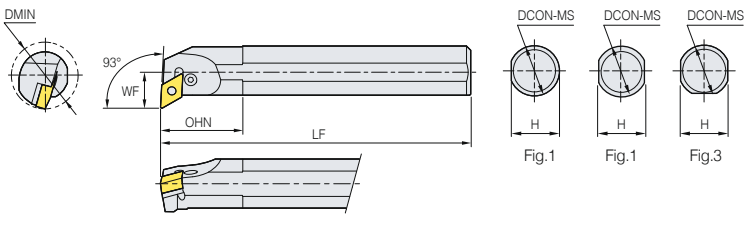
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench	Fig.
S32S-PDSNR/L-15	●	●	40	50	250	22	30	32	R/L	DN□□1506□□	LV4B	VHX0821	SD42	SP4	LSPS4	HW30L	3
S40T-PDSNR/L-15	●	●	50	60	300	27	38	40	R/L								
S32S-PDSNR/L-15-3			40	50	250	22	30	32	R/L	DN□□1504□□	LV4	VHX0821	SD42	SP4	LSPS4	HW30L	
S40T-PDSNR/L-15-3			50	45	300	27	38	40	R/L								
A32S-PDSNR/L-15			40	50	250	22	30	32	R/L	DN□□1506□□	LV4B	VHX0821	SD42	SP4	LSPS4	HW30L	
A32S-PDSNR/L-15-3			40	50	250	22	30	32	R/L	DN□□1504□□	LV4	VHX0821	SD42	SP4	LSPS4	HW30L	

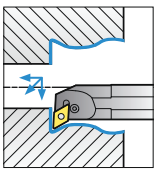
Applicable inserts **B13 ~ B18**

● : Stock item

PDUNR/L

DN□□





93°

• R type holder

(mm)

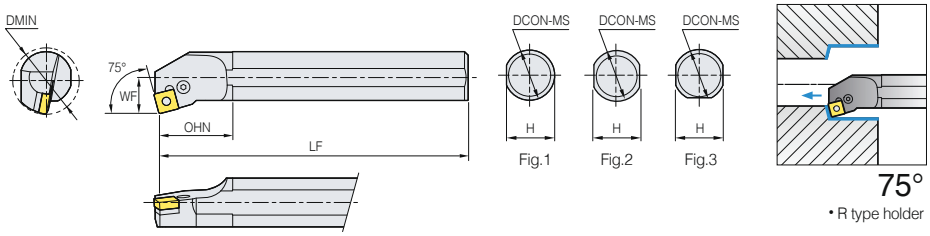
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench	Fig.
S32S-PDUNR/L-11			40	50	250	22	30	32	R/L	DN□□1104□□	LV3	VHX0617	SD317	SP3	LSPS3	HW25L	3
S32S-PDUNR/L-15	●	●	40	50	250	22	30	32	R/L	DN□□1506□□	LV4B	VHX0821	SD42	SP4	LSPS4	HW30L	3
S40T-PDUNR/L-15	●	●	50	60	300	27	38	40	R/L								
S50U-PDUNR/L-15	●	●	63	55	350	35	47	50	R/L								
S32S-PDUNR/L-15-3			40	50	250	22	30	32	R/L	DN□□1504□□	LV4	VHX0821	SD42	SP4	LSPS4	HW30L	3
S40T-PDUNR/L-15-3			50	60	300	27	38	40	R/L								
A32S-PDUNR/L-15			40	50	250	22	30	32	R/L	DN□□1506□□	LV4B	VHX0821	SD42	SP4	LSPS4	HW30L	3
A32S-PDUNR/L-15-3			40	50	250	22	30	32	R/L	DN□□1504□□	LV4	VHX0821	SD42	SP4	LSPS4	HW30L	3

Applicable inserts **B13 ~ B18**

● : Stock item

PSKNR/L

SN□□



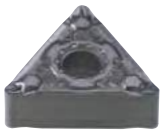
(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench	Fig.
S25R-PSKNR/L-12	●	●	32	40	200	17	23	25	R/L	SN□□1204□□	LV4A	VHX0613A	-	-	-	HW30L	3
S32S-PSKNR/L-12	●		40	50	250	22	30	32	R/L		LV4	VHX0821	SS42B	SP4	LSPS4	HW30L	
S40T-PSKNR/L-12	●		50	60	300	27	38	40	R/L								
A25R-PSKNR/L-12			32	40	200	17	24	25	R/L	SN□□1204□□	LV4A	VHX0613A	-	-	-	HW25L	1
A32S-PSKNR/L-12			40	50	250	22	30	32	R/L		LV4	VHX0821	SS42B	SP4	LSPS4	HW30L	3

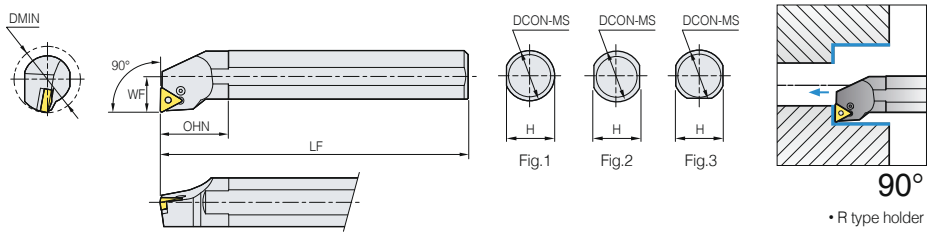
Applicable inserts **B20 ~ B28**

● : Stock item

PTFNR/L



TN□□



(mm)

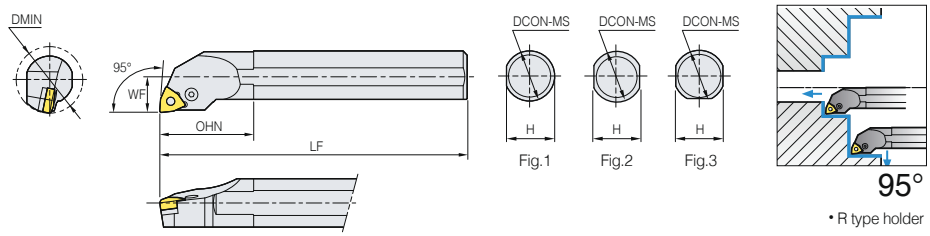
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench	Fig.
S16R-PTFNR/L-11	●		20	25	200	11	14	16	R/L	TN□□1103□□	LV2	VHX0509B	-	-	-	HW25L	2
S20S-PTFNR/L-11	●		25	32	250	13	18	20	R/L								
S25R-PTFNR/L-11	●		32	40	200	17	23	25	R/L								3
S25R-PTFNR/L-16	●	●	32	40	200	17	23	25	R/L	TN□□1604□□	LV3B	VHX0512B	-	-	-	HW20L	3
S32S-PTFNR/L-16	●	●	40	50	250	22	30	32	R/L		LV3	VHX0617	ST317B	SP3	LSPS3	HW25L	
S40T-PTFNR/L-16	●	●	50	60	300	27	38	40	R/L								
A25R-PTFNR/L-16			32	40	200	17	24	25	R/L		LV3	VHX0617	-	-	-	HW25L	1
A32S-PTFNR/L-16			40	50	250	22	30	32	R/L		LV3	VHX0617	ST317B	SP3	LSPS3	HW25L	3

Applicable inserts **B29 ~ B36**

● : Stock item

PWLNR/L

WN□□



(mm)

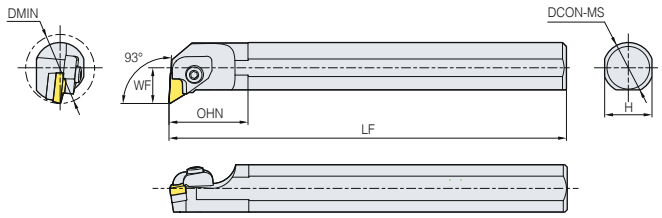
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Shim Pin Punch	Wrench	Fig.
S16R-PWLNR/L-06	●		20	40	200	6	14	16	R/L	WN□□0604□□	LV3B	VHX0512B	-	-	-	HW20L	2
S20S-PWLNR/L-06	●	●	25	32	250	13	18	20	R/L		LV3B	VHX0512B	-	-	-	HW20L	2
S25R-PWLNR/L-06	●		32	40	200	17	23	25	R/L	WN□□0604□□							3
S32S-PWLNR/L-06	●		40	50	250	22	30	32	R/L		LV3	VHX0617	SW317	SP3	LSPS3	HW25L	
S25R-PWLNR/L-08	●	●	32	40	200	17	23	25	R/L	WN□□0804□□	LV4A	VHX0613A	-	-	-	HW25L	3
S32S-PWLNR/L-08	●	●	40	50	250	22	30	32	R/L		LV4	VHX0821	SW42	SP4	LSPS3	HW30L	

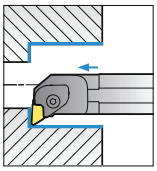
Applicable inserts **B39 ~ B43**

● : Stock item

CKUNR/L

KN□□





93°

• R type holder

(mm)

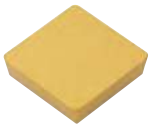
Designation	Stock	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Clamp	Clamp Screw	Spring	Shim	Pin+Spring	Shim Screw	Wrench
S32S-CKUNR-16	●	40	70	250	22	30	32	R	KN□□1604□□L	CTH6LI	CHX0625	SR3	SK33CL	PN0515 SR4	SHX0310	HW40L HW20L
S40T-CKUNR-16	●	50	60	300	27	37	40	R								
S50U-CKUNR-16	●	63	55	350	35	43	50	R								
S32S-CKUNL-16		40	70	250	22	30	32	L	KN□□1604□□R	CTH6RI	CHX0625	SR3	SK33C	PN0515 SR4	SHX0310	HW40L HW20L
S40T-CKUNL-16		50	60	300	27	37	40	L								
S50U-CKUNL-16		63	55	350	35	43	50	L								

Applicable inserts **B19**

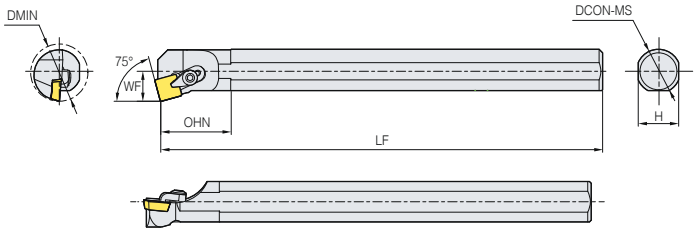
• Use left handed insert for right handed holder

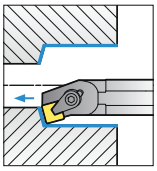
● : Stock item

CSKPR/L



SP□□





75°

• R type holder

(mm)

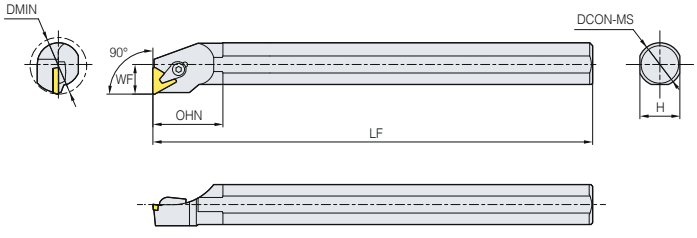
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Clamp	Clamp Screw	C-ring	Wrench
S16R-CSKPR/L-09	●		20	30	200	11	15	16	R/L	SP□□0903□□	CH4R1C	CHX0414C	CR02C	HW25L
S20S-CSKPR/L-09			25	36	250	13	18	20	R/L		CH5R5C	CHX0519C	CR03C	HW30L
S20S-CSKPR/L-12	●		25	28	250	13	18	20	R/L	SP□□1203□□	CH6R5	CH0616	CR04C	HW30L
S25R-CSKPR/L-12			32	40	200	12	23	25	R/L					

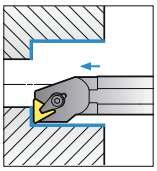
Applicable inserts **B56 ~ B57**

● : Stock item

CTFPR/L

TP□□





90°

• R type holder

(mm)

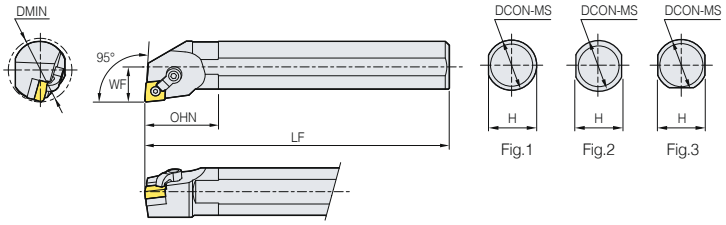
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Clamp	Clamp Screw	C-ring	Shim	Shim Pin	Wrench
S12M-CTFPR/L-11	●		16	26	150	9	11	12	R/L	TP□□1103□□	CH4R1C	CHX0414C	CR02C	-	-	HW25L
S16R-CTFPR/L-11	●		20	40	200	11	15	16	R/L							
S20S-CTFPR/L-11	●		25	40	250	13	18	20	R/L							
S16R-CTFPR/L-16	●		20	40	200	11	15	16	R/L	TP□□1603□□	CH5R5C	CHX0519C	CR03C	-	-	HW30L
S20S-CTFPR/L-16	●		25	40	250	13	18	20	R/L							
S25R-CTFPR/L-16	●		32	40	200	16	23	25	R/L		CH6R5	CHX0622C	CR04C	ST32C	SP3C	
S32S-CTFPR/L-16	●		40	45	250	22	30	32	R/L							
S40T-CTFPR/L-16			50	60	300	27	37	40	R/L							
S40T-CTFPR/L-22			50	60	300	27	37	40	R/L	TP□□2204□□	CH83R1	CH0823C	CR05C	ST43C	SP4C	HW40L

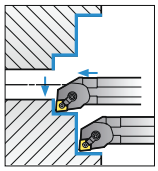
Applicable inserts **B61 ~ B64**

● : Stock item

MCLNR/L

CN□□





95°

• R type holder

(mm)

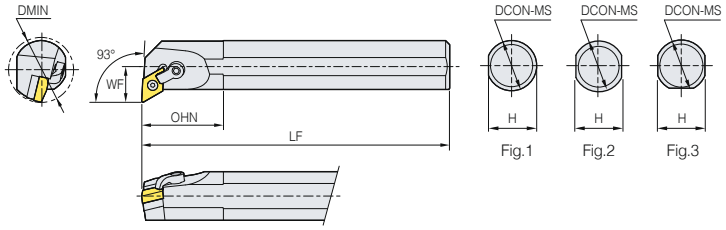
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench	Fig.
S20S-MCLNR/L-09			25	32	250	13	18	20	R/L	CN□□0903□	CDH7N	DHA10/32-19	-	SP3D3	HW19.8L	2
S25R-MCLNR/L-09			32	40	200	17	23	25	R/L						HW23.8L	3
S25R-MCLNR/L-12	●		32	40	200	17	23	25	R/L	CN□□1204□	CDH6N	DHA1/4-21	-	SP4DS	HW31.8L	3
S32S-MCLNR/L-12	●		40	50	250	22	30	32	R/L				SC43D	SP4D	HW23.8L	
S40T-MCLNR/L-12			50	60	300	27	38	40	R/L							
A25R-MCLNR/L-12			32	40	200	17	24	25	R/L	CN□□1204□	CDH6N	DHA1/4-21	-	SP4DS	HW31.8L	1
A32S-MCLNR/L-12			40	50	250	22	30	32	R/L				SC43D	SP4D	HW23.8L	3

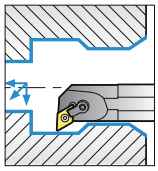
Applicable inserts **B5 ~ B12**

● : Stock item

MDUNR/L

DN□□





93°

• R type holder

(mm)

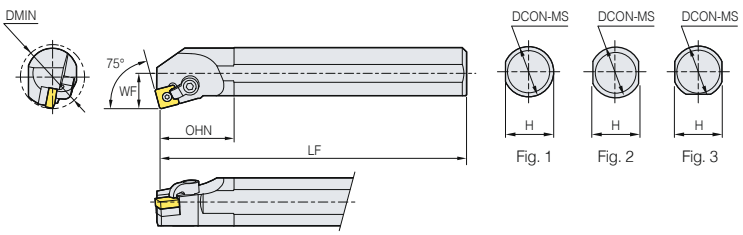
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench	Fig.
S32S-MDUNR/L-15-3			40	50	250	22	30	32	R/L	DN□□1504□	CDH6N	DHA1/4-21	SD43D	SP4D	HW31.8L HW23.8L	3
S40T-MDUNR/L-15-3			50	60	300	27	38	40	R/L							
A32S-MDUNR/L-15-3			40	50	250	22	30	32	R/L							

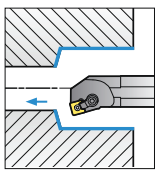
Applicable inserts **B13 ~ B18**

● : Stock item

MSKNR/L

SN□□





75°

• R type holder

(mm)

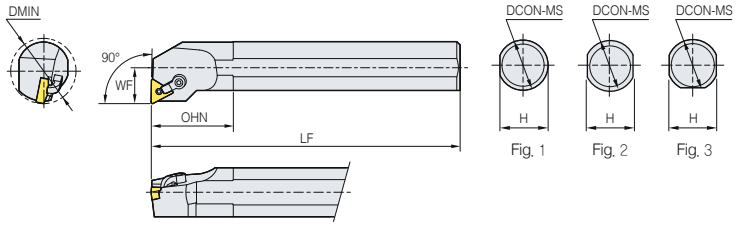
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench	Fig.
S25R-MSKNR/L-12			32	45	200	17	23	25	R/L	SN□□1204□	CDH8N1	DHA5/16-28	-	SP4DS	HW39.7L	3
S32S-MSKNR/L-12			40	50	250	22	30	32	R/L				SS43D	SP4D	HW23.8L	
S40T-MSKNR/L-12			50	60	300	27	38	40	R/L							
A25R-MSKNR/L-12			32	40	200	17	23	25	R/L	SN□□1204□	CDH8N1	DHA5/16-28	-	SP4DS	HW39.7L	1
A32S-MSKNR/L-12			40	50	250	22	30	32	R/L				SS43D	SP4D	HW23.8L	3
A40T-MSKNR/L-12			50	50	300	27	37	40	R/L							

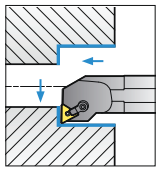
Applicable inserts **B20 ~ B28**

● : Stock item

MTFNR/L

TN□□





90°

• R type holder

(mm)

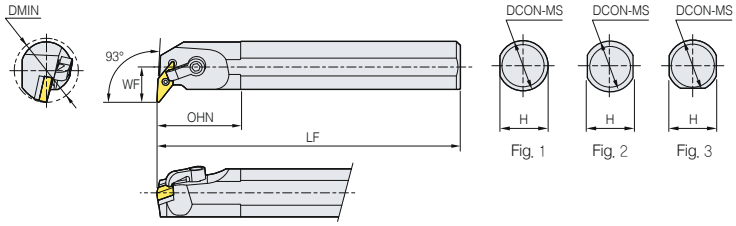
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench	Fig.
S25R-MTFNR/L-16			32	91	25	23	200	17	R/L	TN□□1604□	CDH7N1	DHA10-32-19	-	SP3D3	HW23.8L	3
S32S-MTFNR/L-16			40	61	32	30	250	22	R/L		CDH7N1	DHA10-32-19	ST32D	SP3D	HW19.8L	
S40T-MTFNR/L-16			50	61	40	38	300	27	R/L							
A25R-MTFNR/L-16			32	91	25	23	200	17	R/L	TN□□1604□	CDH7N1	DHA10-32-19	-	SP3D3	HW23.8L	1
A32S-MTFNR/L-16			40	61	32	30	250	22	R/L		CDH7N1	DHA10-32-19	ST32D	SP3D	HW19.8L	3

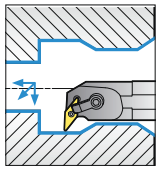
Applicable inserts **B29 ~ B36**

● : Stock item

MVUNR/L

VN□□





93°

• R type holder

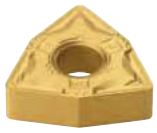
(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench	Fig.
S32S-MVUNR/L-16			40	93	32	30	250	22	R/L	VN□□1604□	CDH8N2	DHA5/16-28	SV32D	SP3D	HW39.7L HW19.8L	3
S40T-MVUNR/L-16			50	93	40	38	300	27	R/L							
A32S-MVUNR/L-16	●		40	93	32	30	250	22	R/L							
A40T-MVUNR/L-16			50	93	40	38	300	27	R/L							

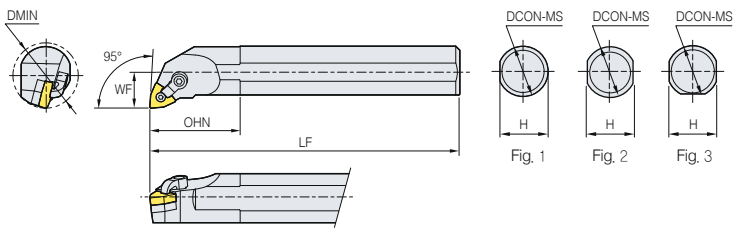
Applicable inserts **B37 ~ B38**

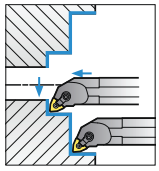
● : Stock item

MWLNR/L



WN□□





95°

• R type holder

(mm)

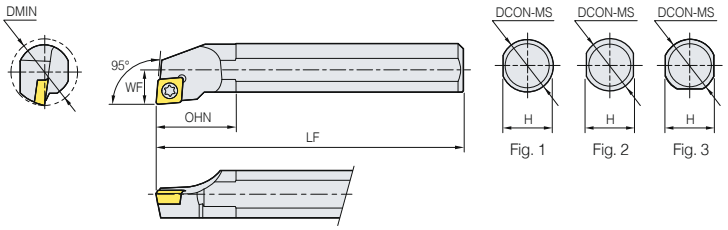
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Pin	Wrench	Fig.
S25R-MWLNR/L-06	●		32	95	25	23	200	17	R/L	WN□□0604□	CDH7N	DHA10/32-19	-	SP3D3	HW23.8L HW19.8L	3
S32S-MWLNR/L-06			32	95	32	30	250	22	R/L				SW32D	SP3D		
S40T-MWLNR/L-06			50	95	40	38	300	27	R/L							
S25R-MWLNR/L-08	●	●	32	95	25	23	200	17	R/L	WN□□0804□	CDH6N	DHA1/4-21	-	SP4DS	HW31.8L HW23.8L	3
S32S-MWLNR/L-08	●		40	95	32	30	250	22	R/L				SW43D	SP4D		
S40T-MWLNR/L-08	●		50	95	40	38	300	27	R/L							
A25R-MWLNR/L-06			32	95	25	23	200	17	R/L	WN□□0604□	CDH7N	DHA10/32-19	-	SP3D3	HW31.8L	1
A32S-MWLNR/L-06			32	95	32	30	250	22	R/L				SW32D	SP3D	HW19.8L	3
A25R-MWLNR/L-08			32	95	25	23	200	17	R/L	WN□□0804□	CDH6N	DHA1/4-21	-	SP4DS	HW31.8L	1
A32S-MWLNR/L-08			40	95	32	30	250	22	R/L				SW43D	SP4D	HW23.8L	3

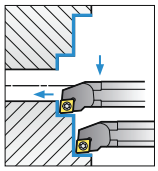
Applicable inserts **B39 ~ B43**

● : Stock item

SCLCR/L

CC□T





95°

• R type holder

Steel shank type

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S08K-SCLCR/L-06	●	●	10	12	125	5	7.2	8	R/L	CC□T0602□□	FTKA02555			TW07	2
S10K-SCLCR/L-06	●	●	12	16	125	6	9	10	R/L		FTKA02565	-	-	TW07P	
S10M-SCLCR/L-06	●	●	12	16	150	6	9	10	R/L						
S12M-SCLCR/L-06	●	●	16	20	150	9	11	12	R/L						
S16R-SCLCR/L-06	●		20	25	200	11	14	16	R/L						
S12M-SCLCR/L-09	●	●	16	20	150	9	11	12	R/L	CC□T09T3□□	FTGA03508	-	-	TW15P	2
S16R-SCLCR/L-09	●	●	20	25	200	11	14	16	R/L						
S20S-SCLCR/L-09	●	●	25	32	250	13	18	20	R/L						
S25R-SCLCR/L-09	●	●	32	40	200	17	23	25	R/L		FTGA03510			TW15P	3
S25R-SCLCR/L-12	●	●	32	40	200	17	23	25	R/L	CC□T1204□□	FTGA0411F	-	-	TW15P	3
S32S-SCLCR/L-12	●	●	40	50	250	22	30	32	R/L		FTGA0411F	SC42S	SHXN0610F	HW40L TW15P	
S40T-SCLCR/L-12	●	●	50	60	300	27	38	40	R/L						
A08F-SCLCR/L-06	●	●	10	14	80	5	7.6	8	R/L	CC□T0602□□	FTKA02555	-	-	TW07P	1
A10H-SCLCR/L-06	●	●	12	16	100	6	9.5	10	R/L		FTKA02565	-	-	TW07P	
A12K-SCLCR/L-06	●	●	16	20	125	9	11.5	12	R/L						
A12K-SCLCR/L-09	●		16	20	125	9	11.5	12	R/L	CC□T09T3□□	FTGA03508	-	-	TW15P	1
A16M-SCLCR/L-09	●	●	20	25	150	11	15	16	R/L						
A20Q-SCLCR/L-09	●	●	25	32	180	13	19	20	R/L						
A25R-SCLCR/L-09	●		32	40	200	17	24	25	R/L		FTGA03510	-	-	TW15P	
A25R-SCLCR/L-12			32	40	200	17	24	25	R/L	CC□T1204□□	FTGA0411F	-	-	TW15P	1
A32S-SCLCR/L-12			40	50	250	22	30	32	R/L		FTGA0411F	SC42S	SHXN0610F	HW40L,TW15P	3

Carbide shank type

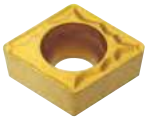
(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
C04G-SCLCR/L-03	●	●	5	-	90	2.5	3.8	4	R/L	CC□T0301□□	FTNA01633	TW06P	1
C05H-SCLCR/L-03	●	●	6	-	100	3	4.4	5	R/L				
C06H-SCLCR/L-04	●		7	-	100	3.5	5.4	6	R/L	CC□T0401□□	FTNA0238	TW06P	
C07K-SCLCR/L-04	●		8	-	125	4	6.4	7	R/L				
C08K-SCLCR/L-06	●	●	10	-	125	5	7	8	R/L	CC□T0602□□	FTKA02555	TW07P	2
C10K-SCLCR/L-06	●		12	-	125	6	9	10	R/L		FTKA02565	TW07P	
C10M-SCLCR/L-06	●		12	-	150	6	9	10	R/L				
C12M-SCLCR/L-06	●		16	-	150	9	11	12	R/L				
C12Q-SCLCR/L-06	●		14	-	180	7	11	12	R/L				
C12M-SCLCR/L-09	●		16	-	150	9	11	12	R/L	CC□T09T3□□	FTGA03508	TW15P	
C12Q-SCLCR/L-09	●		15	-	180	8	11	12	R/L				
C16R-SCLCR/L-09	●		20	-	200	10	15	16	R/L				
C16S-SCLCR/L-09	●		20	-	250	10	15	16	R/L				
C20R-SCLCR/L-09	●		25	-	200	13	18	20	R/L				
C20S-SCLCR/L-09	●		25	-	250	13	18	20	R/L				
C25T-SCLCR/L-12	●		32	-	300	17	23	25	R/L	CC□T1204□□	FTGA0411F	TW15P	
E06H-SCLCR/L-04	●		7	-	100	3.5	5.4	6	R/L	CC□T0401□□	FTNA0238	TW06P	1
E07K-SCLCR/L-04			8	-	125	4	6.6	7	R/L				
E08K-SCLCR/L-06	●	●	10	-	125	5	7.5	8	R/L	CC□T0602□□	FTKA02555	TW07P	2
E10K-SCLCR/L-06	●	●	12	-	125	6	9	10	R/L		FTKA02565	TW07P	
E10M-SCLCR/L-06	●	●	12	-	150	6	9.5	10	R/L				
E12M-SCLCR/L-06	●	●	16	-	150	9	11.5	12	R/L				
E12Q-SCLCR/L-06	●		14	-	180	7	11	12	R/L				
E12M-SCLCR/L-09	●		14	-	150	7	11	12	R/L	CC□T09T3□□	FTGA03508	TW15P	
E12Q-SCLCR/L-09			15	-	180	8	11	12	R/L				
E16R-SCLCR/L-09	●		20	-	200	11	15.5	16	R/L				
E16S-SCLCR/L-09			20	-	250	10	15	16	R/L				
E20R-SCLCR/L-09	●		25	-	200	13	18	20	R/L				
E20S-SCLCR/L-09	●		25	-	250	13	19	20	R/L				
E25T-SCLCR/L-12			32	-	300	17	23	25	R/L	CC□T1204□□	FTGA0411F	TW15P	

Applicable inserts **B44 ~ B48, B75**

● : Stock item

SCLPR/L



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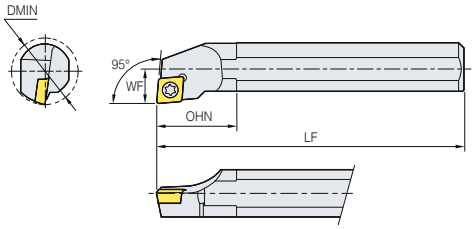


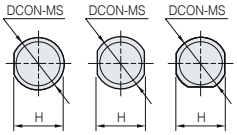
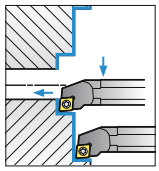


Fig. 1 Fig. 2 Fig. 3



95°

• R type holder

Steel shank type

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
S10M-SCLPR/L-08	●		13	16	150	7	9	10	R/L	CP□T0802□□	FTNA0305	TW09P	2
S12M-SCLPR/L-08	●		16	20	150	9	11	12	R/L		FTNA0307	TW09P	
S16N-SCLPR/L-09	●		20	25	160	11	14	16	R/L	CP□T0903□□	FTNA0408	TW15P	2
S16R-SCLPR/L-09	●		20	25	200	11	14	16	R/L				
S20N-SCLPR/L-09	●		25	32	160	13	18	20	R/L				
S20S-SCLPR/L-09	●		25	32	250	13	18	20	R/L				3
A10H-SCLPR/L-08			12	16	100	6	9.5	10	R/L	CP□T0802□□	FTNA0305	TW09P	1
A12K-SCLPR/L-08			16	20	125	9	11.5	12	R/L		FTNA0307	TW09P	
A16M-SCLPR/L-09			20	25	150	10	15	16	R/L	CP□T0903□□	FTNA0408	TW15P	1
A20Q-SCLPR/L-09			25	32	180	13	19	20	R/L				3

Carbide shank type

(mm)

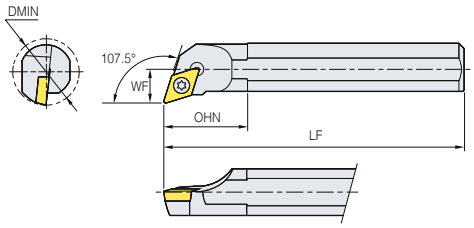
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
C10K-SCLPR/L-08	●		12	14.5	125	6	9	10	R/L	CP□T0802□□	FTNA0305	TW09P	2
C10M-SCLPR/L-08	●		12	14.5	150	6	9	10	R/L				
C12M-SCLPR/L-08	●		16	14.7	150	9	11	12	R/L		FTNA0306	TW09P	
C12Q-SCLPR/L-08			15	14.7	180	7.5	11	12	R/L				
C12M-SCLPR/L-09	●		16	14.4	150	9	11	12	R/L	CP□T0903□□	FTNA0408	TW15P	
C12Q-SCLPR/L-09	●		15	14.4	180	8	11	12	R/L				
C16R-SCLPR/L-09	●		20	22.4	200	10	15	16	R/L				
C16S-SCLPR/L-09	●		20	22.4	250	10	15	16	R/L				
C20R-SCLPR/L-09	●		25	22.5	200	13	18	20	R/L				
C20S-SCLPR/L-09	●		25	22.5	250	12.5	18	20	R/L				
E10K-SCLPR/L-08			12	14.5	125	6	9	10	R/L	CP□T0802□□	FTNA0305	TW09P	2
E10M-SCLPR/L-08			12	14.5	150	6	9.5	10	R/L				
E12M-SCLPR/L-08			16	14.7	150	8	11	12	R/L				
E12Q-SCLPR/L-08			15	14.7	180	7.5	11	12	R/L				
E12M-SCLPR/L-09			15	14.4	150	8	11	12	R/L		FTNA0407	TW09P	
E12Q-SCLPR/L-09			15	14.4	180	8	11	12	R/L				
E16R-SCLPR/L-09			20	22.4	200	10	15	16	R/L	CP□T0903□□	FTNA0408	TW15P	
E16S-SCLPR/L-09			20	22.4	250	10	15	16	R/L				
E20R-SCLPR/L-09			25	22.5	200	13	18	20	R/L				
E20S-SCLPR/L-09	●		25	22.5	250	12.5	19	20	R/L				

Applicable inserts **B49**

● : Stock item

SDQCR/L

DC□T



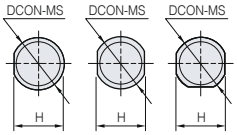
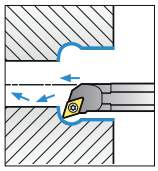


Fig. 1 Fig. 2 Fig. 3



107.5°
• R type holder

Steel shank type

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
S10M-SDQCR/L-07	●	●	13	16	150	7	9	10	R/L	DC□T0702□□	FTKA02555	TW07P	2
S12M-SDQCR/L-07	●	●	16	20	150	9	11	12	R/L		FTKA02565	TW07P	
S16R-SDQCR/L-07	●	●	20	25	200	11	14	16	R/L				
S16R-SDQCR/L-11	●	●	20	25	200	11	14	16	R/L	DC□T11T3□□	FTGA03508	TW15P	2
S20S-SDQCR/L-11	●	●	25	32	250	13	18	20	R/L				
S25R-SDQCR/L-11	●	●	32	40	200	17	23	25	R/L		FTGA03510	TW15P	3
A10H-SDQCR/L-07	●		13	16	100	7	9.5	10	R/L	DC□T0702□□	FTKA02555	TW07P	1
A12K-SDQCR/L-07	●		16	20	125	9	11.5	12	R/L		FTKA02565	TW07P	1
A16M-SDQCR/L-11			20	25	150	11	15	16	R/L	DC□T11T3□□	FTGA03508	TW15P	1
A20Q-SDQCR/L-11	●		25	32	180	13	19	20	R/L				
A25R-SDQCR/L-11	●		32	40	200	17	24	25	R/L		FTGA03510	TW15P	1

Carbide shank type

(mm)

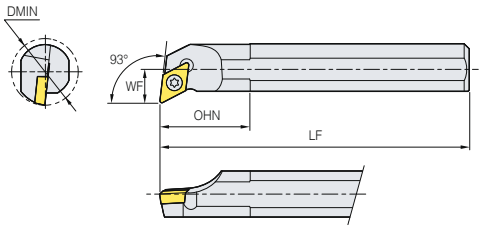
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
C08K-SDQCR/L-07	●		10	-	125	6	7	8	R/L	DC□T0702□□	FTKA02555	TW07P	2
C10K-SDQCR/L-07	●		13	14	125	7	9	10	R/L				
C12M-SDQCR/L-07	●		16	14	150	9	11	12	R/L		FTKA02565	TW07P	
C16R-SDQCR/L-07	●		20	-	200	11	15	16	R/L				
C16R-SDQCR/L-11	●		20	21.3	200	11	15	16	R/L	DC□T11T3□□	FTGA03508	TW15P	
C20R-SDQCR/L-11	●		25	24	200	13	18	20	R/L				
C20S-SDQCR/L-11	●		25	24	250	13	18	20	R/L				
E08K-SDQCR/L-07	●		10	-	125	6	7	8	R/L	DC□T0702□□	FTKA02555	TW07P	2
E10K-SDQCR/L-07	●		12	14	125	7	9	13	R/L				
E12M-SDQCR/L-07			16	14	150	9	11	12	R/L		FTKA02565	TW07P	
E16R-SDQCR/L-07			20	-	200	11	15	16	R/L				
E16R-SDQCR/L-11	●		20	21.3	200	11	15	16	R/L	DC□T11T3□□	FTGA03508	TW15P	
E20R-SDQCR/L-11			25	24	200	13	18	20	R/L				
E20S-SDQCR/L-11			25	24	250	13	18	20	R/L				

Applicable inserts **B50 ~ B53, B76**

● : Stock item

SDUCR/L

DC□T



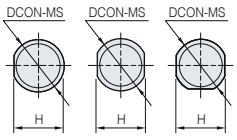
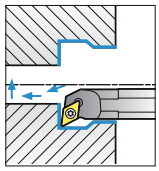


Fig. 1 Fig. 2 Fig. 3



93°
• R type holder

Steel shank type

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
S10M-SDUCR/L-07	●	●	13	16	150	7	9	10	R/L	DC□T0702□□	FTKA02555	TW07P	2
S12M-SDUCR/L-07	●	●	16	20	150	9	11	12	R/L		FTKA02565	TW07P	2
S16R-SDUCR/L-07	●	●	20	25	200	11	14	16	R/L				
S16R-SDUCR/L-11	●	●	20	25	200	11	14	16	R/L	DC□T11T3□□	FTGA03508	TW15P	2
S20S-SDUCR/L-11	●	●	25	32	250	13	18	20	R/L				
S25R-SDUCR/L-11	●	●	32	40	200	17	23	25	R/L		FTGA03510	TW15P	3
S32S-SDUCR/L-11	●	●	40	50	250	22	30	32	R/L				
A10H-SDUCR/L-07	●		13	16	100	7	9.5	10	R/L	DC□T0702□□	FTKA02555	TW07P	1
A12K-SDUCR/L-07	●		16	20	125	9	11.5	12	R/L		FTKA02565	TW07P	1
A16M-SDUCR/L-07	●	●	20	25	150	11	15	16	R/L				
A20Q-SDUCR/L-11	●	●	25	32	180	13	19	20	R/L	DC□T11T3□□	FTGA03508	TW15P	1
A25R-SDUCR/L-11	●		32	40	200	17	24	25	R/L		FTGA03510	TW15P	

Carbide shank type

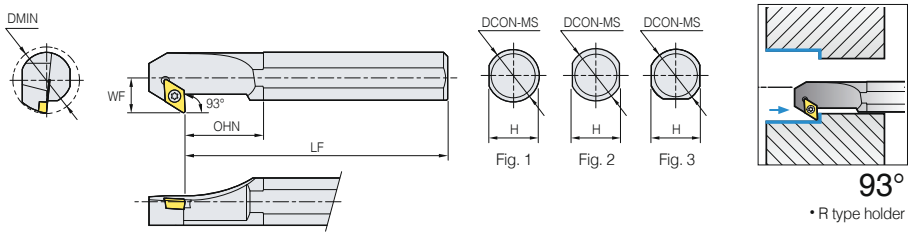
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
C10K-SDUCR/L-07	●		13	9.8	125	7	9	10	R/L	DC□T0702□□	FTKA02555	TW07P	2
C10M-SDUCR/L-07	●		12	9.8	150	7	9	10	R/L				
C12M-SDUCR/L-07	●		16	11	150	9	11	12	R/L		FTKA02565	TW07P	
C12Q-SDUCR/L-07	●		16	11	180	9	11	12	R/L				
C16R-SDUCR/L-07	●		20	-	200	11	15	16	R/L				
C16S-SDUCR/L-07	●		20	-	250	11	15	16	R/L				
C16R-SDUCR/L-11	●		20	-	200	11	15	16	R/L	DC□T11T3□□	FTGA03508	TW15P	
C16S-SDUCR/L-11	●		20	-	250	11	15	16	R/L				
C20R-SDUCR/L-11	●		25	-	200	13	18	20	R/L				
C20S-SDUCR/L-11	●		25	-	250	13	18	20	R/L				
C25T-SDUCR/L-11	●		32	-	300	17	23	25	R/L		FTGA03510	TW15P	
E10K-SDUCR/L-07	●		12	9.8	125	7	9	13	R/L	DC□T0702□□	FTKA02555	TW07P	2
E10M-SDUCR/L-07	●		13	9.8	150	7	9.5	10	R/L				
E12M-SDUCR/L-07	●		16	11	150	9	11.5	12	R/L		FTKA02565	TW07P	
E12Q-SDUCR/L-07			16	11	180	9	11.5	12	R/L				
E16R-SDUCR/L-07	●		20	-	200	11	15	16	R/L				
E16S-SDUCR/L-07			20	-	250	11	15	16	R/L				
E16R-SDUCR/L-11	●		20	-	200	11	15	16	R/L	DC□T11T3□□	FTGA03508	TW15P	
E16S-SDUCR/L-11			20	-	250	11	15	16	R/L				
E20R-SDUCR/L-11	●		25	-	200	13	18	20	R/L				
E20S-SDUCR/L-11	●		25	-	250	13	18	20	R/L				
E25T-SDUCR/L-11			32	-	300	17	23	25	R/L		FTGA03510	TW15P	

Applicable inserts **B50 ~ B53, B76**

● : Stock item

SDZCR/L

DC□T



93°
• R type holder

(mm)

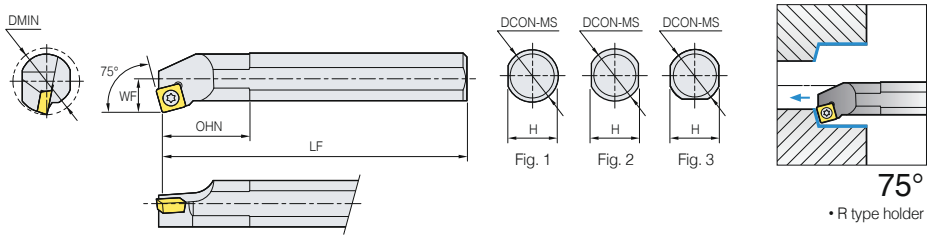
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S16R-SDZCR/L-07	●		20	25	200	11	14	16	R/L	DC□T0702□□	FTKA02565	-	-	TW07P	2
S20S-SDZCR/L-07	●		25	32	250	13	18	20	R/L						
S25R-SDZCR/L-11	●		32	40	200	17	23	25	R/L	DC□T11T3□□	FTGA03510	-	-	TW15P	3
S32S-SDZCR/L-11	●		40	50	250	22	30	32	R/L		FTGA03512	SD32S	SHXN0509F	TW15P, HW35L	
S40T-SDZCR/L-11	●		50	60	300	27	38	40	R/L						
A25R-SDZCR/L-11			32	40	200	17	24	25	R/L		FTGA03510	-	-	TW15P	1
A32S-SDZCR/L-11			40	50	250	22	30	32	R/L		FTGA03512	SD32S	SHXN0509F	TW15P, HW35L	3

Applicable inserts **B50 ~ B53, B76**

● : Stock item

SSKCR/L

SC□T



75°
• R type holder

(mm)

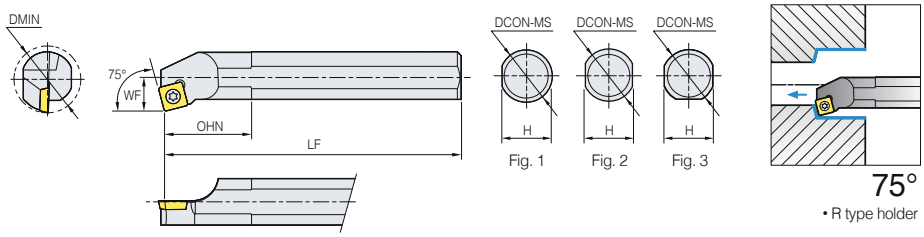
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S12M-SSKCR/L-09	●		16	20	150	9	11	12	R/L	SC□T09T3□□	FTGA03507	-	-	TW15P	2
S16R-SSKCR/L-09	●		20	25	200	11	14	16	R/L		FTGA03508	-	-	TW15P	
S20S-SSKCR/L-09	●		25	32	250	13	18	20	R/L						
S25R-SSKCR/L-12	●		32	40	200	17	23	25	R/L	SC□T1204□□	FTGA0411F	-	-	TW15P	3
S32S-SSKCR/L-12	●		40	50	250	22	30	32	R/L		FTGA0411F	SS42S	SHXN0610F	TW15P, HW40L	
A12K-SSKCR/L-09			16	25	125	9	11.5	12	R/L	SC□T09T3□□	FTGA03507	-	-	TW15P	1
A16M-SSKCR/L-09			20	25	150	11	15	16	R/L		FTGA03508	-	-	TW15P	
A20Q-SSKCR/L-09			32	32	180	13	19	20	R/L						
A25R-SSKCR/L-12			32	40	200	17	24	25	R/L	SC□T1204□□	FTGA0411F	-	-	TW15P	
A32S-SSKCR/L-12			40	42.8	250	22	31	32	R/L		FTGA0411F	SS42S	SFXN0610F	TW15P, HW40L	3

Applicable inserts **B55, B78**

● : Stock item

SSKPR/L

SP□T



75°
• R type holder

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
S12M-SSKPR/L-09	●		16	20	150	9	11	12	R/L	SP□T09T3□□	FTNA0307	TW09P	2
S16N-SSKPR/L-09			20	25	160	11	14	16	R/L				
S16R-SSKPR/L-09	●		20	25	200	11	14	16	R/L				
S20N-SSKPR/L-09			25	32	160	13	18	20	R/L				
S20S-SSKPR/L-09	●		25	35	250	13	18	20	R/L				
A12K-SSKPR/L-09			16	21	125	8	11.5	12	R/L	SP□T09T3□□	FTNA0307	TW09P	1
A16M-SSKPR/L-09			20	30.5	150	10	15	16	R/L				
A20Q-SSKPR/L-09			25	32.5	180	12.5	19	20	R/L				

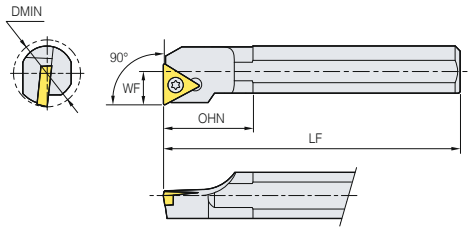
Applicable inserts **B56 ~ B57**

• Use left handed insert for right handed holder

● : Stock item

STFCR/L

TC□T



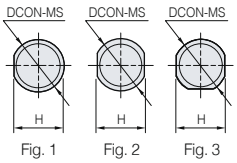
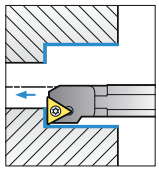


Fig. 1 Fig. 2 Fig. 3



90°

• R type holder

Steel shank type

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S10M-STFCR/L-09	●	●	13	16	150	7	9	10	R/L	TC□T0902□□	FTKA02206	-	-	TW06P	2
S12M-STFCR/L-09	●		16	20	150	9	11	12	R/L						
S12M-STFCR/L-11	●	●	16	20	150	9	11	12	R/L	TC□T1102□□	FTKA02565	-	-	TW07P	2
S16R-STFCR/L-11	●	●	20	25	200	11	14	16	R/L						
S20S-STFCR/L-11	●	●	25	32	250	13	18	20	R/L						
S20S-STFCR/L-16	●		25	32	250	13	18	20	R/L	TC□T16T3□□	FTGA03510	-	-	TW15P	2
S25R-STFCR/L-16	●	●	32	40	200	17	23	25	R/L						3
S32S-STFCR/L-16	●		40	50	250	22	30	32	R/L	TC□T16T3□□	FTGA03512	ST32S	SHXN0509F	TW15P, HW35L	3
S40T-STFCR/L-16	●		50	60	300	27	37	40	R/L						
A10H-STFCR/L-09			13	16	100	7	9.5	10	R/L	TC□T0902□□	FTKA02206	-	-	TW06P	1
A12K-STFCR/L-09			16	20	125	9	11.5	12	R/L						
A12K-STFCR/L-11			16	20	125	9	11.5	12	R/L	TC□T1102□□	FTKA02565	-	-	TW07P	1
A16M-STFCR/L-11	●		20	25	150	11	15	16	R/L						
A20Q-STFCR/L-11			25	32	180	13	19	20	R/L						
A25R-STFCR/L-16			32	40	200	17	24	25	R/L	TC□T16T3□□	FTKA03510	-	-	TW15P	1
A32S-STFCR/L-16			40	50	250	22	30	32	R/L		FTGA03512	ST32S	SHXN0509F	TW15P, HW35L	3

Carbide shank type

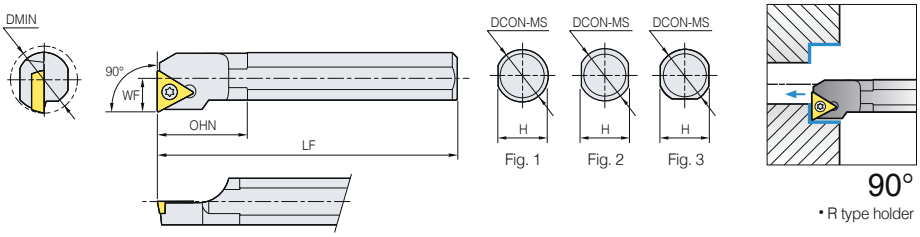
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench	Fig.
C08K-STFCR/L-09	●		10	-	125	5	7	8	R/L	TC□T0902□□	FTKA02206	TW06P	2
C10K-STFCR/L-09	●	●	12	14	125	6	9	10	R/L				
C10K-STFCR/L-11	●		12	12.5	125	6	9	10	R/L	TC□T1102□□	FTKA02565	TW07P	
C12M-STFCR/L-11	●		16	-	150	9	11	12	R/L				
C16R-STFCR/L-11	●		20	-	200	11	15	16	R/L				
C20R-STFCR/L-11	●		25	23	200	13	18	20	R/L				
C20S-STFCR/L-11	●		25	23	250	13	18	20	R/L				
C20R-STFCR/L-16	●		25	-	200	13	18	20	R/L	TC□T16T3□□	FTGA03510	TW15P	
C20S-STFCR/L-16	●		25	-	250	13	18	20	R/L				
E08K-STFCR/L-09	●		10	-	125	5	7	8	R/L	TC□T0902□□	FTKA02206	TW06P	
E10K-STFCR/L-09			12	14	125	6	9	13	R/L				
E10K-STFCR/L-11			12	12.5	125	6	9	13	R/L	TC□T1102□□	FTKA02565	TW07P	2
E12M-STFCR/L-11	●		16	-	150	9	11	12	R/L				
E16R-STFCR/L-11	●		20	-	200	11	15.5	16	R/L				
E20R-STFCR/L-11			25	23	200	13	18	20	R/L				
E20S-STFCR/L-11			25	23	250	13	18	20	R/L				
E20R-STFCR/L-16			25	-	200	13	18	20	R/L	TC□T16T3□□	FTGA03510	TW15P	
E20S-STFCR/L-16	●		25	-	250	13	18	20	R/L				

Applicable inserts **B59 ~ B60, B79**

● : Stock item

STFPR/L

TP□T



Steel shank type

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
S10M-STFPR/L-11	●		13	16	150	7	9	10	R/L	TP□T1103□□	FTNA0306	TW09P	2
S12M-STFPR/L-11	●		16	20	150	9	11	12	R/L		FTNA0307	TW09P	2
S16N-STFPR/L-11	●		20	25	160	11	14	16	R/L				
S16R-STFPR/L-11	●	●	20	25	200	11	14	16	R/L				
S20N-STFPR/L-16	●		25	32	160	13	18	20	R/L	TP□T1604□□	FTNA0408	TW15P	2
S20S-STFPR/L-16	●		25	32	250	13	18	20	R/L				
A10H-STFPR/L-11			13	16	100	7	9.5	10	R/L	TP□T1103□□	FTNA0306	TW09P	1
A12K-STFPR/L-11			16	20	125	9	11.5	12	R/L		FTNA0307	TW09P	1
A16M-STFPR/L-11			20	25	150	11	15	16	R/L				
A20Q-STFPR/L-16			25	32	180	13	19	20	R/L	TP□T1604□□	FTNA0408	TW15P	1

Carbide shank type

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
C08K-STFPR/L-08	●		10	13.7	125	8	7	8	R/L	TP□T0802□□	FTNA02205	TW06P	
C10K-STFPR/L-11	●		12	14	125	6	9	10	R/L	TP□T1103□□	FTNA0305	TW09P	
C10M-STFPR/L-11	●		12	14	150	6	9	10	R/L				
C12M-STFPR/L-11	●		16	-	150	8	11	12	R/L		FTNA0307	TW09P	2
C12Q-STFPR/L-11	●		15	-	180	8	11	12	R/L				
C16R-STFPR/L-11	●		20	-	200	11	15	16	R/L				
C16S-STFPR/L-11	●		20	-	250	10	15	16	R/L				
C20R-STFPR/L-11	●		25	-	200	13	18	20	R/L				
C20S-STFPR/L-11	●		25	-	250	13	18	20	R/L				
C20R-STFPR/L-16	●		25	-	200	13	18	20	R/L	TP□T1604□□	FTNA0408	TW15P	
C20S-STFPR/L-16	●		25	-	250	12.5	18	20	R/L				
C25T-STFPR/L-16	●		32	23.5	300	17	23	25	R/L				
E08K-STFPR/L-08	●		10	13.7	125	5	7	8	R/L	TP□T0802□□	FTNA02205	TW06P	
E10K-STFPR/L-11	●		12	14	125	6	9	13	R/L	TP□T1103□□	FTNA0305	TW09P	
E10M-STFPR/L-11	●		12	14	150	6	9.5	10	R/L				
E12M-STFPR/L-11	●		16	-	150	8	11.5	12	R/L		FTNA0307	TW09P	2
E12Q-STFPR/L-11			16	-	180	8	11.5	12	R/L				
E16R-STFPR/L-11	●		20	-	200	11	15.5	16	R/L				
E16S-STFPR/L-11			20	-	250	10	15	16	R/L				
E20R-STFPR/L-11			25	-	200	13	18	20	R/L				
E20S-STFPR/L-11			25	-	250	13	18	20	R/L				
E20R-STFPR/L-16			25	-	200	13	18	20	R/L	TP□T1604□□	FTNA0408	TW15P	
E20S-STFPR/L-16			25	-	250	12.5	18	20	R/L				
E25T-STFPR/L-16			32	23.5	300	17	23	25	R/L				

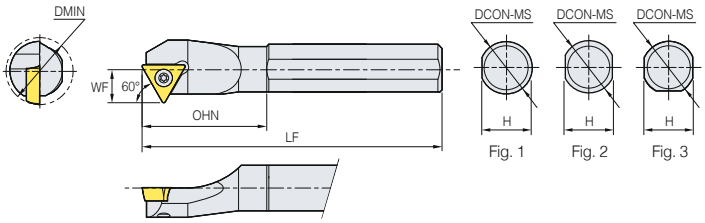
Applicable inserts **B61 ~ B64**

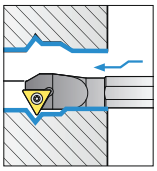
• Use left handed insert for right handed holder

● : Stock item

STWPR/L

TP□□





60°
• R type holder

(mm)

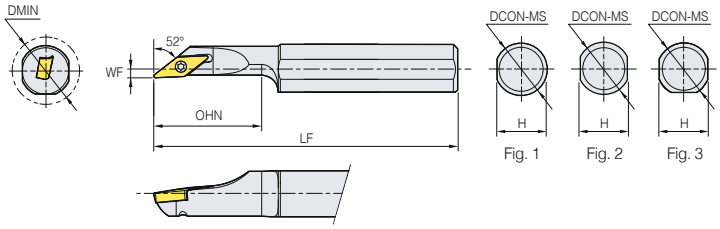
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
S10M-STWPR/L-11	●		12	16	150	6	9	10	R/L	TPGH1102□□	FTNA0305	TW09P	2
S12M-STWPR/L-11	●		16	25	150	9	11	12	R/L	TPGH1103□□ TPMT1103□□	FTNA0306	TW09P	
S16Q-STWPR/L-11	●		20	25	180	11	14	16	R/L				
S20R-STWPR/L-11	●		25	32	200	13	18	20	R/L				

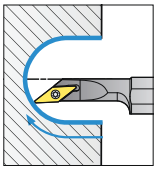
Applicable inserts **B61 ~ B64**

● : Stock item

SVJCR/L

VC□□





52°
• R type holder

(mm)

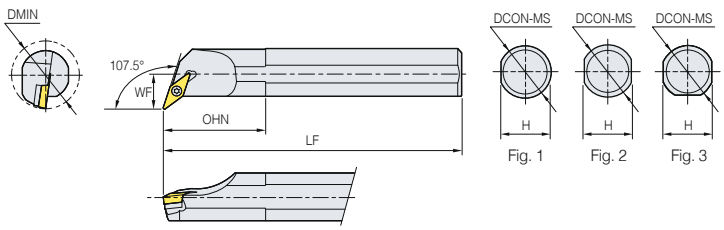
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
S12M-SVJCR/L-08	●		16	30	150	2	11	12	R/L	VCMT0802□□	FTNA0204	TW06P	2
S16Q-SVJCR/L-08	●	●	20	36	180	2	15	16	R/L				

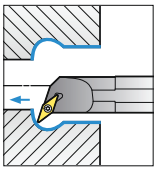
Applicable inserts **B65 ~ B70, B81**

● : Stock item

SVQBR/L

VB□T





107.5°
• R type holder

(mm)

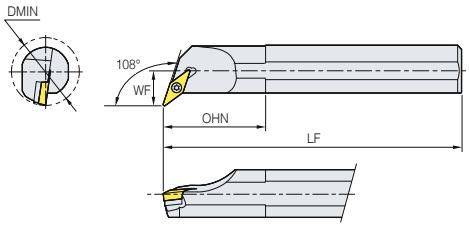
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S32S-SVQBR/L-16	●	●	40	50	250	22	30	32	R/L	VB□T1604□□	FTGA03512	SV32S	SHXN0509F	TW15P HW35L	3
S40T-SVQBR/L-16	●		50	60	300	27	38	40	R/L						
A32S-SVQBR/L-16			40	50	250	22	30	32	R/L						

Applicable inserts **B65 ~ B67, B80**

● : Stock item

SVQCR/L

VC□T



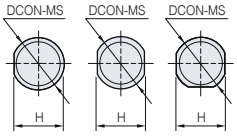
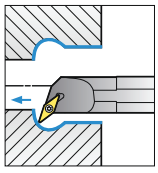


Fig. 1 Fig. 2 Fig. 3



108°

• R type holder

(mm)

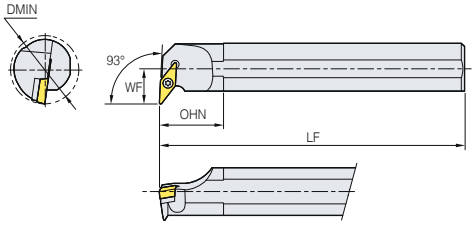
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S16R-SVQCR/L-11	●		20	25	200	11	14	16	R/L	VC□T1103□□	FTKA02565	-	-	TW07P	2
S20S-SVQCR/L-11			25	32	250	13	18	20	R/L						
S25R-SVQCR/L-11			32	40	200	17	23	25	R/L						3
S20S-SVQCR/L-13			25	32	250	13	18	20	R/L	VC□T1303□□	FTKA0307	-	-	TW07P	2
S25R-SVQCR/L-13			32	40	200	17	23	25	R/L						3
S25R-SVQCR/L-16	●	●	32	40	200	17	23	25	R/L	VC□T1604□□	FTGA03510	-	-	TW15P	3
S32S-SVQCR/L-16	●		40	50	250	22	30	32	R/L		FTGA03512	SV32S	SHXN0509F	TW15P HW35L	
S40T-SVQCR/L-16	●		50	60	300	27	38	40	R/L						

Applicable inserts **B65 ~ B67, B81**

●: Stock item

SVUBR/L

VB□T



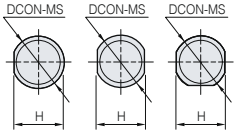
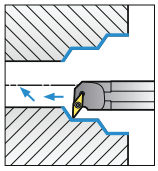


Fig. 1 Fig. 2 Fig. 3



93°

• R type holder

(mm)

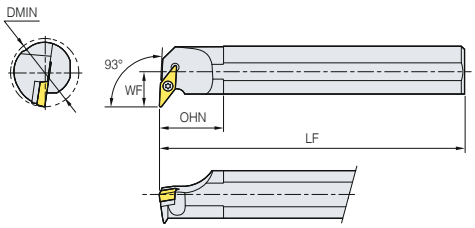
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S32S-SVUBR/L-16	●	●	40	50	250	22	30	32	R/L	VB□T1604□□	FTGA03512	SV32S	SHXN0509F	TW15P HW35L	3
S40T-SVUBR/L-16	●		50	60	300	27	38	40	R/L						
A32S-SVUBR/L-16			40	50	250	22	30	32	R/L						

Applicable inserts **B65 ~ B67, B80**

●: Stock item

SVUCR/L

VC□T



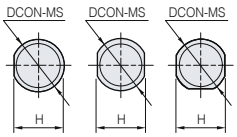
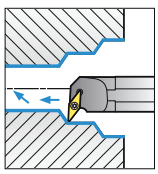


Fig. 1 Fig. 2 Fig. 3



93°

• R type holder

(mm)

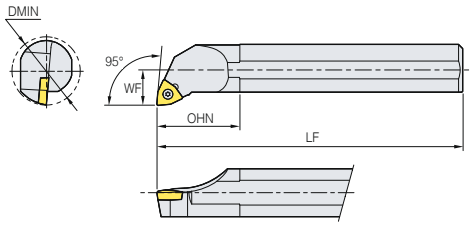
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench	Fig.
S16R-SVUCR/L-11	●		20	25	200	11	14	16	R/L	VC□T1103□□	FTKA02565	-	-	TW07P	2
S20S-SVUCR/L-11	●		25	32	250	13	18	20	R/L						
S25T-SVUCR/L-11			32	40	300	17	23	25	R/L						3
S20S-SVUCR/L-13	●		28	32	250	16	18	20	R/L	VC□T1303□□	FTKA0307	-	-	TW09P	2
S25R-SVUCR/L-13			32	40	200	17	23	25	R/L						3
S25R-SVUCR/L-16	●	●	32	40	200	17	23	25	R/L	VC□T1604□□	FTGA03510	-	-	TW15P	3
S32S-SVUCR/L-16	●		40	50	250	22	30	32	R/L		FTGA03512	SV32S	SHXN0509F	TW15P HW35L	
S40T-SVUCR/L-16	●	●	50	60	300	27	38	40	R/L						

Applicable inserts **B65 ~ B67, B81**

●: Stock item

SWLCR/L

WC□T



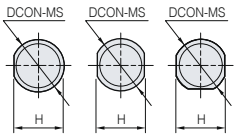
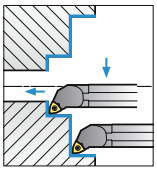


Fig. 1 Fig. 2 Fig. 3



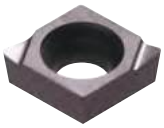
95°
• R type holder

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
S25R-SWLCR/L-08			32	40	200	17	23	25	R/L	WC□T0804□□	FTGA0411F	TW15P	3
S32S-SWLCR/L-08			40	50	250	22	30	32	R/L				
A25R-SWLCR/L-08			32	40	200	17	24	25	R/L	WC□T0804□□	FTGA0411F	TW15P	1
A32S-SWLCR/L-08			40	50	250	22	30	32	R/L				3

● : Stock item

SCLCR/L



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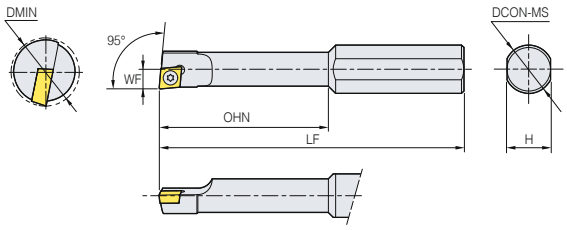
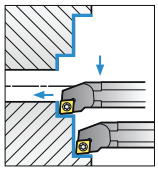




95°
• R type holder

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench
S10H-SCLCR/L-0305	●		5	25	100	2.5	9	10	R/L	CCET0301□□	FTNA01633	TW06P
S10H-SCLCR/L-0306	●		6	25	100	3	9	10	R/L			
S10J-SCLCR/L-0407	●		7	30	110	3.5	9	10	R/L	CCET0401□□	FTNA0238	TW06P
S10J-SCLCR/L-0408	●		8	30	110	4	9	10	R/L			

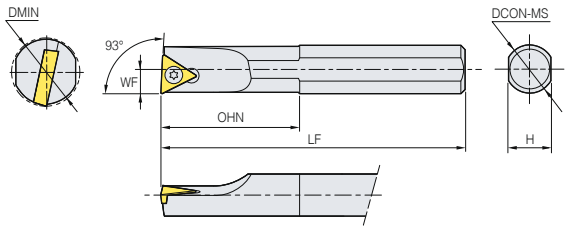
Applicable inserts **B44 ~ B48, B75**

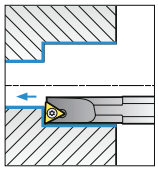
- Use left handed insert for right handed holder
- It is not an ISO type holder, and the last two digits of the model number are not related to the tool specifications.

● : Stock item

STUBR/L

TB□□





93°
• R type holder

Steel shank type

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench
S08K-STUBR/L-06	●		8	30	125	4	7	8	R/L	TB□□0601□□R/L	FTNA0204	TW06P
A08F-STUBR/L-06			8	30	80	4	7.5	8	R/L			

Carbide shank type

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench
C08K-STUBR/L-06	●	●	8	-	125	4	7	8	R/L	TB□T0601□□	FTNA0204	TW06P
C10K-STUBR/L-06	●		12	-	125	6	9	10	R/L			
E08K-STUBR/L-06	●		10	-	125	5	7	8	R/L	TB□T0601□□	FTNA0204	TW06P
E10K-STUBR/L-06	●		12	-	125	6	9	13	R/L			

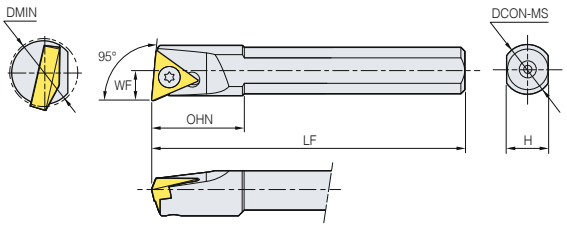
Applicable inserts **B58**

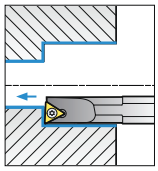
- Use left handed insert for right handed holder

● : Stock item

STLBR/L

TB□□





95°
• R type holder

Steel shank type

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench
S06H-STLBR/L-06-SP			8	12	100	3.8	5	6	R/L	TB□□0601□□R/L	FTNA0204	TW06P

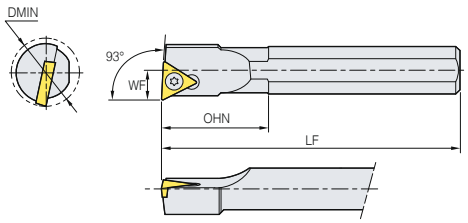
Applicable inserts **B58**

- Use left handed insert for right handed holder

● : Stock item

STUPR/L

TP□□



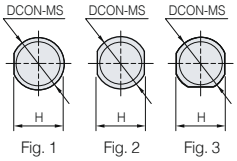
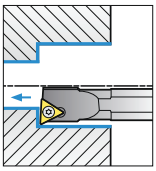


Fig. 1 Fig. 2 Fig. 3



93°

• R type holder

Steel shank type

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
S08K-STUPR/L-08	●		10	18	125	5	7	8	R/L	TP□□0802□□R/L	FTNA02205	TW06P	2
A08F-STUPR/L-08			10	18	80	4	7.5	8	R/L				

Carbide shank type

(mm)

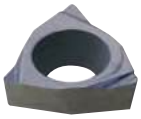
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
C08K-STUPR/L-08	●		10	-	125	5	7	8	R/L	TP□T0802□□	FTNA02205	TW06P	2
C10K-STUPR/L-11	●		12	-	125	6	9	10	R/L	TP□T1103□□	FTNA0305	TW09P	
C10M-STUPR/L-11	●		12	-	150	6	9	10	R/L				
C12M-STUPR/L-11	●		16	-	150	9	11	12	R/L		FTNA0307	TW09P	
C12Q-STUPR/L-11	●		15	-	180	8	11	12	R/L				
C16R-STUPR/L-11	●		20	-	200	11	15	16	R/L				
C16S-STUPR/L-11	●		20	-	250	10	15	16	R/L				
C20R-STUPR/L-11	●		25	-	200	13	18	20	R/L				
C20S-STUPR/L-11	●		25	-	250	13	18	20	R/L				
C20R-STUPR/L-16	●		25	-	200	13	18	20	R/L	TP□T1604□□	FTNA0408	TW15P	
C20S-STUPR/L-16			25	-	250	13	18	20	R/L				
C25T-STUPR/L-16			32	-	300	17	23	25	R/L				
E08K-STUPR/L-08	●		10	-	125	5	7	8	R/L	TP□T0802□□	FTNA02205	TW06P	2
E10K-STUPR/L-11			12	-	125	6	9	13	R/L	TP□T1103□□	FTNA0305	TW09P	
E10M-STUPR/L-11	●		12	-	150	6	9	10	R/L				
E12M-STUPR/L-11	●		15	-	150	8	11	12	R/L		FTNA0307	TW09P	
E12Q-STUPR/L-11			15	-	180	8	11	12	R/L				
E16R-STUPR/L-11	●		20	-	200	11	15	16	R/L				
E16S-STUPR/L-11			20	-	250	10	15	16	R/L				
E20R-STUPR/L-11			25	-	200	13	18	20	R/L				
E20S-STUPR/L-11			25	-	250	13	18	20	R/L				
E20R-STUPR/L-16			25	-	200	13	18	20	R/L	TP□T1604□□	FTNA0408	TW15P	
E20S-STUPR/L-16			25	-	250	13	18	20	R/L				
E25T-STUPR/L-16			32	-	300	17	23	25	R/L				

Applicable inserts **B61 ~ B64**

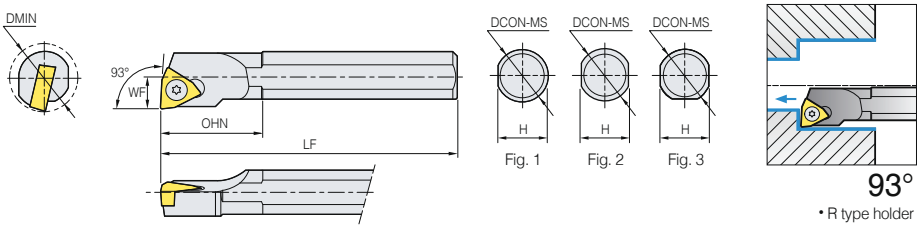
• Use left handed insert for right handed holder

● : Stock item

SWUBR/L



WB□T



Steel shank type

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
S05H-SWUBR/L-02	●		5.5	-	100	2.75	4.5	5	R/L	WBGT0201□□R/L	FTNA0203	TW06P	2
S08K-SWUBR/L-02	●		8	30	125	4	7	8	R/L		FTNA02033		
S08K-SWUBR/L-S3			10	16	125	5	7	8	R/L	WBGTS302□□R/L	FTNA02205	TW06P	
A08F-SWUBR/L-02			8	12	80	4	7.6	8	R/L	WBGT0201□□R/L	FTNA0203	TW06P	
A08F-SWUBR/L-S3			10	16	80	5	7.5	8	R/L	WBGTS302□□R/L	FTNA02205	TW06P	

Carbide shank type

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON -MS	HAND	Applicable insert	Screw	Wrench	Fig.
C05H-SWUBR/L-02	●		5.5	-	100	2.75	4.5	5	R/L	WB□T0201□□	FTNA0203	TW06P	1
C06H-SWUBR/L-02	●		7	-	125	3.5	5.4	6	R/L				
C08K-SWUBR/L-02	●		8	-	125	4	7	8	R/L		FTNA02033	TW06P	2
C08K-SWUBR/L-S3	●		10	-	125	4	7	8	R/L	WB□TS301□□	FTNA02205	TW06P	
E06H-SWUBR/L-02			7	-	100	3.5	5.4	6	R/L	WB□T0201□□	FTNA0203	TW06P	1
E08K-SWUBR/L-02	●		8	-	125	4	7.5	8	R/L		FTNA02033	TW06P	2
E08K-SWUBR/L-S3			10	-	125	5	7	8	R/L	WB□TS301□□	FTNA02205	TW06P	

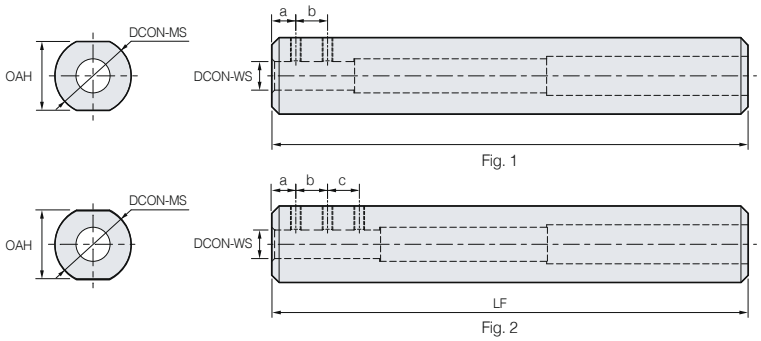
Applicable inserts **B72**

• Use left handed insert for right handed holder

●: Stock item

Sleeve

SL (Sleeve)



(mm)

Designation	Stock	DCON-MS	a	b	c	DCON-WS	OAH	LF	Screw	Wrench	Fig.
SL1603	●	16	5	-	-	3	14	100	M3	HW15L	1
SL1604	●	16	5	6	-	4	14	100	M4	HW20L	
SL1605	●	16	5	8	-	5	14	100	M4	HW20L	
SL1606	●	16	5	6	6	6	14	100	M4	HW20L	2
SL1607	●	16	5	6	8	7	14	100	M4	HW20L	
SL2008	●	20	5	10	10	8	18	100	M4	HW20L	2
SL2010	●	20	5	10	10	10	18	100	M5	HW20L	

※ Fine tolerance and surface roughness

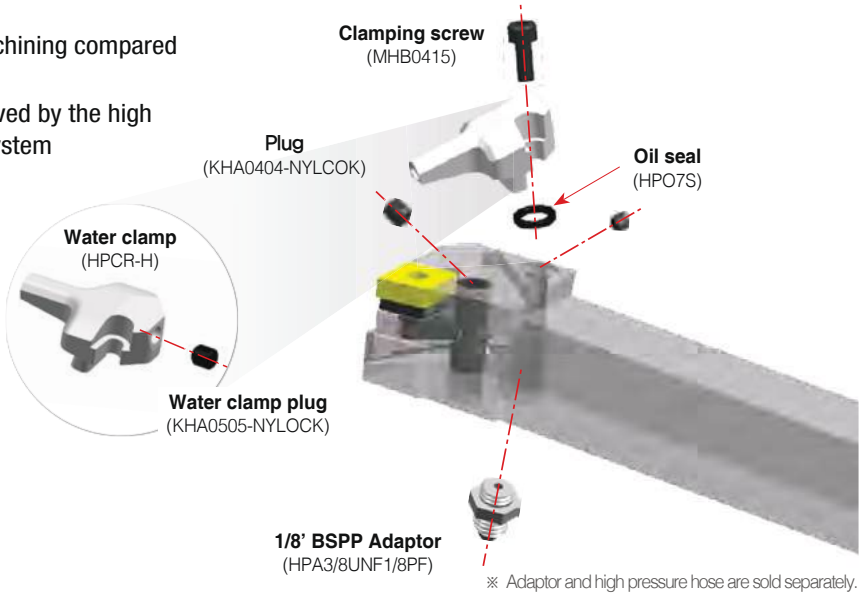
●: Stock item

KORLOY High Pressure Coolant

KHP Coolant

ISO TURNING HOLDER

- 300% increased productivity on Inconel machining compared to low pressure coolant system
- Cooling, tool life, and chip control are improved by the high volume coolant multi-directional injection system



※ Adaptor and high pressure hose are sold separately.

Features

- The optimal distance between the insert and the jet orifice and the ideal place of the jet orifice
- Minimized coolant pressure loss due to streamlined design of internal path
- Easy to clamp an insert with the sliding clamp system

The original position of water clamp

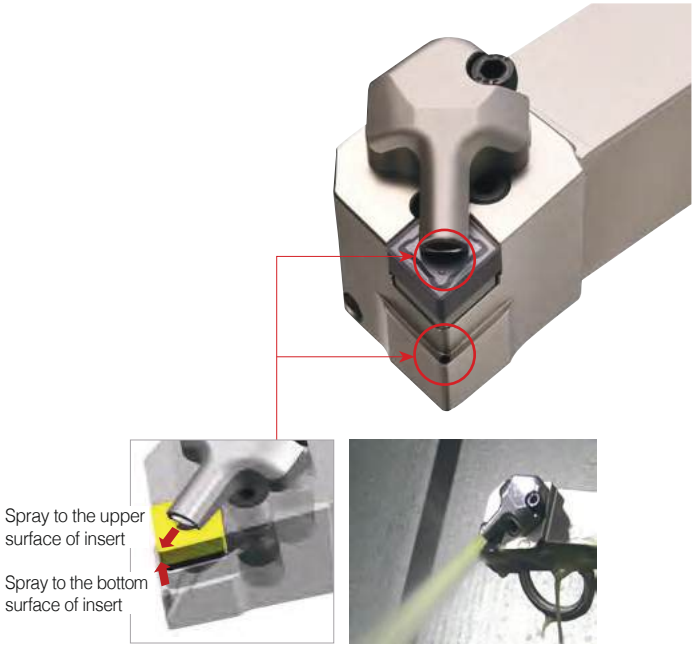
The position of placing insert

Optimal position and distance of spraying

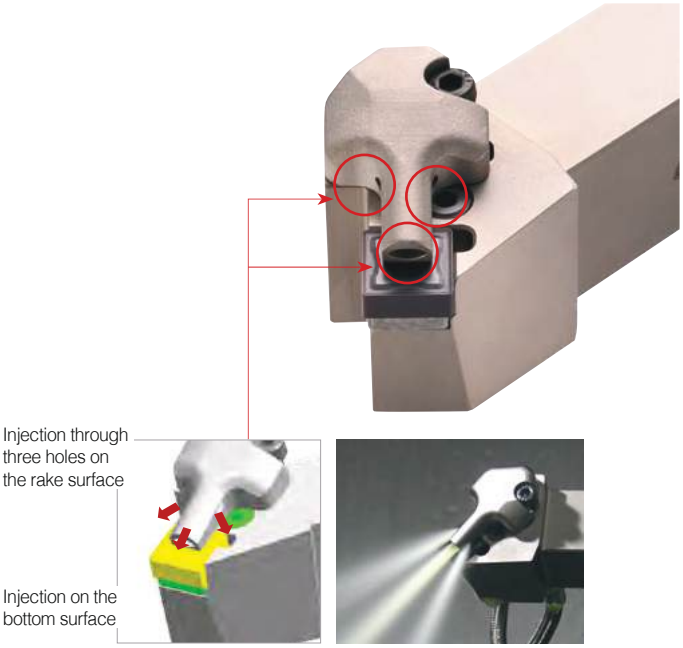
Oval direct spray

Max 300 bar		
Workpiece	The minimum pressure	The maximum pressure
P	50	300
M	70	
K	60	
N	50	
S	70	

Water clamp with a hole



Water clamp with three holes

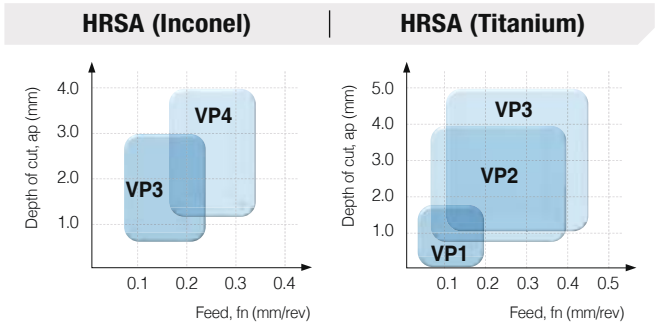


※ Clamp is sold seperately

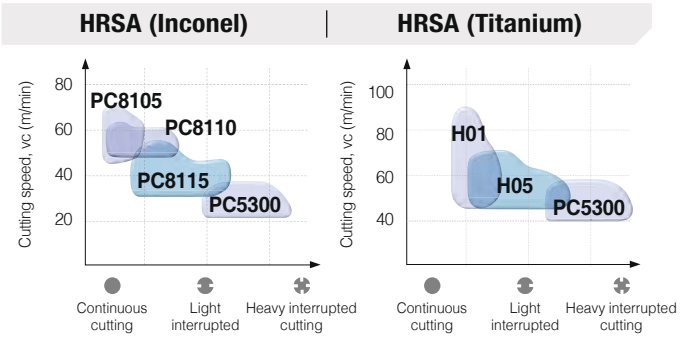
How to use the water clamp

Unscrew the clamping screw | Move the water clamp to the edge of the holderscrew | Put an insert to the tip and seat the clamping screw | Move the water clamp back to its original position | Screw the clamping screw

Application range



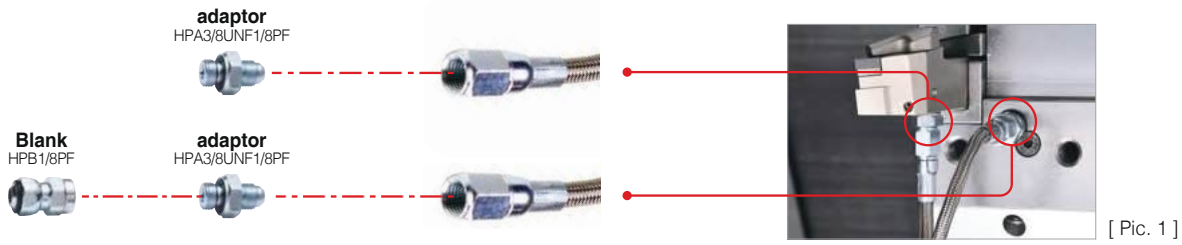
Grade Line-up



How to clamp the KHP

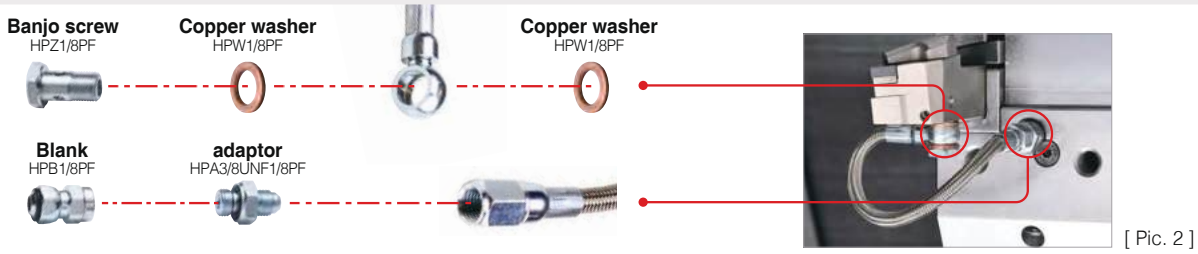
- 3 types of installation systems makes clamping easy
- The banjo type hose provides wider area for machining than other types

Straight to straight (S-S)



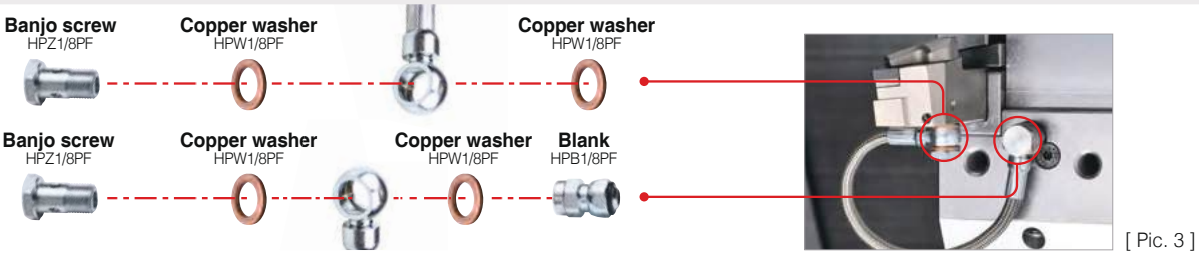
[Pic. 1]

Straight to banjo (S-B)



[Pic. 2]

Banjo to banjo (B-B)



[Pic. 3]

※ Blank including a fixed oil seal provides easy clamping

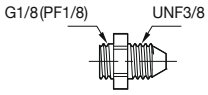
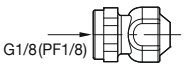
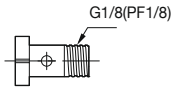
※ Banjo screws provide easy clamping and clamping a holder to the turning machine with various types of blanks

Components of KHP Coolant

- The components of high pressure coolant are sold separately
- Various components are available according to different machining sites and uses machining with high pressure coolant

Designation	Shape	Hose length	High pressure hose	Blank	Adaptor	Banjo screw	Copper washer	Pic.
HPH3/8UNF-200-SET		200mm	1 EA	1 EA	2 EA	-	-	1
HPH3/8UNF-250-SET		250mm						
HPH3/8UNF1/8PF-200-SET		200mm			1 EA	1 EA	3 EA	2
HPH3/8UNF1/8PF-250-SET		250mm						
HPH1/8PF-200-SET		200mm			-	2 EA	5 EA	3
HPH1/8PF-250-SET		250mm						

KHP Coolant Parts

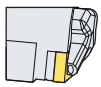
Division	Designation	Shape	
Adaptor	HPA3/8UNF1/8PF		
Blank	HPB1/8PF		
Banjo screw	HPZ1/8PF		
Copper washer	HPW1/8PF		

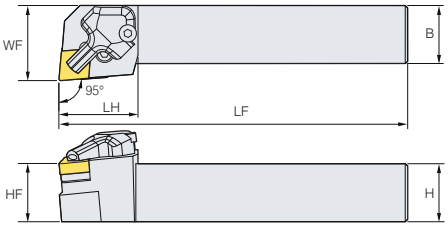
KHP Coolant High pressure hose

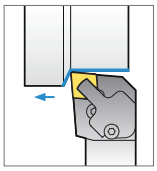
High pressure hose shape		Length	S	B
Straight to straight (HPH3/8UNF)		200mm	UNF3/8	-
		250mm		
Straight to banjo (HPH3/8UNF1/8PF)		200mm	UNF3/8	Internal Ø10
		250mm		
Banjo to banjo (HPH1/8PF)		200mm	-	Internal Ø10
		250mm		

PCLNR/L

CN□□







95°

• R type holder

(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert
PCLNR/L	2525-M12-KHP	●	●	34	150	32	25	25	25	R/L	CN□□1204□□
	3232-P12-KHP			34	170	40	32	32	32	R/L	

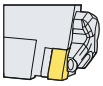
Part		Lever	Screw	Shim	Ship pin	Shim Pin Punch	Clamp	Clamping screw	Oil seal	Plug	Wrench
PCLNR/L	2525-M12-KHP 3232-P12-KHP	LV4N	VHX0820N	SC42N	SP4N	LSPS4	HPCR/L-H	MHB0415	HPO7S	KHA0404-NYLOCK	HW20L HW30L

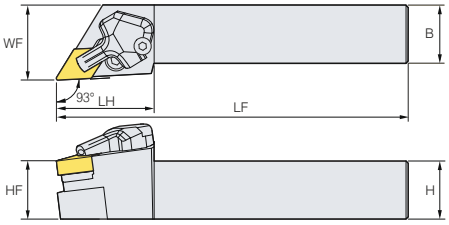
Applicable inserts **B5 ~ B12**

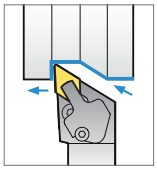
● : Stock item

PDJNR/L

DN□□







93°

• R type holder

(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert
PDJNR/L	2525-M11-KHP			42	150	32.25	25	25	25	R/L	DN□□1104□□
	2525-M1504-KHP	●	●	93	25	25	150	25	32.25	R/L	DN□□1504□□
	2525-M1506-KHP	●	●	42	150	32.25	25	25	25	R/L	DN□□1506□□

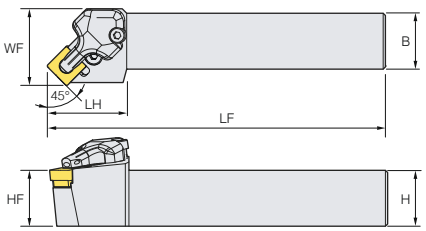
Part		Lever	Screw	Shim	Ship pin	Shim Pin Punch	Clamp	Clamping screw	Oil seal	Plug	Wrench
PDJNR/L	2525-M11-KHP	LV3AN	VHX0617N	SD32N	SP3	LSPS3	HPCR/L-H	MHB0415	HPO7S	KHA0404-NYLOCK	HW20L, HW25L, HW30L
	2525-M1504-KHP	LV4BN	VHX0821N	SD43N	SP4N	LSPS4	HPCR/L-H	MHB0415	HPO7S	KHA0404-NYLOCK	HW20L, HW30L
	2525-M1506-KHP	LV4BN	VHX0821N	SD42N	SP4N	LSPS4	HPCR/L-H	MHB0415	HPO7S	KHA0404-NYLOCK	HW20L, HW30L

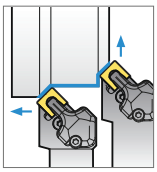
Applicable inserts **B13 ~ B18**

● : Stock item

PSSNR/L

SN□□





45°

• R type holder

(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert
PSSNR/L	2525-M12-KHP	●	●	35.5	150	34.25	25	25	25	R/L	SN□□1204□□

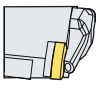
Part		Lever	Screw	Shim	Ship pin	Shim Pin Punch	Clamp	Clamping screw	Oil seal	Plug	Wrench
PSSNR/L	2525-M12-KHP	LV4N	VHX0821	SS42N	SP4N	LSPS4	HPCR/L-3H	MHB0415	HPO7S	KHA0404-NYLOCK	HW20L, HW30L

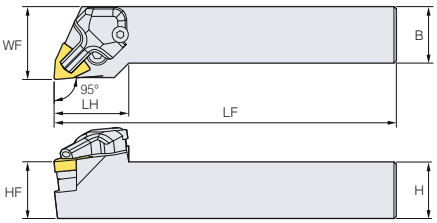
Applicable inserts **B20 ~ B28**

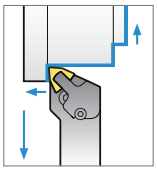
● : Stock item

PWLNR/L

WN□□







95°

• R type holder

(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert
PWLNR/L	2525-M08-KHP	●	●	33	150	32.25	25	25	25	R/L	WN□□0804□□
	3232-P08-KHP			33	170	39.25	32	32	32	R/L	

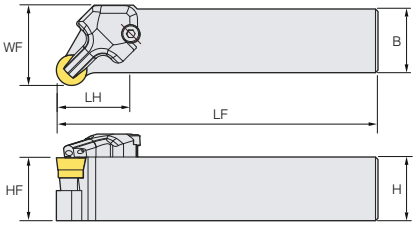
Part		Lever	Screw	Shim	Ship pin	Shim Pin Punch	Clamp	Clamping screw	Oil seal	Plug	Wrench
PWLNR/L	2525-M08-KHP	LV4N	VHX0820N	SW42N	SP4N	LSPS4	HPCR/L-H	MHB0415	HPO7S	KHA0404-NYLOCK	HW20L HW30L
	3232-P08-KHP										

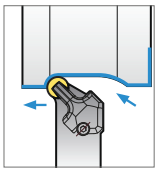
Applicable inserts **B39 ~ B46**

● : Stock item

SRGCR/L

RCGT





• R type holder

(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert
SRGCR/L	2525-M12-KHP	●	●	33	150	31.5	25	25	25	R/L	RCGT1204M0

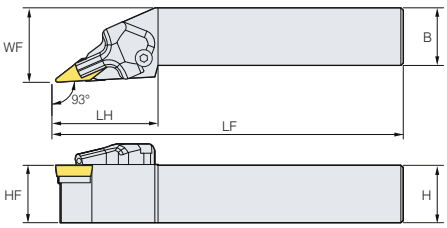
Part		Screw	Shim	Shim Screw	Clamp	Clamping screw	Oil seal	Wrench
SRGCR/L	2525-M12-KHP	FTGA03512	SR12S	SHXN0509F	HPCR/L-3H	MHB0415	HPO7S	HW15P, HW30L, HW35L

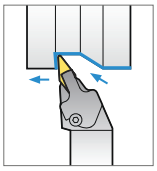
Applicable inserts **B54, B77**

● : Stock item

SVJBR/L

VB□□





93°

• R type holder

(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert
SVJBR/L	2525-M16-KHP	●	●	46.19	150	32.38	25	25	25	R/L	VB□□1604□□

Part		Screw	Shim	Shim Screw	Clamp	Clamping screw	Oil seal	Wrench
SVJBR/L	2525-M16-KHP	FTGA03512	SV32S	SHXN0509F	HPCR/L-H	MHB0415	HPO7S	HW15P, HW30L, HW35L

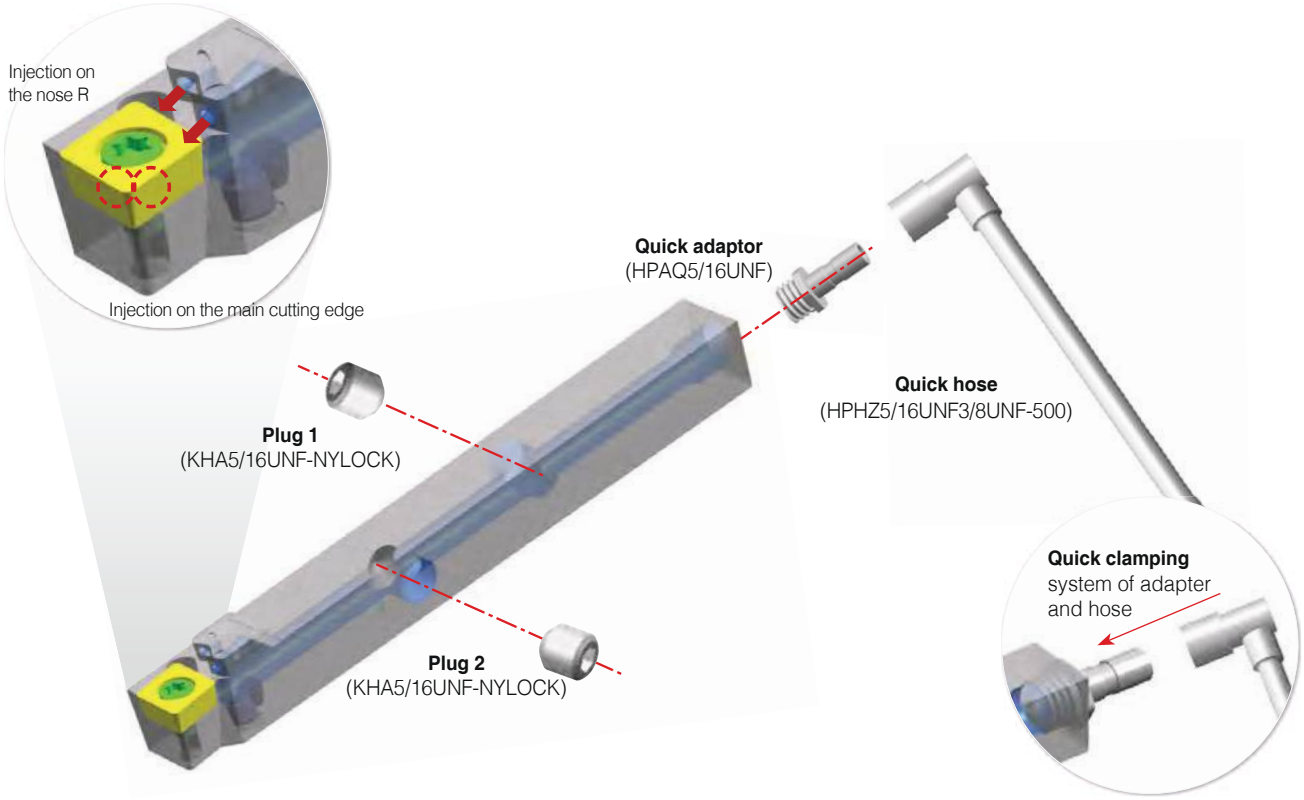
Applicable inserts **B65 ~ B67, B80**

● : Stock item

Auto Tools (KHP)

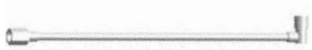
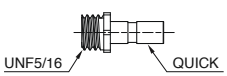
- High-pressure coolant holder for high productivity in precision machining on automatic lathes
- Cooling and chip control improved by concentrically injecting coolant through two holes to the main cutting edge and nose R
- Two holes with different injection angles increase chip control
- Convenient use due to the easy clamping system of the quick hose adapter and quick hose

Structure of holder



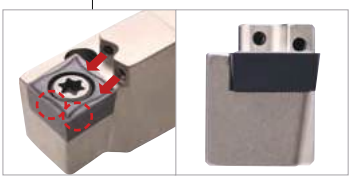
※ Quick adapter and quick hose are sold separately

Parts

Shape		Configuration	Length	Q clamping dimensions	S clamping dimensions
Quick to straight	HPHZ5/16UNF3/8UNF-500 	Q S	500mm	UNF5/16	-
Quick adaptor	HPAQ5/16UNF		18.5mm	UNF5/16	

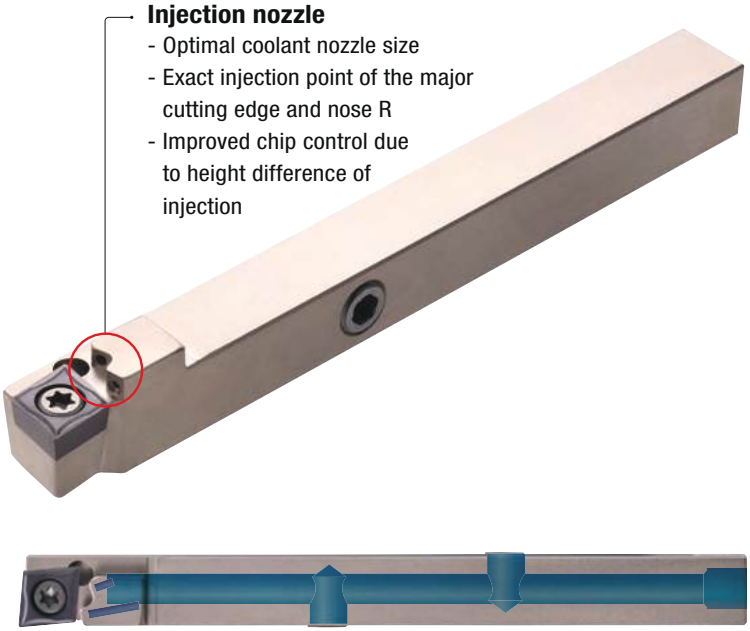
Features

2 pointed injection with different angles



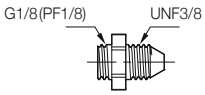
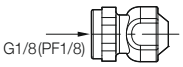
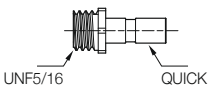
Injection nozzle

- Optimal coolant nozzle size
- Exact injection point of the major cutting edge and nose R
- Improved chip control due to height difference of injection



Max 300 bar		
Workpiece	The minimum pressure	The maximum pressure
P	100	300
M	120	
K	110	
N	100	
S	120	

Parts

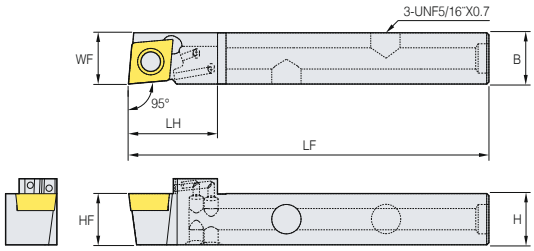
Division	Designation	Shape	
Adaptor	HPA3/8UNF1/8PF		
Blank	HPB1/8PF		
Quick adaptor	HPAQ5/16UNF		

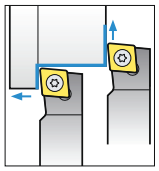
High pressure hose

Shape		length	Q clamping dimensions	S clamping dimensions
Quick to straight (HPHZ5/16UNF3/8UNF-500)		500mm	UNF5/16	-

SCLCR/L

CC□T





95°

• R type holder

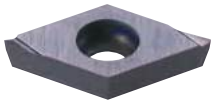
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Plug	Wrench
SCLCR/L	1212-X09A-KHP	●	●	21	120	12	12	12	12	R/L	CC□T09T3□□	FTKA0410	KHA0404-NYLOCK	TW15P

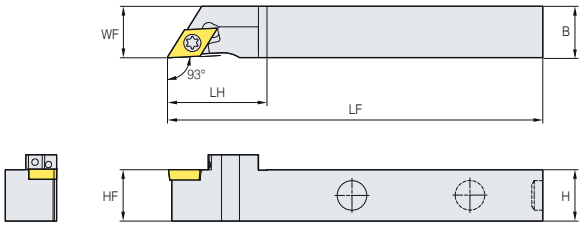
Applicable inserts **B44 ~ B48, B75**

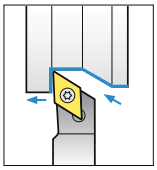
● : Stock item

SDJCR/L



DC□T





93°

• R type holder

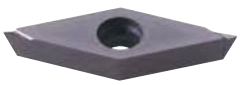
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Plug	Wrench
SDJCR/L	1212-X07A-KHP	●	●	21	120	12	12	12	12	R/L	DC□T0702□□	FTKA02565	KHA0404-NYLOCK	TW07P
	1212-X11A-KHP	●	●	21	120	14	12	12	12	R/L	DC□T11T3□□	FTKA0408	KHA0404-NYLOCK	TW15P

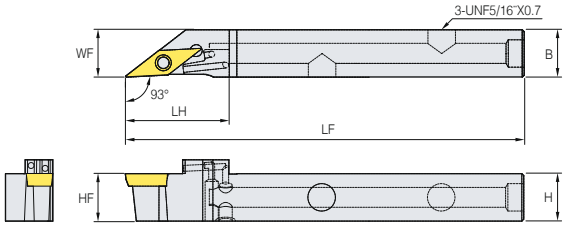
Applicable inserts **B50 ~ B53, B76**

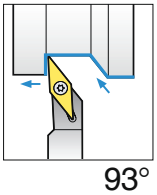
● : Stock item

SVJCR/L



VC□□





93°

• R type holder

(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Plug	Wrench
SVJCR/L	1212-X11A-KHP	●	●	26	120	12	12	12	12	R/L	VC□T1103□□	FTKA02565	KHA0404-NYLOCK	TW07P
	1212-X12A-KHP	●	●	26	120	12	12	12	12	R/L	VC□□1203□□	FTKA02565	KHA0404-NYLOCK	TW07P

Applicable inserts **B68 ~ B70, B81**

● : Stock item

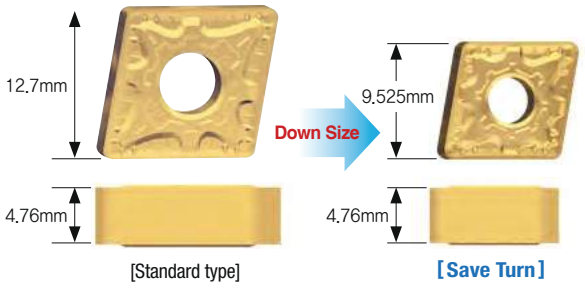
Economical small insert with powerful cutting performance

Save Turn

- Strongly recommended turning insert for machining smaller diameter than Ø100
- Small but powerful and economical insert which performs the same like standard-sized inserts under the depth of cut of 3.0 mm

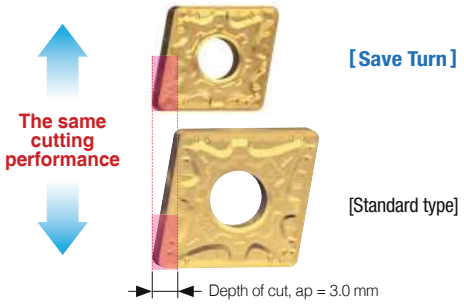
Features

Comparison of insert sizes



▶ Optimized size of the same performance like the standard type

Comparison of cutting performance

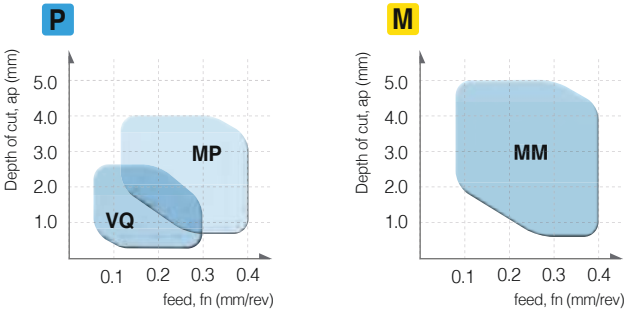


▶ Performs the same like standard type inserts under the depth of cut of 3.0 mm

Features of chip breaker

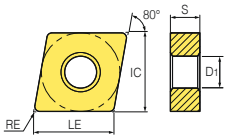
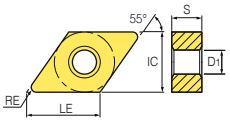
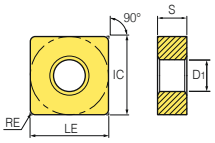
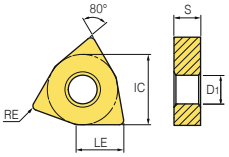
Insert shape	Cutting edge	Features
VQ		• For finishing steel • Efficient chip breaking and low cutting resistance • Various application available at low depth of cut • Recommended depth of cut: 0.5~2.5 mm
MP		• For medium cutting of steel • 4dots for improved chip control in medium cutting to finishing • Stable chip evacuation at high depth of cut • Stable tool life due to lower cutting loads at high feed • Recommended depth of cut: 0.5~4.0 mm
MM		• For medium cutting of stainless steel • Limits plastic deformation caused by heat • Stable tool life thanks to the balanced cutting performance and toughness • Stable chip flow at high speeds and feeds • Recommended depth of cut: 0.5~5.0 mm

Application area of chip breaker



V Q : Depth of cut, ap = 0.5~2.5mm /feed, fn = 0.05~0.30mm/rev
M P : Depth of cut, ap = 0.5~4.0mm /feed, fn = 0.15~0.40mm/rev
MM : Depth of cut, ap = 0.5~5.0mm /feed, fn = 0.10~0.40mm/rev

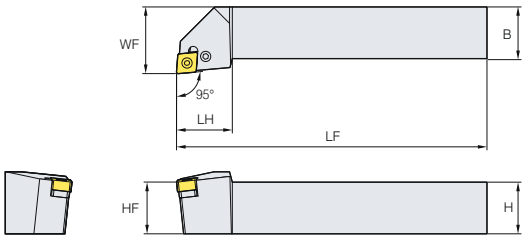
Applicable insert

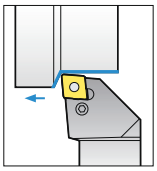
Type	Inserts	Designation	Coated						Dimensions (mm)						Cutting condition		Configuration
			NC3215	NC3225	NC5330	NC6310	NC9125	NC9135 PC9030	IC	RE	S	LE	D1	HAND	ap (mm)	fn (mm/rev)	
C type	CNMG-VQ	CNMG 090408-VQ		●					9.525	0.8	3.18	9.672	3.81	N	0.50~2.50	0.08~0.30	
		CNMG 090412-VQ							9.525	1.2	3.18	9.672	3.81	N	0.50~2.50	0.10~0.30	
	CNMG-MP	CNMG 090404-MP							9.525	0.4	3.18	9.672	3.81	N	0.50~4.00	0.10~0.40	
		090408-MP							9.525	0.8	3.18	9.672	3.81	N	0.50~4.00	0.15~0.40	
		090412-MP							9.525	1.2	4.76	9.672	3.81	N	0.50~4.00	0.15~0.45	
	CNMG-MM	CNMG 090404-MM							9.525	0.4	4.76	9.672	3.81	N	0.50~5.00	0.08~0.35	
		090408-MM							9.525	0.8	3.18	9.672	3.81	N	0.50~5.00	0.10~0.40	
		090412-MM							9.525	1.2	4.76	9.672	3.81	N	0.50~5.00	0.12~0.45	
D type	DNMG-VQ	DNMG 110508-VQ							9.525	0.8	5.56	11.627	3.81	N	0.50~2.50	0.08~0.30	
		110512-VQ							9.525	1.2	5.56	11.627	3.81	N	0.50~2.50	0.10~0.30	
	DNMG-MP	DNMG 110504-MP							9.525	0.4	5.56	11.627	3.81	N	0.50~4.00	0.10~0.40	
		110508-MP							9.525	0.8	5.56	11.627	3.81	N	0.50~4.00	0.15~0.40	
		110512-MP							9.525	1.2	5.56	11.627	3.81	N	0.50~4.00	0.15~0.45	
	DNMG-MM	DNMG 110504-MM							9.525	0.4	5.56	11.627	3.81	N	0.50~5.00	0.08~0.35	
		110508-MM							9.525	0.8	5.56	11.627	3.81	N	0.50~5.00	0.10~0.40	
		110512-MM							9.525	1.2	5.56	11.627	3.81	N	0.50~5.00	0.12~0.45	
S type	SNMG-VQ	SNMG 090408-VQ		●					9.525	0.8	3.18	9.525	3.81	N	0.50~2.50	0.08~0.30	
		090412-VQ							9.525	1.2	3.18	9.525	3.81	N	0.50~2.50	0.10~0.30	
	SNMG-MP	SNMG 090404-MP							9.525	0.4	3.18	9.525	3.81	N	0.50~4.00	0.10~0.40	
		090408-MP							9.525	0.8	3.18	9.525	3.81	N	0.50~4.00	0.15~0.40	
		090412-MP							9.525	1.2	3.18	9.525	3.81	N	0.50~4.00	0.15~0.45	
	SNMG-MM	SNMG 090404-MM							9.525	0.4	4.76	9.525	3.81	N	0.50~5.00	0.08~0.35	
		090408-MM							9.525	0.8	4.76	9.525	3.81	N	0.50~5.00	0.10~0.40	
		090412-MM							9.525	1.2	4.76	9.525	3.81	N	0.50~5.00	0.12~0.45	
W type	WNMG-VQ	WNMG 060404-VQ							9.525	0.4	4.76	6.515	3.81	N	0.30~2.00	0.06~0.30	
		060408-VQ							9.525	0.8	4.76	6.515	3.81	N	0.50~2.00	0.08~0.30	
		060412-VQ							9.525	1.2	4.76	6.515	3.81	N	0.50~2.00	0.10~0.30	
	WNMG-MP	WNMG 060404-MP	●	●	●		●		9.525	0.4	4.76	6.515	3.81	N	0.50~3.50	0.10~0.40	
		060408-MP	●	●	●	●	●		9.525	0.8	4.76	6.515	3.81	N	0.50~3.50	0.15~0.40	
		060412-MP							9.525	1.2	4.76	6.515	3.81	N	0.50~3.50	0.15~0.45	
	WNMG-MM	WNMG 060404-MM							9.525	0.4	4.76	6.515	3.81	N	0.50~4.00	0.08~0.35	
		060408-MM					●	● ●	9.525	0.8	4.76	6.515	3.81	N	0.50~4.00	0.10~0.40	
		060412-MM					●		9.525	1.2	4.76	6.515	3.81	N	0.50~4.00	0.12~0.45	

● : Stock item

PCLNR/L

CN□□





95°
• R type holder

(mm)

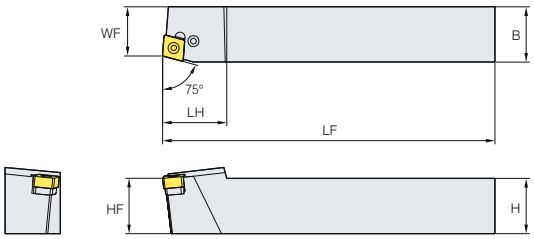
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PCLNR/L	1616-H09-4N		●	20	100	20	16	16	16	R/L	CN□□ 0904□□	LV3N	VHX0617N	SC32N	SP3	HW25L	LSPS3
	2020-K09-4N	●	●	25	125	25	20	20	20	R/L							
	2525-M09-4N	●	●	27	150	32	25	25	25	R/L							

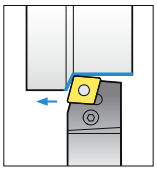
Applicable inserts **B154**

● : Stock item

PCBNR/L

CN□□





75°
• R type holder

(mm)

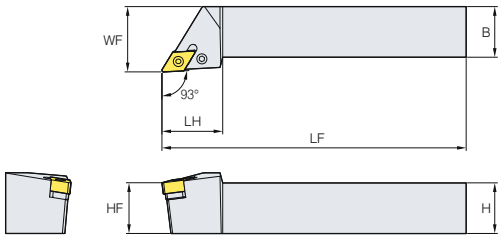
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PCBNR/L	2020-K09-4N			27	125	17	20	20	20	R/L	CN□□ 0904□□	LV3N	VHX0617N	SC32N	SP3	HW25L	LSPS3
	2525-M09-4N	●		29	150	22	25	25	25	R/L							

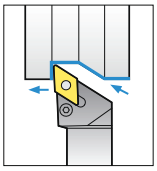
Applicable inserts **B154**

● : Stock item

PDJNR/L

DN□□





93°
• R type holder

(mm)

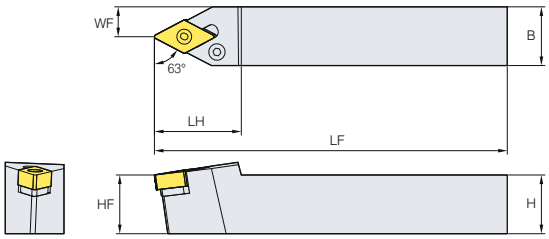
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PDJNR/L	2020-K11-5N	●		30	125	25	20	20	20	R/L	DN□□ 1105□□	LV3AN	VHX0617N	SD32N	SP3	HW25L	LSPS3
	2525-M11-5N	●		30	150	32	25	25	25	R/L							

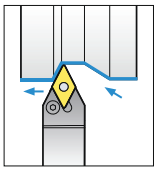
Applicable inserts **B154**

● : Stock item

PDNNR/L

DN□□





63°

• R type holder

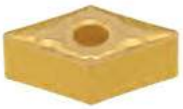
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PDNNR/L	2020-K11-5N	▯		30	125	10	20	20	20	R/L	DN□□1105□□	LV3AN	VHX0617N	SD32N	SP3	HW25L	LSPS3
	2525-M11-5N			30	150	12.5	25	25	25	R/L							

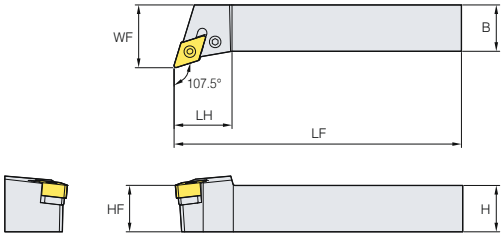
Applicable inserts **B154**

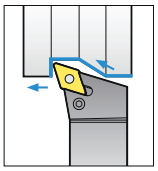
● : Stock item

PDQNR/L



DN□□





107.5°

• R type holder

(mm)

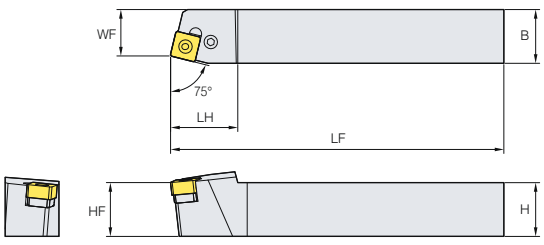
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PDQNR/L	2020-K11-5N	▯		25	125	25	20	20	20	R/L	DN□□1105□□	LV3AN	VHX0617N	SD32N	SP3	HW25L	LSPS3
	2525-M11-5N			25	150	32	25	25	25	R/L							

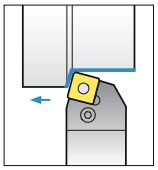
Applicable inserts **B154**

● : Stock item

PSBNR/L

SN□□





75°

• R type holder

(mm)

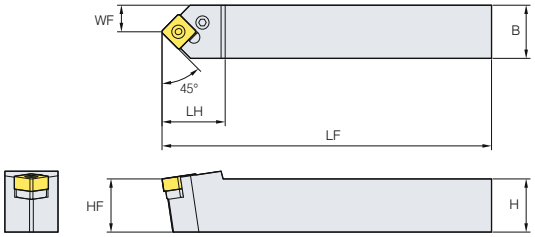
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSBNR/L	2020-K09-4N			25	125	17	20	20	20	R/L	SN□□0904□□	LV3AN	VHX0617N	SS32N	SP3	HW25L	LSPS3
	2525-M09-4N			24.4	150	22	25	25	25	R/L							

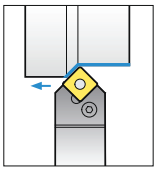
Applicable inserts **B154**

● : Stock item

PSDNN

SN□□





45°

(mm)

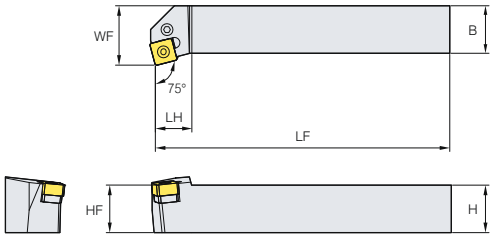
Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSDNN	2020-K09-4N	●	23	125	10	20	20	20	N	SN□□0904□□	LV3AN	VHX0617N	SS32N	SP3	HW25L	LSPS3
	2525-M09-4N	●	23	150	12.5	25	25	25	N							

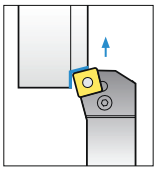
Applicable inserts **B154**

● : Stock item

PSKNR/L

SN□□





75°

• R type holder

(mm)

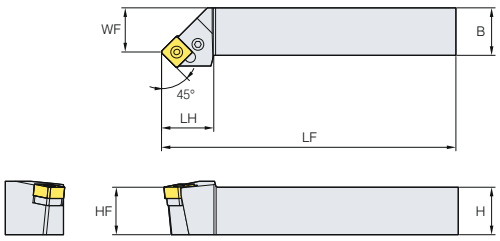
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSKNR/L	2020-K09-4N			14.3	125	25	20	20	20	R/L	SN□□0904□□	LV3AN	VHX0617N	SS32N	SP3	HW25L	LSPS3
	2525-M09-4N	●		24.4	150	32	25	25	25	R/L							

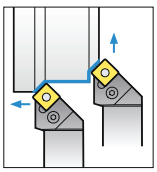
Applicable inserts **B154**

● : Stock item

PSSNR/L

SN□□





45°

• R type holder

(mm)

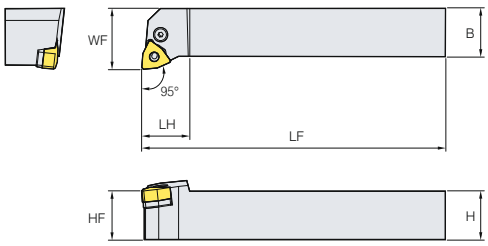
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PSSNR/L	2020-K09-4N	●		22	125	25	20	20	20	R/L	SN□□0904□□	LV3AN	VHX0617N	SS32N	SP3	HW25L	LSPS3
	2525-M09-4N	●	●	27	150	32	25	25	25	R/L							

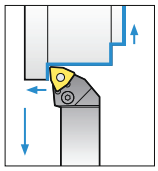
Applicable inserts **B154**

● : Stock item

PWLNR/L

WN□□





95°

• R type holder

(mm)

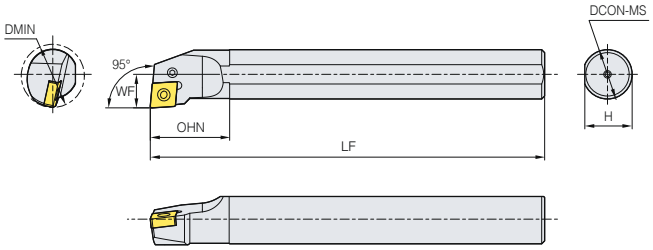
Designation	Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
PWLNR/L 1616-H06	●	●	20	100	20	16	16	16	R/L	WN□□0604□□	LV3AN	VHX0617N	SS32N	SP3	HW25L	LSPS3
2020-K06	●	●	20	125	25	20	20	20	R/L							
2525-M06	●	●	20	150	32	25	25	25	R/L							

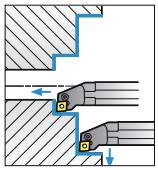
Applicable inserts **B154**

● : Stock item

PCLNR/L

CN□□





95°

• R type holder

(mm)

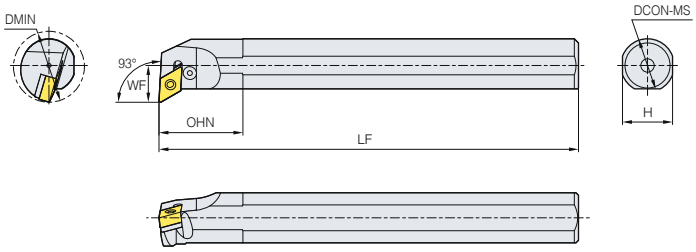
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
S20Q-PCLNR/L-09-4N	●		25	25	180	13	18	20	R/L	CN□□ 0904□□	LV3B	VHX0512B	–	–	HW20L	–
S25R-PCLNR/L-09-4N	●		32	30	200	17	23	25	R/L		LV3B	VHX0512B	SC32N	SP3	HW20L	LSPS3
S32S-PCLNR/L-09-4N			40	50	250	22	30	32	R/L		LV3N	VHX0617N	SC32N	SP3	HW25L	LSPS3

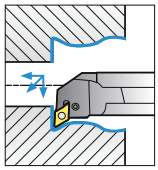
Applicable inserts **B154**

● : Stock item

PDUNR/L

DN□□





93°

• R type holder

(mm)

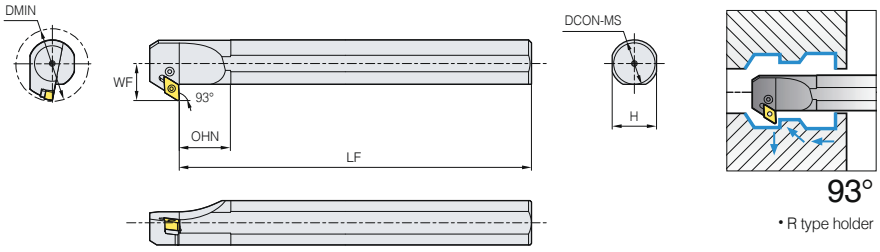
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
S32S-PDUNR/L-11-5N	●	●	40	50	250	22	30	32	R/L	DN□□1105□□	LV3AN	VHX0617N	SD32N	SP3	HW25L	LSPS3
S40T-PDUNR/L-11-5N	●		50	50	300	27	38	40	R/L							

Applicable inserts **B154**

● : Stock item

PDZNR/L

DN□□



93°

• R type holder

(mm)

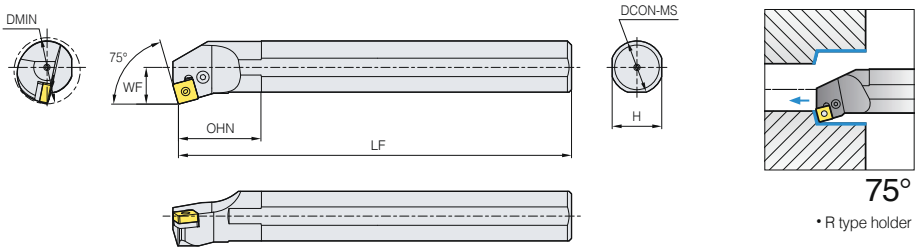
Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
S32S-PDZNR/L-11-5N			40	35	250	25	30	32	R/L	DN□□1105□□	LV3AN	VHX0617N	SD32N	SP3	HW25L	LSPS3
S40T-PDZNR/L-11-5N			50	40	300	29	37	40	R/L							

Applicable inserts **B154**

● : Stock item

PSKNR/L

SN□□



75°

• R type holder

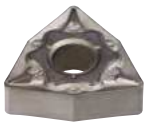
(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
S25R-PSKNR/L-09-4N			32	0	200	17	23	25	R/L	SN□□0904□□	LV3B	VHX0512B	–	–	HW20L	–
S32S-PSKNR/L-09-4N			40	0	250	22	30	32	R/L		LV3N	VHX0617N	SS32N	–	HW25L	LSPS3

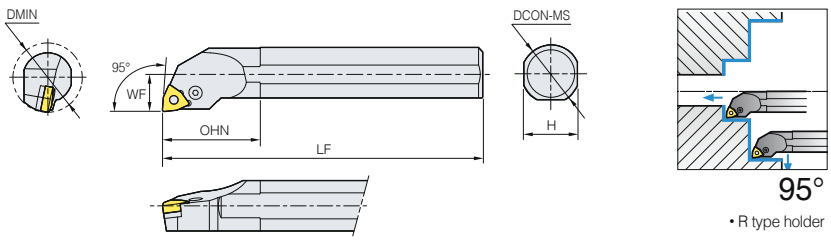
Applicable inserts **B154**

● : Stock item

PWLNR/L



WN□□



95°

• R type holder

(mm)

Designation	Stock R	Stock L	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Wrench	Shim Pin Punch
S20S-PWLNR/L-06	●	●	25	32	250	13	18	20	R/L	WN□□0604□□	LV3B	VHX0512B	–	–	–	–
S25R-PWLNR/L-06	●		32	40	200	17	23	25	R/L							
S32S-PWLNR/L-06	●		40	50	250	22	30	32	R/L		LV3B	VHX0617B	SW317	SP3	HW25L	LSPS3

Applicable inserts **B154**

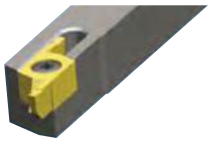
● : Stock item

Excellent for precision machining

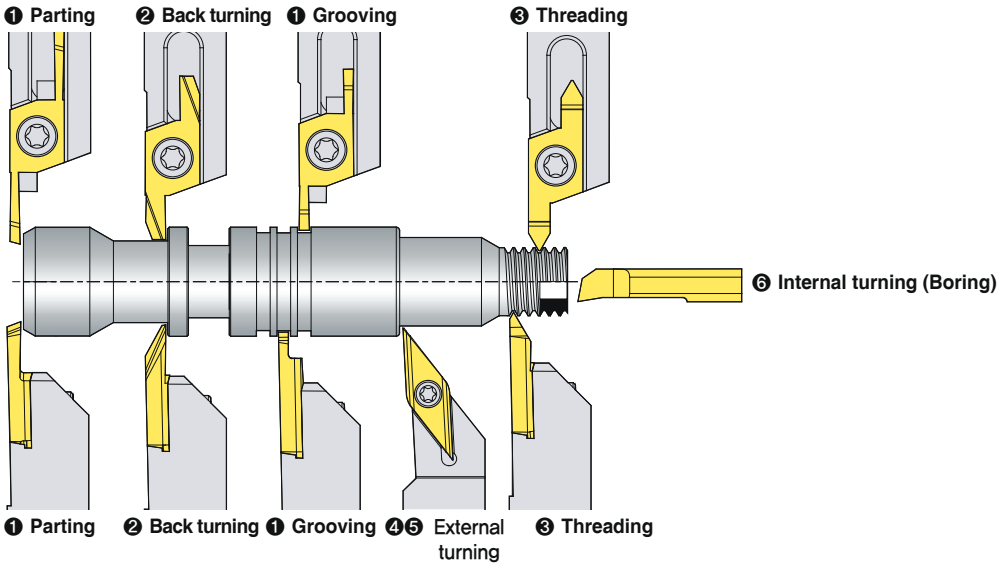
Auto Tools

- High precision machining of small parts and complex forms, etc.
- High quality products through stable machining
- Exclusive insert for automatic lathes

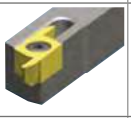
Type

ISO	Blade	Multi utility	MGT	MSB tools
				

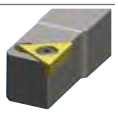
Application example



Index

Specification	❶ Parting and Grooving						❷ Back turning		
Holder	SXGNR/L	SXGNR/L	SBHR/L	SBHR/L	MGEHR/L	KGEHR/L	SXGNR/L	SXGNR/L	SBHR/L
Insert	SG	SC	SBG	SBC	MGMN	KGMN	SB	SGB	SBB
Holder size	10~20mm	10~20mm	10~16mm	10~16mm	10~16mm	10~16mm	10~20mm	10~20mm	10~16mm
Insert shape									
Cutting width	1~3mm	1~3mm	0.7~2.0mm	0.7~2.0mm	1.5~2.5mm	1.5~2.5mm	2~4mm	2~3mm	3.18mm
ØDmax	Ø18	Ø18	Ø16	Ø16	Ø32	Ø32	Tmax 8.0	Tmax 8.5	Tmax 8.0
Page	B145	B145	B142	B142	B149	B148	B145	B145	B142

Specification	❸ Threading	
Holder	SXGNR/L	SBHR/L
Insert	ST	SBT
Holder size	10~20mm	10~16mm
Insert shape		
Feature	Pitch ranges 0.5~1.5 / 1.5~3.0	Pitch ranges 0.2~1.5 / 1.0~2.0
Page	B145	B142

Specification	❹ External turning and Copy machining				❺ External turning and Facing		
Holder	SDJCR/L	SDNCN	SVJBR/L	SVJCR/L	SCACR/L	SCLCR/L	STACR/L
Insert	DC□T	DC□T	VB□T	VC□T	CC□T	CC□T	TC□T
Holder size	8~16mm	8~16mm	10~16mm	10~16mm	8~16mm	8~16mm	8~10mm
Insert shape							
Feature	Offset "0"				Offset "0"		
Page	B128	B129	B130	B130	B128	B128	B129

Auto Tools (ISO)

- ISO inserts for automatic lathes
- Precise R shape with the use of minus tolerance of nose R
- Tolerance class precise enough in no need for adjusting tools with the use of accurate cutting edge height
- Sharp blade for excellent chip control and surface roughness with low cutting force
- High precision tools for electrical/ electronics instruments and medical instruments

Code system (ISO type)

V	C	E	T	11	03	01	M	F	R	-	KM

Insert shape

Relief angle

Tolerance

Cross section type

Cutting edge length, diameter of inscribed circle

Height of cutting edge

Nose radius

Tolerance of nose R
M: Minus

Condition of cutting edge
F: Sharpe
E: Honed
T: Land
S: Honed land

Hand
R: Right
L: Left
N: Neutral

Chip breaker

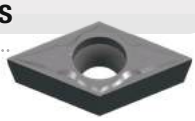
VP1/MS/FS chip breaker

- Exclusive chip breaker for hard-to-cut materials such as titanium alloy, Inconel, stainless steel, etc.
- Minimized cutting heat by reducing contact area between chips and rake surface with the use of high positive blade

VP1

- Hard cutting edge for medium cutting
- Optimal width of chip breaker by each depth of cuts realizes wide workpiece machining

MS



- Good surface finish for medium cutting
- Preventing welding in titanium machining
- Increasing chip evacuation in high feed machining
- Protecting cutting edge due to structure for good chip evacuation

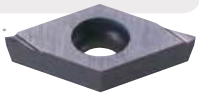
FS

- For finishing (for surface roughness)
- 1st recommended chip breaker for chip control
- Better surface roughness, surface finish and chip control

KF/KM chip breaker, ground type for grooving

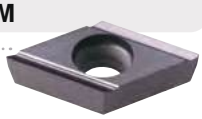
- Ground chip breaker with sharp cutting edge
- High precision insert of E-class tolerance with accurate nose radius

KF



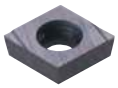
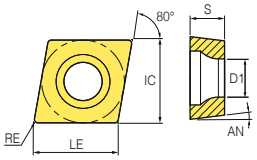
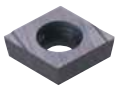
- For finishing
- Low cutting loads with sharp cutting edges
- Longer tool life due to lower chip evacuation resistance at high speed
- Excellent surface roughness

KM



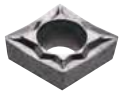
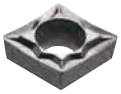
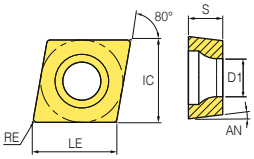
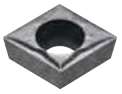
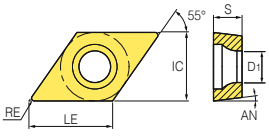
- For medium cutting to finishing
- Better chip flow due to wide chip pockets
- Longer tool life and better cutting action due to improved chip evacuation
- Excellent surface roughness

Applicable insert

Picture	Designation	Coated				Uncoated	Dimensions (mm)							Configuration
		PC5300	PC8105	PC8110	PC8115	H01	IC	RE	S	LE	AN	D1	HAND	
CCGT-KF  Finishing (High precision)	**0301003R-KF**	●		●			3.5	0.03	1.39	3.554	7	1.9	R	
	030101R-KF	●		●			3.5	0.1	1.39	3.554	7	1.9	R	
	030102R-KF	●		●			3.5	0.2	1.39	3.554	7	1.9	R	
	030104R-KF	●		●			3.5	0.4	1.39	3.554	7	1.9	R	
	0401003R-KF	●		●			4.3	0.03	1.79	4.355	7	2.3	R	
	040101R-KF	●		●			4.3	0.1	1.79	4.355	7	2.3	R	
	040102R-KF	●		●			4.3	0.2	1.79	4.355	7	2.3	R	
	040104R-KF	●		●			4.3	0.4	1.79	4.355	7	2.3	R	
	0602003R-KF						6.35	0.03	2.38	6.448	7	2.8	R	
	060201R-KF						6.35	0.1	2.38	6.448	7	2.8	R	
	060202R-KF						6.35	0.2	2.38	6.448	7	2.8	R	
	09T3003R-KF						9.525	0.03	3.97	9.672	7	4.4	R	
	09T301R-KF						9.525	0.1	3.97	9.672	7	4.4	R	
	09T302R-KF						9.525	0.2	3.97	9.672	7	4.4	R	
	0301003L-KF	●		●			3.5	0.03	1.39	3.554	7	1.9	L	
	030101L-KF	●		●			3.5	0.1	1.39	3.554	7	1.9	L	
	030102L-KF	●		●			3.5	0.2	1.39	3.554	7	1.9	L	
	030104L-KF	●		●			3.5	0.4	1.39	3.554	7	1.9	L	
	0401003L-KF	●		●			4.3	0.03	1.79	4.355	7	2.3	L	
	040101L-KF	●		●			4.3	0.1	1.79	4.355	7	2.3	L	
	040102L-KF	●		●			4.3	0.2	1.79	4.355	7	2.3	L	
	040104L-KF	●		●			4.3	0.4	1.79	4.355	7	2.3	L	
	0602003L-KF						6.35	0.03	2.38	6.448	7	2.8	L	
	060201L-KF						6.35	0.1	2.38	6.448	7	2.8	L	
	060202L-KF						6.35	0.2	2.38	6.448	7	2.8	L	
	09T3003L-KF						9.525	0.03	3.97	9.672	7	4.4	L	
	09T301L-KF						9.525	0.1	3.97	9.672	7	4.4	L	
	09T302L-KF						9.525	0.2	3.97	9.672	7	4.4	L	
CCET-KF  Finishing (Ultra high precision)	**0602005MFR-KF**						6.35	< 0.05	2.38	6.448	7	2.8	R	
	060201MFR-KF			●			6.35	< 0.1	2.38	6.448	7	2.8	R	
	060202MFR-KF	●		●			6.35	< 0.2	2.38	6.448	7	2.8	R	
	09T3005MFR-KF						9.525	< 0.05	3.97	9.672	7	4.4	R	
	09T301MFR-KF	●		●			9.525	< 0.1	3.97	9.672	7	4.4	R	
	09T302MFR-KF	●					9.525	< 0.2	3.97	9.672	7	4.4	R	
	0602005MFL-KF						6.35	< 0.05	2.38	6.448	7	2.8	L	
	060201MFL-KF			●			6.35	< 0.1	2.38	6.448	7	2.8	L	
	060202MFL-KF	●		●			6.35	< 0.2	2.38	6.448	7	2.8	L	
	09T3005MFL-KF						9.525	< 0.05	3.97	9.672	7	4.4	L	
	09T301MFL-KF	●					9.525	< 0.1	3.97	9.672	7	4.4	L	
	09T302MFL-KF	●		●			9.525	< 0.2	3.97	9.672	7	4.4	L	
CCGT-KM Medium to finishing (High precision)	**0602003R-KM**	●		●			6.35	0.03	2.38	6.448	7	2.8	R	
	060201R-KM	●					6.35	0.1	2.38	6.448	7	2.8	R	
	060202R-KM	●		●			6.35	0.2	2.38	6.448	7	2.8	R	
	060204R-KM	●		●			6.35	0.4	2.38	6.448	7	2.8	R	
	09T3003R-KM	●		●			9.525	0.03	3.97	9.672	7	4.4	R	
	09T301R-KM	●		●			9.525	0.1	3.97	9.672	7	4.4	R	
	09T302R-KM	●		●			9.525	0.2	3.97	9.672	7	4.4	R	
	09T304R-KM	●		●			9.525	0.4	3.97	9.672	7	4.4	R	
	0602003L-KM	●		●			6.35	0.03	2.38	6.448	7	2.8	L	
	060202L-KM	●		●			6.35	0.2	2.38	6.448	7	2.8	L	
	060204L-KM	●		●			6.35	0.4	2.38	6.448	7	2.8	L	
	09T3003L-KM	●		●			9.525	0.03	3.97	9.672	7	4.4	L	
	09T301L-KM	●					9.525	0.1	3.97	9.672	7	4.4	L	
	09T302L-KM	●		●			9.525	0.2	3.97	9.672	7	4.4	L	
	09T304L-KM	●		●			9.525	0.4	3.97	9.672	7	4.4	L	

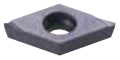
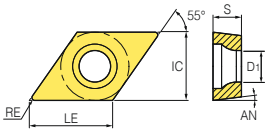
● : Stock item

Applicable insert

Picture	Designation	Coated				Uncoated	Dimensions (mm)							Configuration
		PC5300	PC8105	PC8110	PC8115	H01	IC	RE	S	LE	AN	D1	HAND	
CCET-KM Medium to finishing (Ultra high precision)	0602005MFR-KM	●		●			6.35	< 0.05	2.38	6.448	7	2.8	R	
	060201MFR-KM	●		●			6.35	< 0.1	2.38	6.448	7	2.8	R	
	060202MFR-KM	●		●			6.35	< 0.2	2.38	6.448	7	2.8	R	
	09T3005MFR-KM	●		●			9.525	< 0.05	3.97	9.672	7	4.4	R	
	09T301MFR-KM	●		●			9.525	< 0.1	3.97	9.672	7	4.4	R	
	09T302MFR-KM	●		●			9.525	< 0.2	3.97	9.672	7	4.4	R	
	0602005MFL-KM	●		●			6.35	< 0.05	2.38	6.448	7	2.8	L	
	060201MFL-KM	●		●			6.35	< 0.1	2.38	6.448	7	2.8	L	
	060202MFL-KM	●		●			6.35	< 0.2	2.38	6.448	7	2.8	L	
	09T3005MFL-KM	●		●			9.525	< 0.05	3.97	9.672	7	4.4	L	
	09T301MFL-KM	●		●			9.525	< 0.1	3.97	9.672	7	4.4	L	
	09T302MFL-KM	●		●			9.525	< 0.2	3.97	9.672	7	4.4	L	
CCGT-FS  Finishing (High precision)	060201-FS	●		●			6.35	0.1	2.38	6.448	7	2.8	N	
	060202-FS	●		●			6.35	0.2	2.38	6.448	7	2.8	N	
	060204-FS	●		●			6.35	0.4	2.38	6.448	7	2.8	N	
	09T301-FS	●		●			9.525	0.1	3.97	9.672	7	4.4	N	
	09T302-FS	●		●			9.525	0.2	3.97	9.672	7	4.4	N	
	09T304-FS	●		●			9.525	0.4	3.97	9.672	7	4.4	N	
	09T308-FS	●		●			9.525	0.8	3.97	9.672	7	4.4	N	
CCGT-FS  Finishing (Ultra high precision)	060201MFN-FS						6.35	< 0.1	2.38	6.448	7	2.8	N	
	060202MFN-FS						6.35	< 0.2	2.38	6.448	7	2.8	N	
	060204MFN-FS						6.35	< 0.1	2.38	6.448	7	2.8	N	
	09T301MFN-FS						9.525	< 0.1	3.97	9.672	7	4.4	N	
	09T302MFN-FS						9.525	< 0.2	3.97	9.672	7	4.4	N	
	09T304MFN-FS						9.525	< 0.4	3.97	9.672	7	4.4	N	
	09T308MFN-FS						9.525	< 0.8	3.97	9.672	7	4.4	N	
CCGT-MS Medium cutting (High precision)	09T301-MS	●		●			9.525	0.1	3.97	9.672	7	4.4	N	
	09T302-MS	●		●			9.525	0.2	3.97	9.672	7	4.4	N	
	09T304-MS	●		●			9.525	0.4	3.97	9.672	7	4.4	N	
CCGT-MS  Medium cutting (Ultra high precision)	09T301MFN-MS	●		●			9.525	< 0.1	3.97	9.672	7	4.4	N	
	09T302MFN-MS	●		●			9.525	< 0.2	3.97	9.672	7	4.4	N	
	09T304MFN-MS	●		●			9.525	< 0.4	3.97	9.672	7	4.4	N	
CCGT-VP1 Finishing (High precision)	60201-VP1	●	●	●	●	●	6.35	0.1	2.38	6.448	7	2.8	N	
	60202-VP1	●	●	●	●		6.35	0.2	2.38	6.448	7	2.8	N	
	60204-VP1	●	●	●	●	●	6.35	0.4	2.38	6.448	7	2.8	N	
	09T301-VP1	●	●	●	●	●	9.525	0.1	3.97	9.672	7	4.4	N	
	09T302-VP1	●	●	●	●		9.525	0.2	3.97	9.672	7	4.4	N	
	09T304-VP1	●	●	●	●	●	9.525	0.4	3.97	9.672	7	4.4	N	
CCGT-VP1 Finishing (Ultra high precision)	060201MFN-VP1			●			6.35	< 0.1	2.38	6.448	7	2.8	N	
	060202MFN-VP1	●		●			6.35	< 0.2	2.38	6.448	7	2.8	N	
	060204MFN-VP1			●			6.35	< 0.4	2.38	6.448	7	2.8	N	
	09T301MFN-VP1	●		●			9.525	< 0.1	3.97	9.672	7	4.4	N	
	09T302MFN-VP1	●		●			9.525	< 0.2	3.97	9.672	7	4.4	N	
	09T304MFN-VP1	●		●			9.525	< 0.4	3.97	9.672	7	4.4	N	
DCGT-KF Finishing (High precision)	0702003R-KF	●		●			6.35	0.03	2.38	7.752	7	2.8	R	
	070201R-KF	●					6.35	0.1	2.38	7.752	7	2.8	R	
	070202R-KF	●		●			6.35	0.2	2.38	7.752	7	2.8	R	
	070204R-KF	●		●			6.35	0.4	2.38	7.752	7	2.8	R	
	11T3003R-KF	●		●			9.525	0.03	3.97	11.628	7	4.4	R	
	11T301R-KF	●		●			9.525	0.1	3.97	11.628	7	4.4	R	
	11T302R-KF	●		●			9.525	0.2	3.97	11.628	7	4.4	R	
	11T304R-KF	●		●			9.525	0.4	3.97	11.628	7	4.4	R	
	0702003L-KF	●		●			6.35	0.03	2.38	7.752	7	2.8	L	
	070201L-KF	●					6.35	0.1	2.38	7.752	7	2.8	L	
	070202L-KF	●					6.35	0.2	2.38	7.752	7	2.8	L	
	070204L-KF	●		●			6.35	0.4	2.38	7.752	7	2.8	L	
	11T3003L-KF	●		●			9.525	0.03	3.97	11.628	7	4.4	L	
	11T301L-KF	●					9.525	0.1	3.97	11.628	7	4.4	L	
	11T302L-KF	●		●			9.525	0.2	3.97	11.628	7	4.4	L	
	11T304L-KF	●		●			9.525	0.4	3.97	11.628	7	4.4	L	

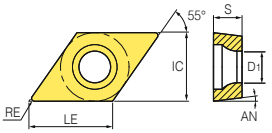
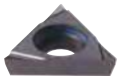
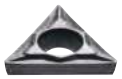
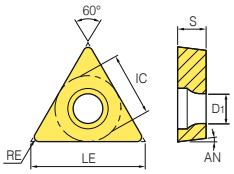
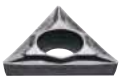
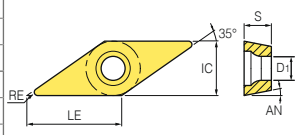
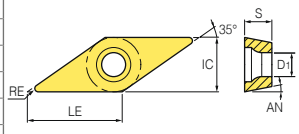
● : Stock item

Applicable insert

Picture	Designation	Coated				Uncoated	Dimensions (mm)							Configuration
		PC5300	PC8105	PC8110	PC8115	H01	IC	RE	S	LE	AN	D1	HAND	
DCET-KF  Finishing (Ultra high precision)	0702005MFR-KF	●		●			6.35	< 0.05	2.38	7.752	7	2.8	R	
	070201MFR-KF			●			6.35	< 0.1	2.38	7.752	7	2.8	R	
	070202MFR-KF			●			6.35	< 0.2	2.38	7.752	7	2.8	R	
	11T3005MFR-KF	●		●			9.525	< 0.05	3.97	11.628	7	4.4	R	
	11T301MFR-KF			●			9.525	< 0.1	3.97	11.628	7	4.4	R	
	11T302MFR-KF	●		●			9.525	< 0.2	3.97	11.628	7	4.4	R	
	0702005MFL-KF			●			6.35	< 0.05	2.38	7.752	7	2.8	L	
	070201MFL-KF						6.35	< 0.1	2.38	7.752	7	2.8	L	
	070202MFL-KF						6.35	< 0.2	2.38	7.752	7	2.8	L	
	11T3005MFL-KF	●		●			9.525	< 0.05	3.97	11.628	7	4.4	L	
	11T301MFL-KF						9.525	< 0.1	3.97	11.628	7	4.4	L	
	11T302MFL-KF						9.525	< 0.2	3.97	11.628	7	4.4	L	
DCGT-KM Medium to finishing (High precision)	0702003R-KM	●		●			6.35	0.03	2.38	7.752	7	2.8	R	
	070201R-KM	●		●			6.35	0.1	2.38	7.752	7	2.8	R	
	070202R-KM	●		●			6.35	0.2	2.38	7.752	7	2.8	R	
	070204R-KM	●					6.35	0.4	2.38	7.752	7	2.8	R	
	11T3003R-KM	●		●			9.525	0.03	3.97	11.628	7	4.4	R	
	11T301R-KM	●		●			9.525	0.1	3.97	11.628	7	4.4	R	
	11T302R-KM	●		●			9.525	0.2	3.97	11.628	7	4.4	R	
	11T304R-KM	●		●			9.525	0.4	3.97	11.628	7	4.4	R	
	0702003L-KM	●		●			6.35	0.03	2.38	7.752	7	2.8	L	
	070201L-KM	●					6.35	0.1	2.38	7.752	7	2.8	L	
	070202L-KM	●					6.35	0.2	2.38	7.752	7	2.8	L	
	070204L-KM	●					6.35	0.4	2.38	7.752	7	2.8	L	
	11T3003L-KM	●					9.525	0.03	3.97	11.628	7	4.4	L	
	11T301L-KM	●					9.525	0.1	3.97	11.628	7	4.4	L	
	11T302L-KM	●		●			9.525	0.2	3.97	11.628	7	4.4	L	
	11T304L-KM	●					9.525	0.4	3.97	11.628	7	4.4	L	
DCET-KM Medium to finishing (Ultra high precision)	0702005MFR-KM						6.35	< 0.05	2.38	7.752	7	2.8	R	
	070201MFR-KM	●		●			6.35	< 0.1	2.38	7.752	7	2.8	R	
	070202MFR-KM	●		●			6.35	< 0.2	2.38	7.752	7	2.8	R	
	11T3005MFR-KM	●		●			9.525	< 0.05	3.97	11.628	7	4.4	R	
	11T301MFR-KM	●		●			9.525	< 0.1	3.97	11.628	7	4.4	R	
	11T302MFR-KM	●		●			9.525	< 0.2	3.97	11.628	7	4.4	R	
	0702005MFL-KM			●			6.35	< 0.05	2.38	7.752	7	2.8	L	
	070201MFL-KM	●					6.35	< 0.1	2.38	7.752	7	2.8	L	
	070202MFL-KM	●		●			6.35	< 0.2	2.38	7.752	7	2.8	L	
	11T3005MFL-KM	●		●			9.525	< 0.05	3.97	11.628	7	4.4	L	
	11T301MFL-KM	●		●			9.525	< 0.1	3.97	11.628	7	4.4	L	
	11T302MFL-KM	●					9.525	< 0.2	3.97	11.628	7	4.4	L	
DCGT-FS Finishing (High precision)	070201-FS	●		●			6.35	0.1	2.38	7.752	7	2.8	N	
	070202-FS	●		●			6.35	0.2	2.38	7.752	7	2.8	N	
	11T301-FS	●		●			9.525	0.1	3.97	11.628	7	4.4	N	
	11T302-FS	●		●			9.525	0.2	3.97	11.628	7	4.4	N	
	11T304-FS	●		●			9.525	0.4	3.97	11.628	7	4.4	N	
	11T308-FS	●		●			9.525	0.8	3.97	11.628	7	4.4	N	
DCGT-FS Finishing (Ultra high precision)	070201MFN-FS						6.35	< 0.1	2.38	7.752	7	2.8	N	
	070202MFN-FS						6.35	< 0.2	2.38	7.752	7	2.8	N	
	11T301MFN-FS						9.525	< 0.1	3.97	11.628	7	4.4	N	
	11T302MFN-FS						9.525	< 0.2	3.97	11.628	7	4.4	N	
	11T304MFN-FS						9.525	< 0.4	3.97	11.628	7	4.4	N	
	11T308MFN-FS						9.525	< 0.1	3.97	11.628	7	4.4	N	
DCGT-MS Medium cutting (High precision)	11T301-MS	●		●			9.525	0.1	3.97	11.628	7	4.4	N	
	11T302-MS	●		●			9.525	0.2	3.97	11.628	7	4.4	N	
	11T304-MS	●		●			9.525	0.4	3.97	11.628	7	4.4	N	
DCGT-MS Medium cutting (Ultra high precision)	11T301MFN-MS	●		●			9.525	< 0.1	3.97	11.628	7	4.4	N	
	11T302MFN-MS						9.525	< 0.2	3.97	11.628	7	4.4	N	
	11T304MFN-MS	●		●			9.525	< 0.4	3.97	11.628	7	4.4	N	

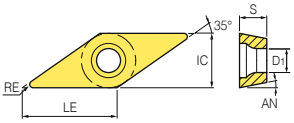
● : Stock item

Applicable insert

Picture	Designation	Coated				Uncoated	Dimensions (mm)							Configuration
		PC5300	PC8105	PC8110	PC8115	H01	IC	RE	S	LE	AN	D1	HAND	
DCGT-VP1 Finishing (High precision)	070201-VP1	●	●	●	●		6.35	0.1	2.38	7.752	7	2.8	N	
	070202-VP1	●		●	●	●	6.35	0.2	2.38	7.752	7	2.8	N	
	070204-VP1	●	●	●	●		6.35	0.4	2.38	7.752	7	2.8	N	
	11T301-VP1	●		●			9.525	0.1	3.97	11.628	7	4.4	N	
	11T302-VP1	●	●	●	●	●	9.525	0.2	3.97	11.628	7	4.4	N	
	11T304-VP1	●	●	●	●	●	9.525	0.4	3.97	11.628	7	4.4	N	
DCGT-VP1 Finishing (Ultra high precision)	070201MFN-VP1			●			6.35	< 0.1	2.38	7.752	7	2.8	N	
	070202MFN-VP1	●		●			6.35	< 0.2	2.38	7.752	7	2.8	N	
	070204MFN-VP1			●			6.35	< 0.4	2.38	7.752	7	2.8	N	
	11T301MFN-VP1			●			9.525	< 0.1	3.97	11.628	7	4.4	N	
	11T302MFN-VP1			●			9.525	< 0.2	3.97	11.628	7	4.4	N	
	11T304MFN-VP1	●		●			9.525	< 0.4	3.97	11.628	7	4.4	N	
TCGT-KF  Finishing (High precision)	0802003R-KF						4.76	0.03	2.38	8.245	7	2.3	R	
	080201R-KF						4.76	0.1	2.38	8.245	7	2.3	R	
	080202R-KF						4.76	0.2	2.38	8.245	7	2.3	R	
	08020003L-KF						4.76	0.03	2.38	8.245	7	2.3	L	
	080201L-KF						4.76	0.1	2.38	8.245	7	2.3	L	
	080202L-KF						4.76	0.2	2.38	8.245	7	2.3	L	
TCGT-FS  Finishing (High precision)	110201-FS	●		●			6.349	0.1	2.38	10.999	7	2.8	N	
	110202-FS	●		●			6.348	0.2	2.38	10.999	7	2.8	N	
	110204-FS	●		●			6.345	0.4	2.38	10.999	7	2.8	N	
TCGT-FS  Finishing (Ultra high precision)	110201MFN-FS						6.35	< 0.1	2.38	10.999	7	2.8	N	
	110202MFN-FS						6.35	< 0.2	2.38	10.999	7	2.8	N	
	110204MFN-FS						6.35	< 0.4	2.38	10.999	7	2.8	N	
VBGT-KF Finishing (High precision)	1103003R-KF	●					6.35	0.03	3.18	11.071	5	2.8	R	
	110301R-KF	●					6.35	0.1	3.18	11.071	5	2.8	R	
	110302R-KF	●					6.35	0.2	3.18	11.071	5	2.8	R	
	1103003L-KF	●					6.35	0.03	3.18	11.071	5	2.8	L	
	110301L-KF	●					6.35	0.1	3.18	11.071	5	2.8	L	
	110302L-KF	●					6.35	0.2	3.18	11.071	5	2.8	L	
VBGT-KM Medium to finishing (High precision)	1103003R-KM	●		●			6.35	0.03	3.18	11.071	5	2.8	R	
	110301R-KM	●					6.35	0.1	3.18	11.071	5	2.8	R	
	110302R-KM	●		●			6.35	0.2	3.18	11.071	5	2.8	R	
	1103003L-KM	●		●			6.35	0.03	3.18	11.071	5	2.8	L	
	110301L-KM	●					6.35	0.1	3.18	11.071	5	2.8	L	
	110302L-KM	●					6.35	0.2	3.18	11.071	5	2.8	L	
VBGT-FS Finishing (High precision)	110301-FS	●		●			6.35	0.1	3.18	11.071	5	2.8	N	
	110302-FS	●		●			6.35	0.2	3.18	11.071	5	2.8	N	
	110304-FS	●		●			6.35	0.4	3.18	11.071	5	2.8	N	
	160401-FS	●		●			9.525	0.1	4.76	16.606	5	4.4	N	
	160402-FS	●		●			9.525	0.2	4.76	16.606	5	4.4	N	
	160404-FS	●		●			9.525	0.4	4.76	16.606	5	4.4	N	
VBGT-FS Finishing (Ultra high precision)	110301MFN-FS						6.35	< 0.1	3.18	11.071	5	2.8	N	
	110302MFN-FS						6.35	< 0.2	3.18	11.071	5	2.8	N	
	110304MFN-FS						6.35	< 0.4	3.18	11.071	5	2.8	N	
	160401MFN-FS						9.525	< 0.1	4.76	16.606	5	4.4	N	
	160402MFN-FS						9.525	< 0.2	4.76	16.606	5	4.4	N	
	160404MFN-FS						9.525	< 0.4	4.76	16.606	5	4.4	N	
VCGT-KF Finishing (High precision)	1103003R-KF						6.35	0.03	3.18	11.071	7	2.8	R	
	110301R-KF						6.35	0.1	3.18	11.071	7	2.8	R	
	110302R-KF						6.35	0.2	3.18	11.071	7	2.8	R	
	1103003L-KF						6.35	0.03	3.18	11.071	7	2.8	L	
	110301L-KF						6.35	0.1	3.18	11.071	7	2.8	L	
	110302L-KF						6.35	0.2	3.18	11.071	7	2.8	L	

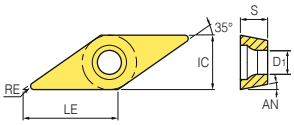
● : Stock item

Applicable insert

Picture	Designation	Coated				Uncoated	Dimensions (mm)							Configuration
		PC5300	PC8105	PC8110	PC8115	H01	IC	RE	S	LE	AN	D1	HAND	
VCET-KF Finishing (Ultra high precision)	1103005MFR-KF	●		●			6.35	< 0.05	3.18	11.071	7	2.8	R	
	110301MFR-KF			●			6.35	< 0.1	3.18	11.071	7	2.8	R	
	110302MFR-KF						6.35	< 0.2	3.18	11.071	7	2.8	R	
	1103005MFL-KF						6.35	< 0.05	3.18	11.071	7	2.8	L	
	110301MFL-KF			●			6.35	< 0.1	3.18	11.071	7	2.8	L	
	110302MFL-KF			●			6.35	< 0.2	3.18	11.071	7	2.8	L	
VCGT-KM Medium to finishing (High precision)	1103003R-KM						6.35	0.03	3.18	11.071	7	2.8	R	
	110301R-KM						6.35	0.1	3.18	11.071	7	2.8	R	
	110302R-KM						6.35	0.2	3.18	11.071	7	2.8	R	
	1103003L-KM						6.35	0.03	3.18	11.071	7	2.8	L	
	110301L-KM						6.35	0.1	3.18	11.071	7	2.8	L	
	110302L-KM						6.35	0.2	3.18	11.071	7	2.8	L	
VCET-KM Medium to finishing (Ultra high precision)	1103005MFR-KM			●			6.35	< 0.05	3.18	11.071	7	2.8	R	
	110301MFR-KM			●			6.35	< 0.1	3.18	11.071	7	2.8	R	
	110302MFR-KM	●		●			6.35	< 0.2	3.18	11.071	7	2.8	R	
	1103005MFL-KM						6.35	< 0.05	3.18	11.071	7	2.8	L	
	110301MFL-KM						6.35	< 0.1	3.18	11.071	7	2.8	L	
	110302MFL-KM	●		●			6.35	< 0.2	3.18	11.071	7	2.8	L	
VCGT-FS Finishing (High precision)	110301-FS	●		●			6.35	0.1	3.18	11.071	7	2.8	N	
	110302-FS	●		●			6.35	0.2	3.18	11.071	7	2.8	N	
	110304-FS	●		●			6.35	0.4	3.18	11.071	7	2.8	N	
	160401-FS	●		●			9.525	0.1	4.76	16.606	7	4.4	N	
	160402-FS	●		●			9.525	0.2	4.76	16.606	7	4.4	N	
	160404-FS	●		●			9.525	0.4	4.76	16.606	7	4.4	N	
VCGT-FS Finishing (Ultra high precision)	110301MFN-FS						6.35	< 0.1	3.18	11.071	7	2.8	N	
	110302MFN-FS						6.35	< 0.2	3.18	11.071	7	2.8	N	
	110304MFN-FS						6.35	< 0.4	3.18	11.071	7	2.8	N	
	160401MFN-FS						9.525	< 0.1	4.76	16.606	7	4.4	N	
	160402MFN-FS						9.525	< 0.2	4.76	16.606	7	4.4	N	
	160404MFN-FS						9.525	< 0.4	4.76	16.606	7	4.4	N	
VCGT-MS Medium cutting (High precision)	110301-MS	●		●			6.35	0.1	3.18	11.071	7	2.8	N	
	110302-MS	●		●			6.35	0.2	3.18	11.071	7	2.8	N	
	110304-MS	●		●			6.35	0.4	3.18	11.071	7	2.8	N	
VCGT-MS Medium cutting (Ultra high precision)	11T301MFN-MS	●		●			6.35	< 0.1	3.18	11.071	7	2.8	N	
	11T302MFN-MS	●		●			6.35	< 0.2	3.18	11.071	7	2.8	N	
	11T304MFN-MS	●		●			6.35	< 0.4	3.18	11.071	7	2.8	N	
VCGT-VP1 Finishing (High precision)	110301-VP1	●	●	●	●	●	6.35	0.1	3.18	11.071	7	2.8	N	
	110302-VP1	●	●	●	●	●	6.35	0.2	3.18	11.071	7	2.8	N	
	110304-VP1	●	●	●	●	●	6.35	0.4	3.18	11.071	7	2.8	N	
VCGT-VP1 Finishing (Ultra high precision)	110301MFN-VP1	●		●			6.35	< 0.1	3.18	11.071	7	2.8	N	
	110302MFN-VP1	●		●			6.35	< 0.2	3.18	11.071	7	2.8	N	
	110304MFN-VP1	●		●			6.35	< 0.4	3.18	11.071	7	2.8	N	
VCGT-MS Medium cutting (Ultra high precision)	1203008FN-MS	●		●			7.5	0.08	3	13.706	7	2.8	N	
	120301FN-MS	●		●			7.5	0.1	3	13.706	7	2.8	N	
	120302FN-MS	●					7.5	0.2	3	13.706	7	2.8	N	
	120304FN-MS	●		●			7.5	0.4	3	13.706	7	2.8	N	
VCGX-VP1 Finishing (Ultra high precision) Chamfer type	120300MFR-VP1	●		●			7.94	< 0	3	11.044	7	2.8	R	
	120301MFR-VP1	●		●			7.5	< 0.1	3	11.044	7	2.8	R	
	120302MFR-VP1	●		●			7.5	< 0.2	3	11.044	7	2.8	R	
	120304MFR-VP1	●		●			7.5	< 0.4	3	11.044	7	2.8	R	
	120308MFR-VP1	●		●			7.5	< 0.8	3	11.044	7	2.8	R	

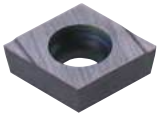
● : Stock item

Applicable insert

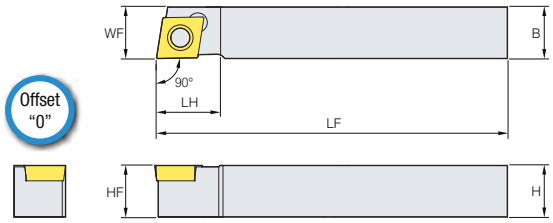
Picture	Designation	Coated				Uncoated	Dimensions (mm)							Configuration
		PC5300	PC8105	PC8110	PC8115	H01	IC	RE	S	LE	AN	D1	HAND	
VPGT-KF Finishing (High precision)	080201R-KF	●		●			4.76	0.1	2.38	8.299	11	2.3	R	
	080202R-KF	●		●			4.76	0.2	2.38	8.299	11	2.3	R	
	1103003R-KF	●		●			6.35	0.03	3.18	11.071	11	2.8	R	
	110301R-KF	●		●			6.35	0.1	3.18	11.071	11	2.8	R	
	110302R-KF	●		●			6.35	0.2	3.18	11.071	11	2.8	R	
	080201L-KF	●		●			4.76	0.1	2.38	8.299	11	2.3	L	
	080202L-KF	●		●			4.76	0.2	2.38	8.299	11	2.3	L	
	1103003L-KF	●		●			6.35	0.03	3.18	11.071	11	2.8	L	
	110301L-KF	●		●			6.35	0.1	3.18	11.071	11	2.8	L	
	110302L-KF	●		●			6.35	0.2	3.18	11.071	11	2.8	L	
VPET-KF Finishing (Ultra high precision)	0802005MFR-KF						4.76	< 0.05	2.38	8.299	11	2.3	R	
	080201MFR-KF						4.76	< 0.1	2.38	8.299	11	2.3	R	
	080202MFR-KF	●		●			4.76	< 0.2	2.38	8.299	11	2.3	R	
	0802005MFL-KF			●			4.76	< 0.05	2.38	8.299	11	2.3	L	
	080201MFL-KF						4.76	< 0.1	2.38	8.299	11	2.3	L	
	080202MFL-KF	●		●			4.76	< 0.2	2.38	8.299	11	2.3	L	
VPGT-KM Medium to finishing (High precision)	080201R-KM	●		●			4.76	0.1	2.38	8.299	11	2.3	R	
	080202R-KM	●		●			4.76	0.2	2.38	8.299	11	2.3	R	
	1103003R-KM	●		●			6.35	0.03	3.18	11.071	11	2.8	R	
	110301R-KM	●		●			6.35	0.1	3.18	11.071	11	2.8	R	
	110302R-KM	●		●			6.35	0.2	3.18	11.071	11	2.8	R	
	080201L-KM	●		●			4.76	0.1	2.38	8.299	11	2.3	L	
	080202L-KM	●		●			4.76	0.2	2.38	8.299	11	2.3	L	
	1103003L-KM	●		●			6.35	0.03	3.18	11.071	11	2.8	L	
	110301L-KM	●		●			6.35	0.1	3.18	11.071	11	2.8	L	
	110302L-KM	●		●			6.35	0.2	3.18	11.071	11	2.8	L	
VPET-KM Medium to finishing (Ultra high precision)	0802005MFR-KM						4.76	< 0.05	2.38	8.299	11	2.3	R	
	080201MFR-KM						4.76	< 0.1	2.38	8.299	11	2.3	R	
	080202MFR-KM	●		●			4.76	< 0.2	2.38	8.299	11	2.3	R	
	0802005MFL-KM						4.76	< 0.05	2.38	8.299	11	2.3	L	
	080201MFL-KM						4.76	< 0.1	2.38	8.299	11	2.3	L	
	080202MFL-KM						4.76	< 0.2	2.38	8.299	11	2.3	L	
VPGT-VP1 Medium cutting (High precision)	110301-VP1	●		●			6.35	0.1	3.18	11.071	11	2.8	N	
	110302-VP1	●		●			6.35	0.2	3.18	11.071	11	2.8	N	
	110304-VP1					●	6.35	0.4	3.18	11.071	11	2.8	N	
VPGT-VP1 Medium cutting (Ultra high precision)	110301MFN-VP1	●		●			6.35	< 0.1	3.18	11.071	11	2.8	N	
	110302MFN-VP1			●			6.35	< 0.2	3.18	11.071	11	2.8	N	
	110304MFN-VP1	●		●			6.35	< 0.4	3.18	11.071	11	2.8	N	

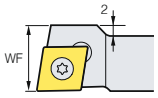
● : Stock item

SCACR/L

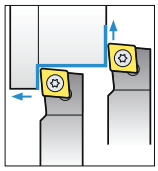


CC□T





※ Only SCACR/L1010-X09A is designed as above picture.



90°

• R type holder

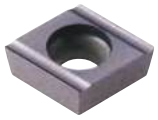
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SCACR/L	0808-X06A	●	●	10	120	8	8	8	8	R/L	CC□ T0602□□	FTKA02565	TW07P
	1010-X06A	●	●	10	120	10	10	10	10	R/L			
	1010-X09A	●	●	16	120	12	10	10	10	R/L	CC□ T09T3□□	FTKA0410	TW15P
	1212-X09A	●	●	16	120	12	12	12	12	R/L			
	1616-X09A	●	●	16	120	16	16	16	16	R/L			

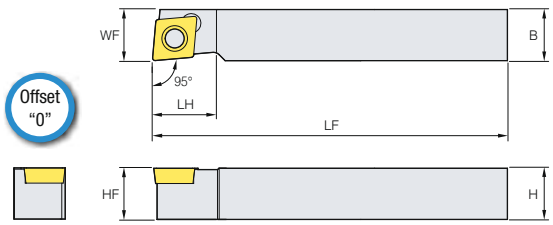
Applicable inserts **B44 ~ B48, B75, B162 ~ B163**

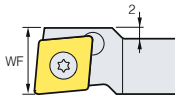
● : Stock item

SCLCR/L

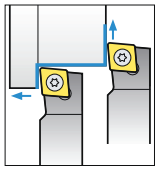


CC□T





※ Only SCLCR/L1010-X09A is designed as above picture.



95°

• R type holder

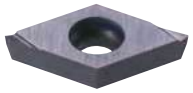
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SCLCR/L	0808-X06A	●	●	10	120	8	8	8	8	R/L	CC□ T0602□□	FTKA02565	TW07P
	1010-X06A	●	●	10	120	10	10	10	10	R/L			
	1010-X09A	●	●	16	120	12	10	10	10	R/L	CC□ T09T3□□	FTKA0410	TW15P
	1212-X09A	●	●	16	120	12	12	12	12	R/L			
	1616-X09A	●	●	16	120	16	16	16	16	R/L			

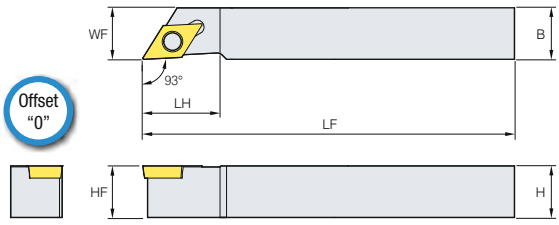
Applicable inserts **B44 ~ B48, B75, B162 ~ B163**

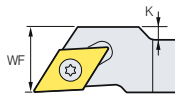
● : Stock item

SDJCR/L

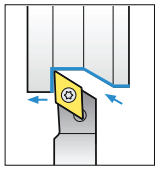


DC□T





※ Only SDJCR/L0808-X07A, 1010-X11A, 1212-X11A are designed as above picture.



93°

• R type holder

(mm)

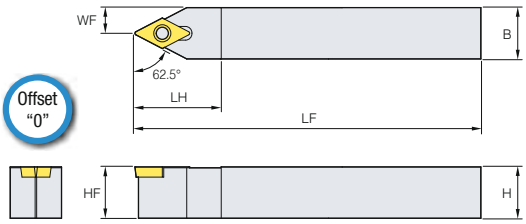
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SDJCR/L	0808-X07A	●	●	18	120	10	8	8	8	R/L	DC□ T0702□□	FTKA02565	TW07P
	1010-X07A	●	●	15	120	10	10	10	10	R/L			
	1010-X11A	●	●	18	120	14	10	10	10	R/L	DC□ T11T3□□	FTKA0410	TW15P
	1212-X11A	●	●	18	120	14	12	12	12	R/L			
	1616-X11A	●	●	22	120	16	16	16	16	R/L			

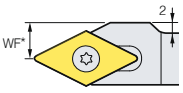
Applicable inserts **B50 ~ B53, B76, B163 ~ B165**

● : Stock item

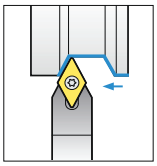
SDNCN

DC□T





※ Only SDNCN1010-X11A is designed as above picture.



62.5°

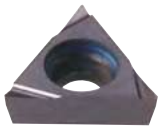
(mm)

Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SDNCN	0808-X07A	●	20	120	4	8	8	8	N	DC□T0702□□	FTKA02565	TW07P
	1010-X07A	●	20	120	5	10	10	10	N			
	1010-X11A	●	24	120	7	10	10	10	N	DC□T11T3□□	FTKA0410	TW15P
	1212-X11A	●	30	120	6	12	12	12	N			
	1616-X11A	●	30	120	8	16	16	16	N			

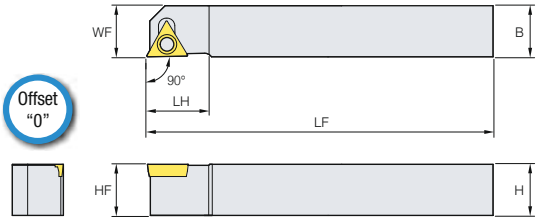
Applicable inserts **B50 ~ B53, B76, B163 ~ B165**

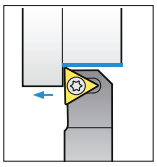
● : Stock item

STACR/L



TC□T





90°

• R type holder

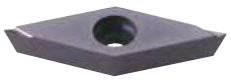
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
STACR/L	0808-X08A	●	●	12	120	8	8	8	8	R/L	TC□T0802□□	FTNA0206	TW06P
	1010-X08A	●	●	12	120	10	10	10	10	R/L			

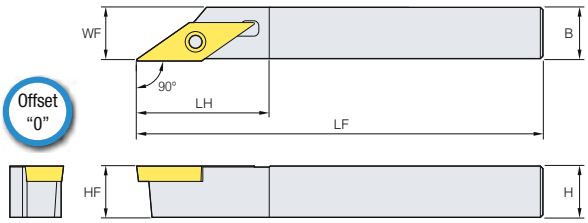
Applicable inserts **B165**

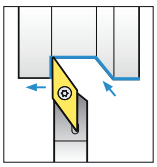
● : Stock item

SVACR/L



VC□□





90°

• R type holder

(mm)

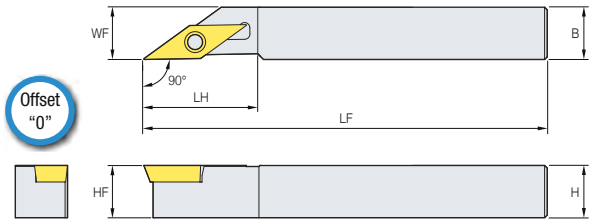
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SVACR/L	0808-X12A	●	●	26	120	8.468	8	8	8	R/L	VC□T1203□□	FTKA02565	TW07P
	1010-X12A	●	●	26	120	10.468	10	10	10	R/L			
	1212-X12A	●	●	26	120	12.468	12	12	12	R/L			
	1616-X12A	●	●	26	120	16.468	16	16	16	R/L			
SVACR/L	0808-X12C	●	●	26	120	8.468	8	8	8	R/L	VC□X1203□□	FTKA02565	TW07P
	1010-X12C	●	●	26	120	10.468	10	10	10	R/L			
	1212-X12C	●	●	26	120	12.468	12	12	12	R/L			
	1616-X12C	●	●	26	120	16.468	16	16	16	R/L			

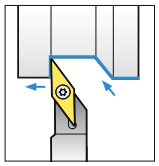
Applicable inserts **B68 ~ B70, B81, B166**

● : Stock item

SVAPR/L

VP□T





90°

• R type holder

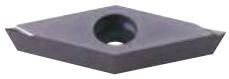
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SVAPR/L	0808-X11A		●	22	120	8	8	8	8	R/L	VP□T1103□□	FTKA02565	TW07P
	1010-X11A	●	●	22	120	10	10	10	10	R/L			
	1212-X11A	●	●	22	120	12	12	12	12	R/L			
	1616-X11A		●	24	120	16	16	16	16	R/L			

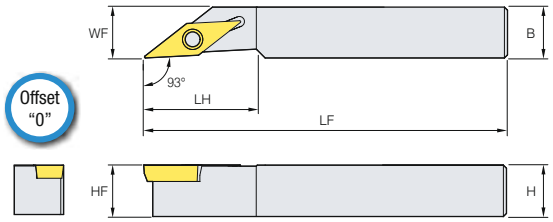
Applicable inserts **B71, B167**

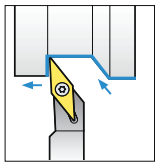
● : Stock item

SVJBR/L



VB□T





93°

• R type holder

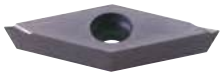
(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SVJBR/L	1010-X11A	●	●	22	120	10	10	10	10	R/L	VB□T1103□□	FTKA02565	TW07P
	1212-X11A	●	●	22	120	12	12	12	12	R/L			
	1616-X11A	●	●	24	120	16	16	16	16	R/L			

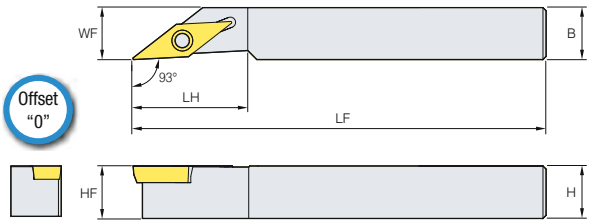
Applicable inserts **B65 ~ B67, B80, B165**

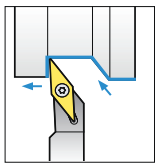
● : Stock item

SVJCR/L



VC□□





93°

• R type holder

(mm)

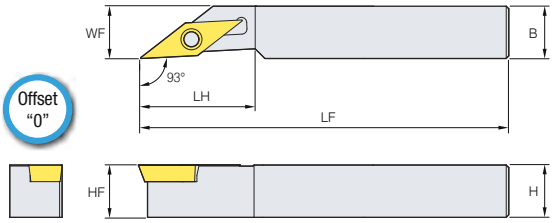
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SVJCR/L	1010-X11A	●	●	22	120	10	10	10	10	R/L	VC□T1103□□	FTKA02565	TW07P
	1212-X11A	●	●	22	120	12	12	12	12	R/L			
	1616-X11A	●	●	24	120	16	16	16	16	R/L			
	0810-X12A	●	●	26	120	10	8	10	8	R/L	VC□T1203□□	FTKA02565	TW07P
	1010-X12A	●	●	26	120	10	10	10	10	R/L			
	1212-X12A	●	●	26	120	12	12	12	12	R/L			
	1616-X12A	●	●	26	120	16	16	16	16	R/L			
SVJCR/L	0810-X12C	●	●	13.5	120	10	8	10	8	R/L	VC□X1203□□	FTKA02565	TW07P
	1010-X12C	●	●	13.5	120	10	10	10	10	R/L			
	1212-X12C	●	●	13.5	120	12	12	12	12	R/L			
	1616-X12C	●	●	13.5	120	16	16	16	16	R/L			

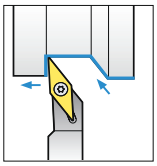
Applicable inserts **B68 ~ B70, B165 ~ B166**

● : Stock item

SVJPR/L

VP□T





93°

• R type holder

(mm)

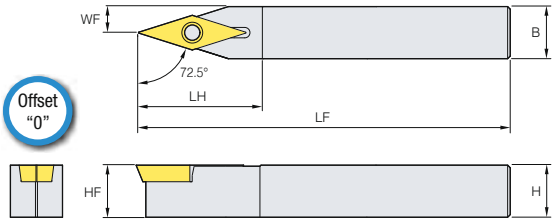
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SVJPR/L	0810-X11A	●	●	22	120	10	8	10	8	R/L	VP□T1103□□	FTKA02565	TW07P
	1010-X11A	●	●	22	120	10	10	10	10	R/L			
	1212-X11A	●	●	22	120	12	12	12	12	R/L			
	1616-X11A		●	24	120	16	16	16	16	R/L			

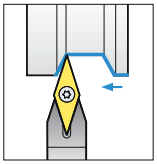
Applicable inserts **B71, B167**

● : Stock item

SVVPN

VP□T





72.5°

(mm)

Designation		Stock	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SVVPN	0808-X11A		24	120	4	8	8	8	N	VP□T1103□□	FTKA02565	TW07P
	1010-X11A	●	24	120	5	10	10	10	N			
	1212-X11A	●	24	120	6	12	12	12	N			
	1616-X11A	●	28	120	8	16	16	16	N			

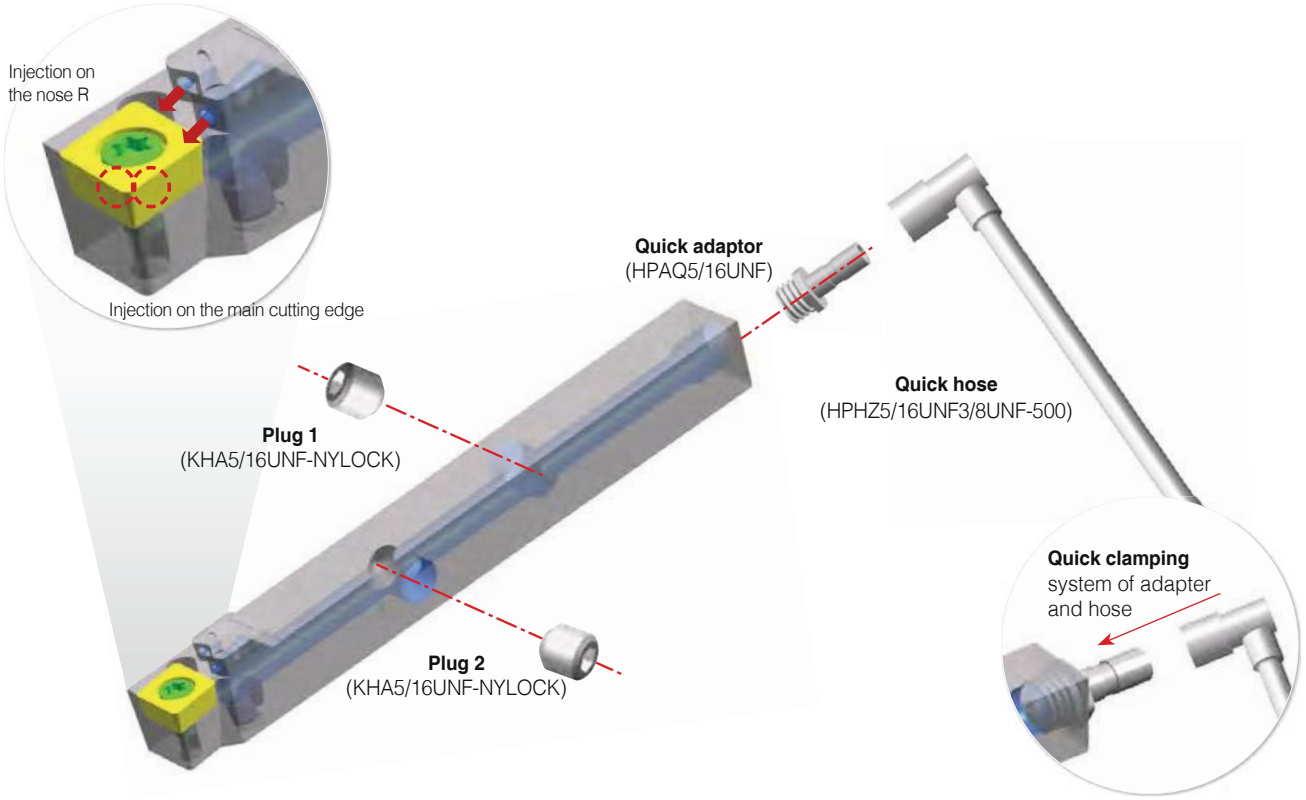
Applicable inserts **B71, B167**

● : Stock item

Auto Tools (KHP)

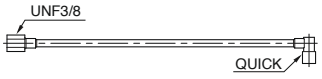
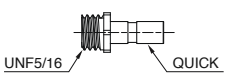
- High pressure coolant holder for high productivity of precise parts machining on automatic lathe
- Improved cooling and chip control due to injecting coolant through two holes to the main cutting edge and nose R concentrically
- Two holes with different injection angles each other increase chip control
- Easy clamping system of quick hose adapter and quick hose provides convenient using

Structure of holder



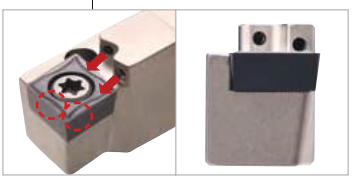
※ Quick adapter and quick hose are sold separately

Parts

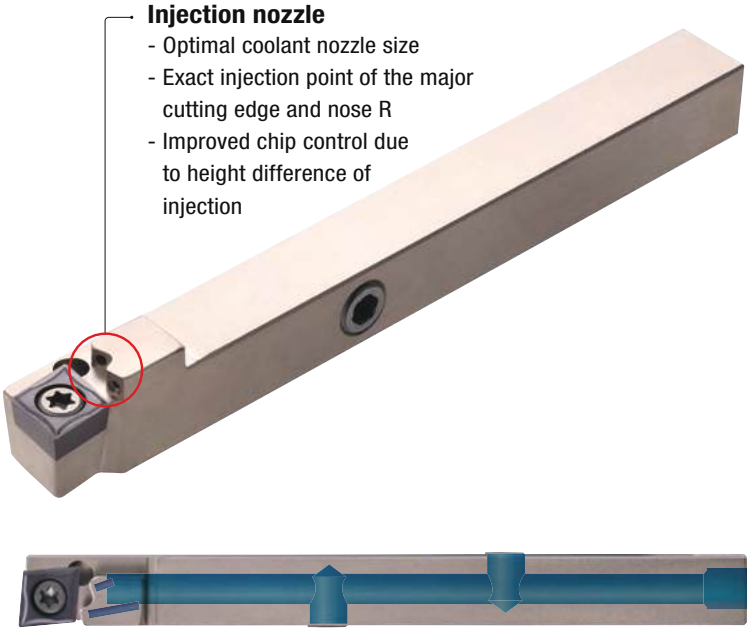
Shape		Configuration	Length	Q clamping dimensions	S clamping dimensions
Quick to straight	HPHZ5/16UNF3/8UNF-500	Q  S	500mm	UNF5/16	-
Quick adaptor	HPAQ5/16UNF		18.5mm	UNF5/16	

Features

2 pointed injection with different angles

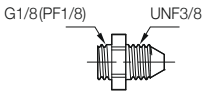
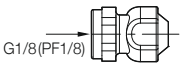
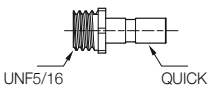


Injection nozzle
- Optimal coolant nozzle size
- Exact injection point of the major cutting edge and nose R
- Improved chip control due to height difference of injection



Max 300 bar		
Workpiece	The minimum pressure	The maximum pressure
P	100	300
M	120	
K	110	
N	100	
S	120	

Parts

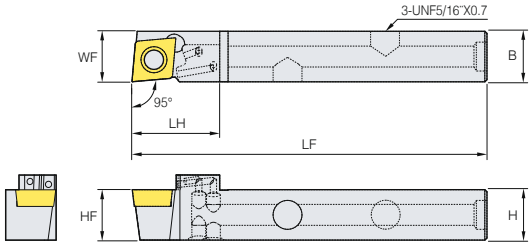
Division	Designation	Shape	
Adaptor	HPA3/8UNF1/8PF		
Blank	HPB1/8PF		
Quick adaptor	HPAQ5/16UNF		

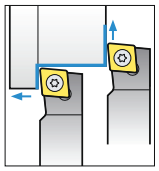
High pressure hose

Shape		length	Q clamping dimensions	S clamping dimensions
Quick to straight (HPHZ5/16UNF3/8UNF-500)		500mm	UNF5/16	-

SCLCR/L

CC□T





95°

• R type holder

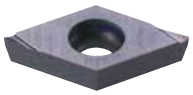
(mm)

Designation	Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Plug	Wrench
SCLCR/L 1212-X09A-KHP	●	●	21	120	12	12	12	12	R/L	CC□T09T3□□	FTKA0410	KHA0404-NYLOCK	TW15P

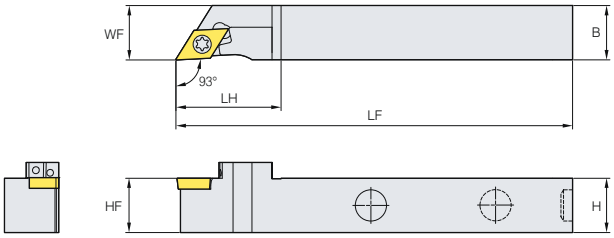
Applicable inserts **B44 ~ B48**

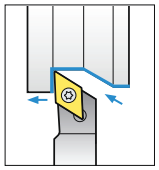
● : Stock item

SDJCR/L



DC□T





93°

• R type holder

(mm)

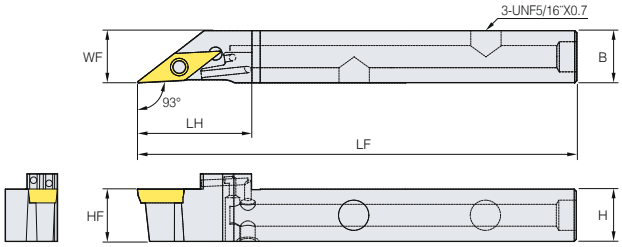
Designation	Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Plug	Wrench
SDJCR/L 1212-X07A-KHP	●	●	21	120	12	12	12	12	R/L	DC□T0702□□	FTKA02565	KHA0404-NYLOCK	TW07P
1212-X11A-KHP	●	●	21	120	14	12	12	12	R/L	DC□T11T3□□	FTKA0408	KHA0404-NYLOCK	TW15P

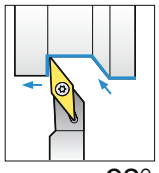
Applicable inserts **B50 ~ B53**

● : Stock item

SVJCR/L

VC□□





93°

• R type holder

(mm)

Designation	Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Plug	Wrench
SVJCR/L 1212-X11A-KHP	●	●	26	120	12	12	12	12	R/L	VC□T1103□□	FTKA02565	KHA0404-NYLOCK	TW07P
1212-X12A-KHP	●	●	26	120	12	12	12	12	R/L	VC□□1203□□	FTKA02565	KHA0404-NYLOCK	TW07P

Applicable inserts **B68 ~ B70**

● : Stock item

Auto Tools (Blade)

- Blade insert for automatic lathes
- For external machining of precise small parts
- 4 types - SSB (for back turning), SGB (for grooving), SBT (for threading), SBC (for parting off)
- Convenient use of one holder to all blade inserts
- Exclusive holder for close cutting action to the sub spindle

Code system

• Insert

Turning (Back turning)

SB	B	R	25	005
Small blade	Back turning	Hand R: Right L: Left	Length of insert	Nose radius

Grooving

SB	G	R	25	20
Small blade	Grooving	Hand R: Right L: Left	Length of insert	Width of cutting edge

Threading

SB	T	R	25	60	-	N	-	010
Small blade	Threading	Hand R: Right L: Left	Length of insert	Angle of thread		Hand of thread R: Right L: Left N: Neutral		Nose radius

Parting

SB	C	R	25	20	16	-	N
Small blade	Cut off / Parting	Hand R: Right L: Left	Length of insert	Width of cutting edge	Max. machining diameter		Hand of thread R: Right L: Left N: None

• Holder

SB	H	R	10	10	-	K25	-	X
Small blade	Holder	Hand R: Right L: Left	Height of shank	Width of shank		Length of insert		Sub spindle

Types of blade insert

Possible to apply various types of blade inserts to one holder

SBB : For back turning

- Approach angle: 59°
- Max. cutting depth: 4 mm
- Nose R: 0.05, 0.1, 0.2 mm

SBG : For grooving

- Width: 0.5~2.5 mm
- Nose R: 0.05 mm

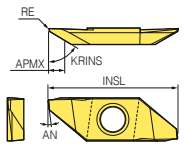
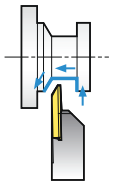
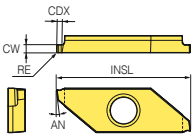
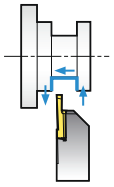
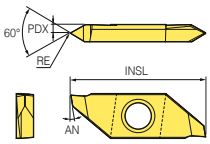
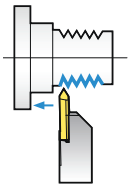
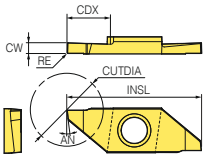
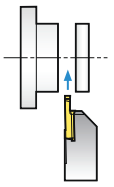
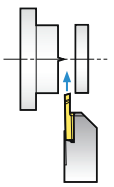
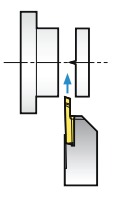
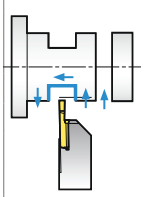
SBT : For threading

- V profile: 60°
- Pitch: 0.2~1.0 mm
- Nose R: 0.05 mm

SBC : For cut off/Parting

- Cutting width: 0.7~2.0
- DMax.: 16 mm
- Nose R: 0.05 mm

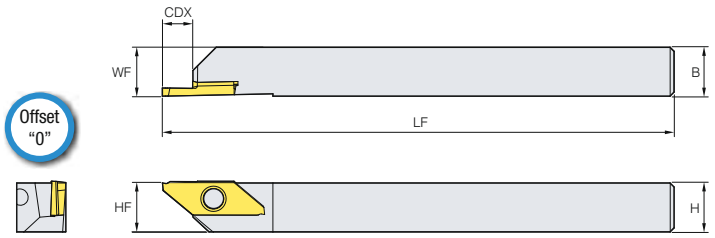
Applicable insert

Application	Picture	Designation		Coated PC8110 R	Coated PC8110 L	Coated PC5300 R	Coated PC5300 L	Dimensions (mm) PDX	APMX	CW	RE	KRINS	INSL	AN	HAND	Configuration	Feed direction
Back turning	SBBR/L	SBBR/L	25005	●	●	●	●	-	4	0.55	0.05	59	25	6	R/L		
			25010	●	●	●	●	-	4	0.55	0.1	59	25	6	R/L		
			25020	●	●	●	●	-	4	0.55	0.2	59	25	6	R/L		
Grooving	SBGR/L	SBGR/L	2505	●	●	●	●	-	1.35	0.5	0.05	-	25	6	R/L		
			2510	●	●	●		-	2.75	1	0.05	-	25	6	R/L		
			2515	●	●		●	-	3.75	1.5	0.05	-	25	6	R/L		
			2520	●	●	●		-	3.75	2	0.05	-	25	6	R/L		
			2525	●	●	●		-	3.75	2.5	0.05	-	25	6	R/L		
Threading	SBTR/L	SBTR/L	2560-N-005	●	●	●	●	1.59	-	-	0.05	-	25	9.5	R/L		
			2560-N-010	●	●	●	●	1.59	-	-	0.1	-	25	9.5	R/L		
			2560-R-005	●	●	●	●	0.6	-	-	0.05	-	25	9.5	R/L		
			2560-R-010	●	●		●	0.6	-	-	0.1	-	25	9.5	R/L		
			2560-L-005		●		●	0.6	-	-	0.05	-	25	9.5	R/L		
			2560-L-010					0.6	-	-	0.1	-	25	9.5	R/L		
Parting off	SBCR/L	SBCR/L	250708-N	●		●	●	-	8	0.7	0.05	0	25	6	R/L		
			251012-N	●	●	●	●	-	12	1	0.05	0	25	6	R/L		
			251512-N	●	●	●		-	12	1.5	0.05	0	25	6	R/L		
			252016-N	●	●	●	●	-	16	2	0.05	0	25	6	R/L		
			250708-R	●		●		-	8	0.7	0.05	15	25	6	R/L		
			251012-R	●	●	●	●	-	12	1	0.05	15	25	6	R/L		
			251512-R	●		●		-	12	1.5	0.05	15	25	6	R/L		
			252016-R	●	●	●		-	16	2	0.05	15	25	6	R/L		
			250708-L				●	-	8	0.7	0.05	15	25	6	R/L		
			251012-L	●	●			-	12	1	0.05	15	25	6	R/L		
			251512-L	●	●	●		-	12	1.5	0.05	15	25	6	R/L		
			252016-L	●	●			-	16	2	0.05	15	25	6	R/L		
			251012-T		●	●	●	-	12	1	0.05	0	25	6	R/L		
			251512-T	●	●	●	●	-	12	1.5	0.05	0	25	6	R/L		
			252016-T	●	●	●	●	-	16	2	0.05	0	25	6	R/L		

● : Stock item

SBHR/L

SBBR SBGR
SBTR SBCR



(mm)

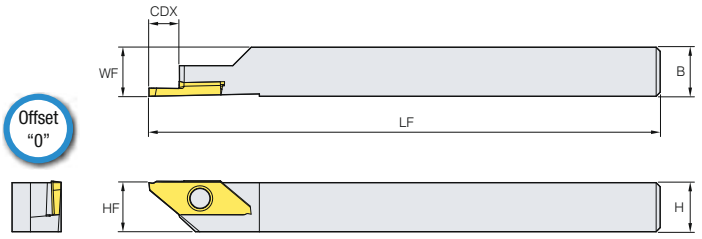
Designation		Stock R	Stock L	CDX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SBHR/L	1010-K25	●	●	7.5	125	10	10	10	10	R/L	SB□R/L25	FTKA0409S	TW09P
	1212-K25	●	●	7.5	125	12	12	12	12	R/L			
	1616-K25	●	●	7.5	125	16	16	16	16	R/L			

Applicable inserts **B176**

● : Stock item

SBHR/L-X (Sub spindle)

SBBR SBGR
SBTR SBCR



(mm)

Designation		Stock R	Stock L	CDX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SBHR/L	1010-K25-X	●	●	7.5	80	10	12.15	10	10	R/L	SB□R/L25	FTKA0407S	TW09P
	1212-K25-X	●	●	7.5	125	12	12	12	12	R/L			

Applicable inserts **B176**

● : Stock item

Auto Tools (Multi utility)

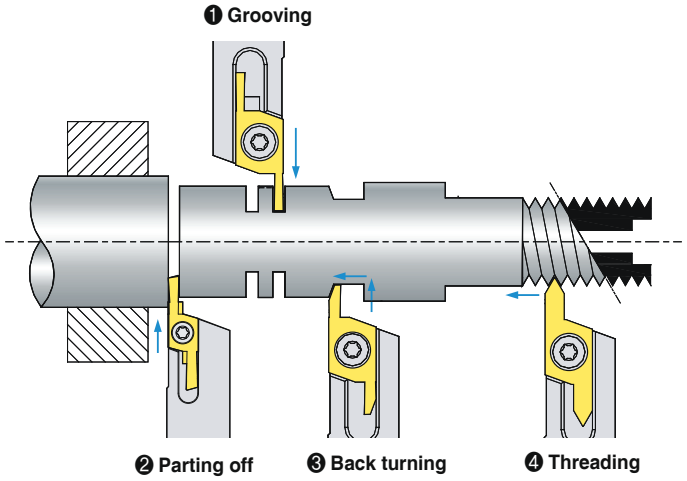
- Multifunctional insert for automatic lathes
- For external machining of precise small parts
- 5 types - SB (for back turning), SG (for grooving), ST (for threading), SC (for parting off), SGB (for grooving and back turning)
- Convenient use of one holder to all inserts
- Offset "0" to all ISO type holders

Code system

S	G	R	06	06	10	(15 - 10)	-	R05

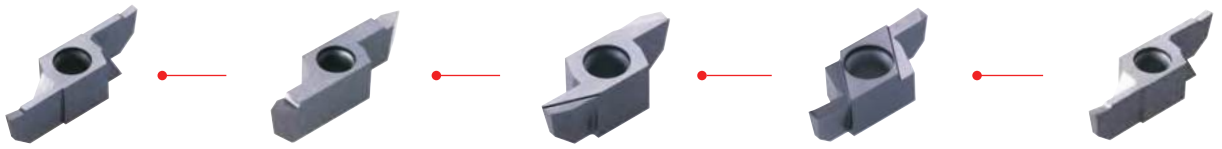
- **S** — **Small Auto Tool**
- **G** — **Application**: B: Back turning, G: Grooving, C: Parting off, T: Threading, GB: Grooving and back turning
- **R** — **Hand**: R: Right, L: Left
- **06** — **Height of cutting edge**
- **06** — **Cutting depth**
- **10** — **Width of cutting edge**
- **(15 - 10)** — **Pitch of thread insert** / **Initial cutting width of back turning insert**
- **R05** — **Nose radius**

Application example



Types of multifunctional insert

Possible to apply various types of blade inserts to one holder (Ex: All designations of 06 size inserts can be applied to one 06 size holder.)



SG : Grooving	ST: Threading	SB: Back turning	SGB: Grooving and back turning	SC: PARTING OFF

Recommended cutting conditions

Workpiece		Turning		Grooving		Parting off		Back turning	
		Cutting speed, vc (m/min)	Feed, fn (mm/rev)	Cutting speed, vc (m/min)	Feed, fn (mm/rev)	Cutting speed, vc (m/min)	Feed, fn (mm/rev)	Cutting speed, vc (m/min)	Feed, fn (mm/rev)
P	Carbon steel	50~150	0.01~0.25	50~150	0.02~0.08	50~150	0.01~0.08	50~150	0.01~0.25
	Free cutting steel	30~150	0.02~0.25	30~150	0.02~0.08	30~150	0.01~0.08	30~150	0.01~0.25
M	Stainless steel	50~120	0.02~0.20	30~120	0.02~0.05	30~120	0.02~0.05	30~120	0.02~0.20
N	Non-ferrous metal	70~200	0.03~0.25	70~200	0.03~0.10	70~200	0.03~0.10	70~200	0.03~0.30

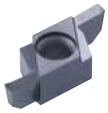
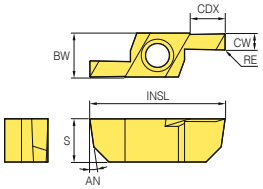
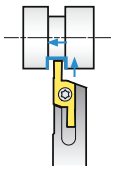
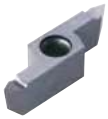
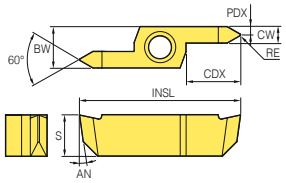
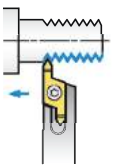
Applicable insert

Application	Picture	Designation		Coated PC9030 R	Coated PC9030 L	SSC	CDX	CUTDIA	CW	RE	BW	S	INSL	AN	Configuration	Feed direction
Back turning	SBR/L	SBR/L	060520-10-R00			60	5.5	-	1	0	8	6	22	10		
			060520-10-R05			60	5.5	-	1	0.05	8	6	22	10		
			060520-10-R10			60	6.5	-	1	0.1	8	6	22	10		
			060630-20-R00			60	6.5	-	2	0	8	6	24	10		
			060630-20-R05			60	6.5	-	2	0.05	8	6	24	10		
			060630-20-R10			60	6.5	-	2	0.1	8	6	24	10		
			080630-20-R00			80	6.5	-	2	0	8	8	23	10		
			080630-20-R05			80	6.5	-	2	0.05	8	8	23	10		
			080630-20-R10			80	6.5	-	2	0.1	8	8	23	10		
			080840-20-R00			80	8.5	-	2	0	8	8	27	10		
			080840-20-R05			80	8.5	-	2	0.05	8	8	27	10		
			080840-20-R10			80	8.5	-	2	0.1	8	8	27	10		
Parting off	SCR/L	SCR/L	060610-R00			60	-	11	1	0	8	6	24	8		
			060610-R05	●		60	-	11	1	0.05	8	6	24	8		
			060610-R10	●		60	-	11	1	0.1	8	6	24	8		
			060615-R00			60	-	11	1.5	0	8	6	24	8		
			060615-R05	●		60	-	11	1.5	0.05	8	6	24	8		
			060615-R10	●		60	-	11	1.5	0.1	8	6	24	8		
			060620-R00			60	-	11	2	0	8	6	24	8		
			060620-R05	●		60	-	11	2	0.05	8	6	24	8		
			060620-R10	●		60	-	11	2	0.1	8	6	24	8		
			081015-R00			80	-	18	1.5	0	8	8	31	8		
			081015-R05			80	-	18	1.5	0.05	8	8	31	8		
			081015-R10			80	-	18	1.5	0.1	8	8	31	8		
			081020-R00			80	-	18	2	0	8	8	31	8		
			081020-R05			80	-	18	2	0.05	8	8	31	8		
			081020-R10	●		80	-	18	2	0.1	8	8	31	8		
			081025-R00			80	-	18	2.5	0	8	8	31	8		
			081025-R05	●		80	-	18	2.5	0.05	8	8	31	8		
			081025-R10	●		80	-	18	2.5	0.1	8	8	31	8		
			081030-R00			80	-	18	3	0	8	8	31	8		
			081030-R05			80	-	18	3	0.05	8	8	31	8		
			081030-R10			80	-	18	3	0.1	8	8	31	8		

Application	Picture	Designation		Coated PC9030 R	Coated PC9030 L	SSC	CDX	CUT-DIA	CW	RE	BW	S	INSL	AN	HAND	Configuration	Feed direction
Grooving	SGR/L	SGR/L	060610-R00			60	11	-	1	0	8	6	24	8	R		
			060610-R05	●		60	11	-	1	0.05	8	6	24	8	R		
			060610-R10	●		60	11	-	1	0.1	8	6	24	8	R		
			060615-R00			60	11	-	1.5	0	8	6	24	8	R		
			060615-R05	●		60	11	-	1.5	0.05	8	6	24	8	R		
			060615-R10	●		60	11	-	1.5	0.1	8	6	24	8	R		
			060620-R00			60	11	-	2	0	8	6	24	8	R		
			060620-R05	●		60	11	-	2	0.05	8	6	24	8	R		
			060620-R10			60	11	-	2	0.1	8	6	24	8	R		
			081015-R00			80	18	-	1.5	0	8	8	31	8	R		
			081015-R05			80	18	-	1.5	0.05	8	8	31	8	R		
			081015-R10			80	18	-	1.5	0.1	8	8	31	8	R		
			081020-R00			80	18	-	2	0	8	8	31	8	R		
			081020-R05	●		80	18	-	2	0.05	8	8	31	8	R		
			081020-R10			80	18	-	2	0.1	8	8	31	8	R		
			081025-R00			80	18	-	2.5	0	8	8	31	8	R		
			081025-R05			80	18	-	2.5	0.05	8	8	31	8	R		
			081025-R10			80	18	-	2.5	0.1	8	8	31	8	R		
			081030-R00			80	18	-	3	0	8	8	31	8	R		
			081030-R05			80	18	-	3	0.05	8	8	31	8	R		
			081030-R10			80	18	-	3	0.1	8	8	31	8	R		

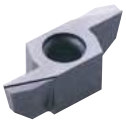
● : Stock item

Applicable insert

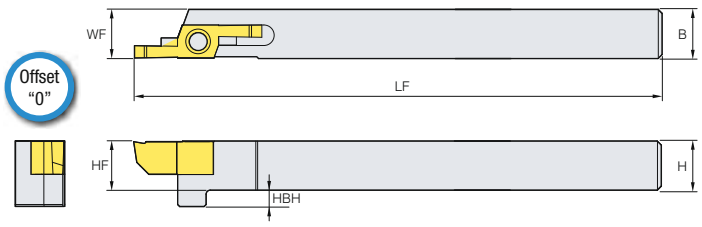
Application	Picture	Designation		Coated PC9030 R	Coated PC9030 L	SSC	CDX	CUT-DIA	CW	RE	BW	S	INSL	AN	HAND	Configuration	Feed direction
Grooving and back turning	SGBR/L 	SGBR/L	0604520-R00			60	-	4.5	2	0	8	6	22	8	R/L		
			0604520-R05			60	-	4.5	2	0.05	8	6	22	8	R/L		
			0604520-R10			60	-	4.5	2	0.1	8	6	22	8	R/L		
			0604525-R00			60	-	4.5	2.5	0	8	6	22	8	R/L		
			0604525-R05			60	-	4.5	2.5	0.05	8	6	22	8	R/L		
			0604525-R10			60	-	4.5	2.5	0.1	8	6	22	8	R/L		
			0605530-R00			60	-	5.5	3	0	8	6	24	8	R/L		
			0605530-R05			60	-	5.5	3	0.05	8	6	24	8	R/L		
			0605530-R10			60	-	5.5	3	0.1	8	6	24	8	R/L		
			0805525-R00			80	-	5.5	2.5	0	8	8	24	8	R/L		
			0805525-R05			80	-	5.5	2.5	0.05	8	8	24	8	R/L		
			0805525-R10			80	-	5.5	2.5	0.1	8	8	24	8	R/L		
			0806530-R00			80	-	6.5	3	0	8	8	26	8	R/L		
			0806530-R05			80	-	6.5	3	0.05	8	8	26	8	R/L		
			0806530-R10			80	-	6.5	3	0.1	8	8	26	8	R/L		
Threading	STR/L 	STR/L	06073215			60	-	7	3.2	0.06	8	6	25	8	R/L		
			06073230			60	-	7	3.2	0.19	8	6	25	8	R/L		
			08103215			80	-	10.5	3.2	0.06	8	8	31	8	R/L		
			08103230			80	-	10.5	3.2	0.19	8	8	31	8	R/L		

● : Stock item

SXGNR/L



SBR, SGBR
SCR, STR, SGR



(mm)

Designation		Stock R	Stock L	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SXGNR/L	1010-X06A	●		125	9.85	9.85	10	10	R/L	S□R/L 06	FTNA 0408	TW 15P
	1212-X06A	●		125	11.85	11.85	12	12	R/L			
	1616-X06A	●		125	15.85	15.85	16	16	R/L			
	2020-X06A	●		125	19.85	19.85	20	20	R/L			
	1212-X08A	●		130	11.85	11.85	12	12	R/L	S□R/L 08	FTNA 0411	TW 15P
	1616-X08A			130	15.85	15.85	16	16	R/L			
	2020-X08A			130	19.85	19.85	20	20	R/L			

● : Stock item

Auto Tools (KGT/MGT)

- Grooving insert for automatic lathes
- Exclusive holder for automatic lathes
- Economic double sided insert
- Strong clamping system secures stable machining and precision.
- A wide selection of chip breakers according to various cutting conditions such as low/high feed, continuous/interrupted machining, etc.

Code system

• Insert

KG	M	N	300	-	04	-	T
System code	**Tolerance**	**Hand**	**Width of cutting edge**		**Corner nose radius of insert**		**Chip breaker**
KG SYSTEM (KORLOY Grooving) MG SYSTEM (Multi Grooving)	M: Pressed class G: Ground class	N: Neutral R: Right L: Left I : Internal	2.0~8.0 mm		0.2mm 0.3mm 0.4mm		L / R / T / C LP / RP

• Holder

KG	E	H	R/L	1212	-	3	D25A
System code	**Application**	**Holder type**	**Hand**	**Shank size**		**Cutting width**	**Max. cutting diameter**
KG SYSTEM (KORLOY Grooving) MG SYSTEM (Multi Grooving)	E: External machining I : Internal machining	H: Horizontal type V: Vertical type U: Undercut type	R: Right L: Left	Height 12 mm, Width 12mm (For internal machining: Min. machining diameter)		2.0~8.0mm	Ø15~Ø32mm

Chip breaker line-up

• KGT Type

KGMN-L

- Sharp cutting edge
- For low feed machining
- For small diameter parts

KGMN-R

- Reinforced cutting edge
- For high feed machining
- For interrupted cutting

KGMN-T

- Sharp cutting edge
- Stronger chip control
- For turning and grooving

KGMR/L-LP

- Sharp cutting edge
- For low feed machining
- Small diameter component
- Right/Left handed

KGMR/L-RP

- Strong cutting edge
- For high feed machining
- For interrupted cutting
- Right/Left handed

KGMN-C

- Improved chip control
- Copying
- Relief
- Cast iron
- Alloy steel
- Carbon steel
- Stainless

• MGT Type

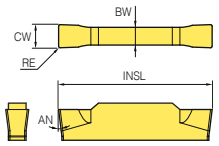
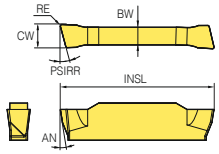
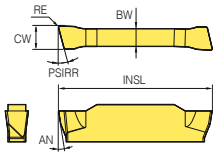
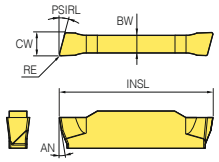
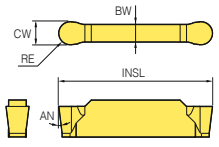
MGM(G)N-M

- Easier chip control by narrowing chip width with the use of chip breaker on rake surface center
- Smooth chip flow by small dots in external machining
- Available for both external machining and grooving

MGMN-G

- Specially designed chip breaker allows narrower chips to promote better chip flow with the use of center dots
- Exclusive chip breaker for grooving

KGT Applicable insert

Application	Picture	Designation		Coated							Dimensions (mm)							Configuration
				NC3120	NC3225	NC5330	NC6315	PC3035	PC5300	PC9030	SSC	CW	RE	BW	INSL	AN	HAND	
Grooving	KGMN-L	KGMN	200-02-L		●	●		●	●	●	20	2	0.2	1.7	20	7	N	
			300-02-L		●	●		●	●	●	30	3	0.2	2.3	20	7	N	
Grooving. Parting off	KGMN-R	KGMN	200-02-R		●	●		●	●	●	20	2	0.2	1.7	20	7	N	
			300-02-R		●	●		●	●	●	30	3	0.2	2.3	20	7	N	
Grooving.turning	KGMN-T	KGMN	200-02-T		●	●		●	●	●	20	2	0.2	1.7	20	7	N	
			300-02-T		●	●		●	●	●	30	3	0.2	2.3	20	7	N	
			300-04-T		●	●		●	●	●	30	3	0.4	2.3	20	7	N	
Parting off (Right handed)	KGMR-LP	KGMR	200-6D-LP			●			●		20	2	0.2	1.7	20	7	R	
			200-15D-LP			●			●		20	2	0.2	1.7	20	7	R	
			300-6D-LP			●			●		30	3	0.2	2.3	20	7	R	
			300-15D-LP			●			●		30	3	0.2	2.3	20	7	R	
Parting off (Right handed)	KGMR-RP	KGMR	200-6D-RP			●			●		20	2	0.2	1.7	20	7	R	
			200-15D-RP			●			●		20	2	0.2	1.7	20	7	R	
			300-6D-RP			●			●		30	3	0.2	2.3	20	7	R	
			300-15D-RP			●			●		30	3	0.2	2.3	20	7	R	
Parting off (Left handed)	KGML-LP	KGML	200-6D-LP								20	2	0.2	1.7	20	7	L	
			200-15D-LP								20	2	0.2	1.7	20	7	L	
			300-6D-LP								30	3	0.2	2.3	20	7	L	
			300-15D-LP								30	3	0.2	2.3	20	7	L	
Parting off (Left handed)	KGML-RP	KGML	200-6D-RP								20	2	0.2	1.7	20	7	L	
			200-15D-RP								20	2	0.2	1.7	20	7	L	
			300-6D-RP								30	3	0.2	2.3	20	7	L	
			300-15D-RP								30	3	0.2	2.3	20	7	L	
Copying	KRMN-C	KRMN	200-C		●	●	●	●	●		20	2	1	1.7	20	5	N	
			300-C		●	●	●	●	●		30	3	1.5	2.2	20	7	N	

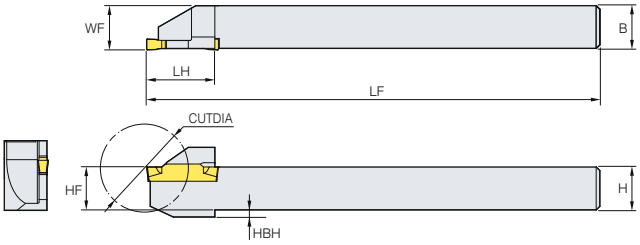
● : Stock item

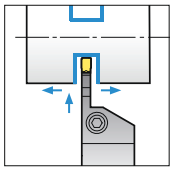
KGEHR/L-D00A

Grooving, turning, parting off

Compact type

KGGN KGMN KGMR/L
KRGN KRMN





• R type holder

(mm)

Designation		Stock		Dimensions (mm)							Applicable insert	Screw	Wrench
		R	L	LF	WF	HF	B	H	HBH	HAND			
KGEHR/L	1010-2-D20A	●	●	125	10.2	10	10	10	2	R/L	KGMN200-□-□ KGMR/L200-□-□ KRMN200-C	ETNA0412	TW15L
	1212-2-D25A	●	●	125	12.2	12	12	12	2	R/L			
	1414-2-D25A	●	●	125	14.2	14	14	14	-	R/L			
	1616-2-D32A	●	●	125	16.2	16	16	16	-	R/L			
	1212-3-D25A	●	●	125	12.4	12	12	12	2	R/L	KGMN300-□-□ KGMR/L300-□-□ KRMN300-C		
	1616-3-D32A	●	●	125	16.4	16	16	16	-	R/L			

Applicable inserts **B182**

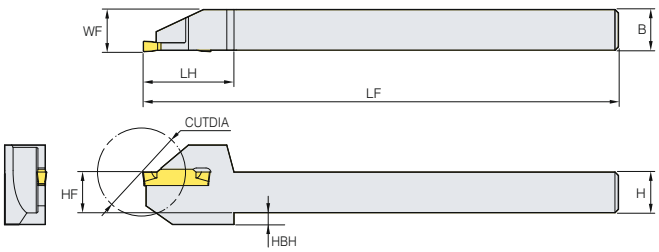
● : Stock item

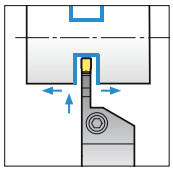
KGEHR/L-D00B

Grooving, turning, parting off

High rigidity type

KGGN KGMN KGMR/L
KRGN KRMN





• R type holder

(mm)

Designation		Stock		Dimensions (mm)							Applicable insert	Screw	Wrench
		R	L	LF	WF	HF	B	H	HBH	HAND			
KGEHR/L	1010-2-D30B	●	●	140	10.2	10	10	10	6.6	R/L	KGMN200-□-□ KGMR/L200-□-□ KRMN200-C	MHA0512	HW40L
	1212-2-D25B	●	●	140	12.2	12	12	12	3.5	R/L			
	1212-2-D30B	●	●	140	12.2	12	12	12	3.5	R/L			
	1616-2-D32B	●	●	140	16.2	16	16	16	-	R/L			
	1212-3-D25B	●	●	140	12.4	12	12	12	3.5	R/L	KGMN300-□-□ KGMR/L300-□-□ KRMN300-C		
	1212-3-D32B	●	●	140	12.4	12	12	12	3.5	R/L			
	1616-3-D32B	●	●	140	16.4	16	16	16	-	R/L			

Applicable inserts **B182**

● : Stock item

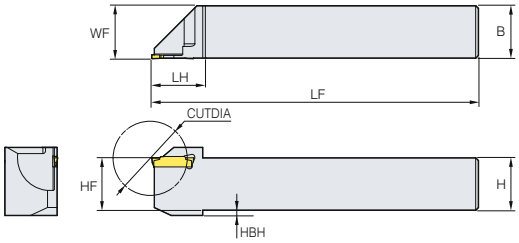
MGT Plus / MGT Applicable inserts

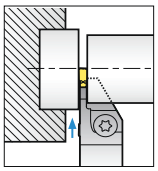
Application	Picture	Designation		Coated							Uncoated			Dimensions (mm)							Configuration
				NC3120	NC3225	NC3030	NC3235	NC5330	NC6315	PC3035	PC5300	PC9030	H01	G10	ST30A	SSC	CW	RE	BW	INSL	AN	HAND	
Grooving · Turning	PGMN-MM	PGMN	200-02-MM		●		●			●	●	●					2.00	0.2	1.6	16			
Grooving	PGMN-GM	PGMN	150-015-GM		●		●			●	●	●					1.50	0.15	1.2	16			
			200-02-GM		●		●			●	●	●					2.00	0.2	1.6	16			
			250-02-GM		●		●			●	●	●					2.50	0.2	2.0	18.5			
Reliefing Profiling	PRMN-RM	PRMN	200-RM		●		●			●	●	●					2.00	1.0	1.6	16			
Grooving	MGMN-G	MGMN	150-G		●	●					●	●	●			15	1.5	0.15	1.2	16	7	N	
			200-G	●	●	●						●	●			20	2	0.2	1.6	16	7	N	
			250-G		●	●						●	●			25	2.5	0.2	2	18.5	7	N	
Grooving · Turning	MGMN-M	MGMN	200-M	●	●	●		●			●	●	●			20	2	0.2	1.6	16	7	N	
			250-M	●	●	●						●	●			25	2.5	0.2	2	18.5	7	N	

● : Stock item

MGEHR/L

PGMN PRMN MGMN





• R type holder

(mm)

Designation		Stock R	Stock L	LF	WF	HF	B	H	HBH	HAND	Applicable insert	Screw	Wrench
MGEHR/L	1010-X15A	●		125	10.2	10	10	10	2	R/L	PGMN150-□-□ MGMN150-G	ETNA 0412	TW 15L
	1212-X15A	●		125	12.2	12	12	12	2	R/L			
	1010-X20A	●		125	10.25	10	10	10	2	R/L	PGMN200-□-□ PRMN200-□ MGMN200-M MGMN200-G	ETNA 0412	TW 15L
	1212-X20A	●		125	12.25	12	12	12	2	R/L			
	1616-X20A			125	16.25	16	16	16	2	R/L			
	1010-X25A			125	10.3	10	10	10	2	R/L	PGMN250-□-□ MGMN250-M MGMN250-G	ETNA 0412	TW 15L
	1212-X25A	●		125	12.3	12	12	12	2	R/L			
	1616-X25A			125	16.3	16	16	16	2	R/L			

● : Stock item

MSB Plus

The premium solid boring tool

- Applicable for various cutting types : Boring, grooving, threading, and face grooving etc.
- Suitable for high precision cutting due to internal coolant and precise strong clamping system

Code system

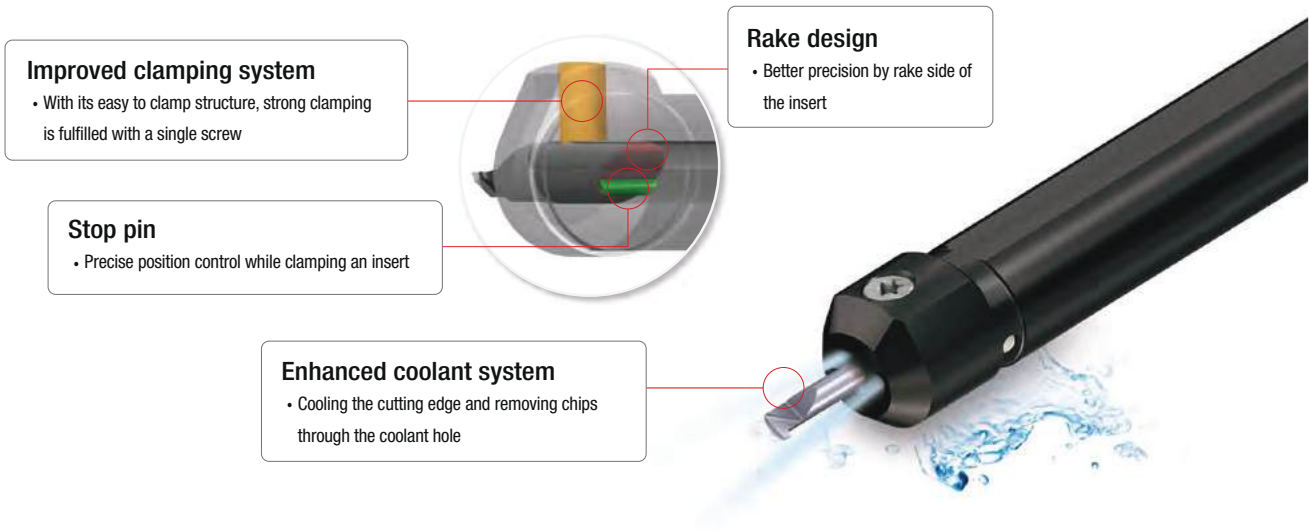
• Insert

M	BC	R	4	30	L22	(C)	-	R015
MSB Plus	**Use** BC: Boring BCB: Boring (chip breaker) BCF: Boring (chip former) CBLF: Boring & Profiling (chip breaker) CL: Boring & Profiling FG: Face grooving internal FP: Face grooving external FGR: Round face grooving internal GS: Square grooving PP: Pre-part off	**Handed** R: Right handed L: Left handed	**Shank Dia.** 4: 4.0mm 5: 5.0mm 6: 6.0mm 7: 7.0mm	**Min. Machining Dia.** 10: 1.0mm 22: 2.2mm 30: 3.0mm 42: 4.2mm 59: 5.9mm	**Max. Machining Depth** 10: 10mm 22: 22mm 30: 30mm 42: 42mm 59: 59mm	**Coolant** C: High Pressure Coolant		**Radius / Width** R015: 0.15mm R100: 1.00mm R150: 1.50mm W015: 0.15mm W100: 1.00mm W150: 1.50mm

• Holder

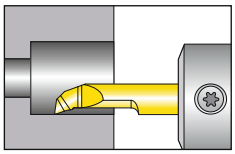
MH	R	N	C	4	-22	(-4)	(-2F)
MSB Plus Holder	**Use** R: MSB Plus Round shank holder	**Shank type** N: Neck type R: Round type S: Shrink holder	**Coolant** C: Coolant	**Bore size (1)** 4: Ø4.0mm 5: Ø5.0mm 6: Ø6.0mm 7: Ø7.0mm	**Shank size** 22: Ø22.0mm	**Bore size (2)** 4: Ø4.0mm 5: Ø5.0mm 6: Ø6.0mm 7: Ø7.0mm	**No. of flat side** 2F: 2 flat sides 4F: 4 flat sides

Features

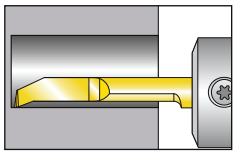


Application range

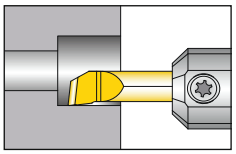
» Boring



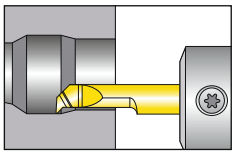
Boring



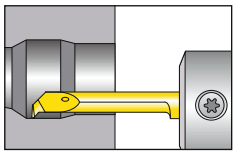
Boring (chip breaker)



Boring (chip former)

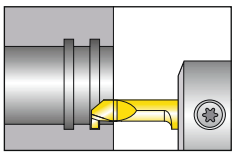


Boring & Profiling (CL)

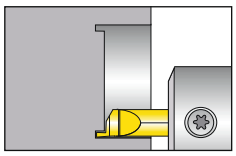


Boring & Profiling (CBLF chip breaker)

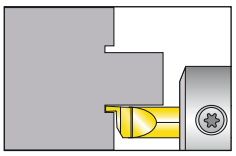
» Grooving



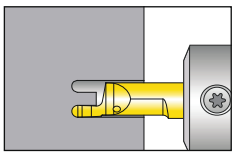
Square grooving



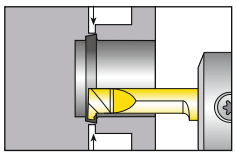
Face grooving internal



Face grooving external

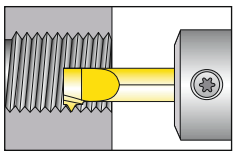


Round face grooving internal



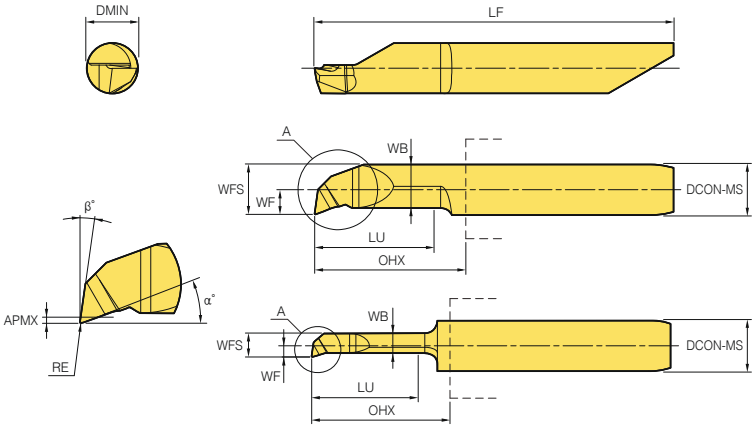
Pre-part off

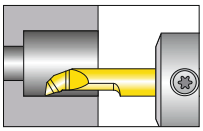
» Threading



Threading

Boring



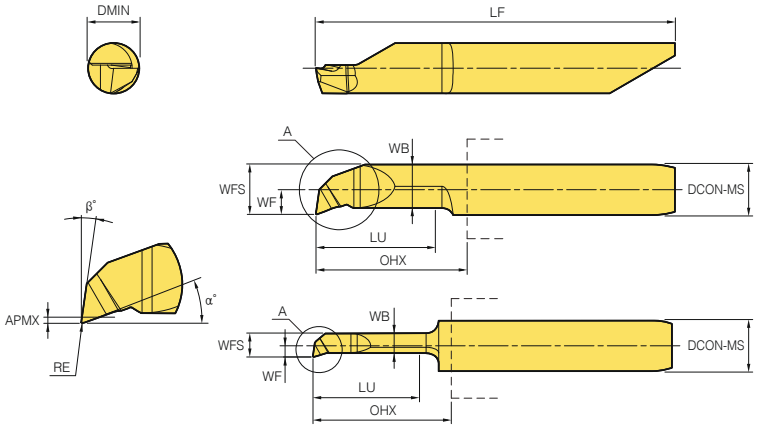


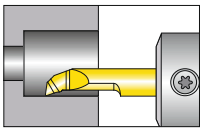
For internal cutting

Designation		DMIN	Dimensions (mm)									DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MBCR/L	410L04-R005	1.0	4	0.05	0.48	0.10	0.96	0.71	16.4	8	8.80	25.75	4.0
	410L04-R010		4	0.10	0.48	0.10	0.96	0.71	17.0	8	8.80	25.75	
	410L06-R005		6	0.05	0.48	0.15	0.96	0.71	16.4	8	8.80	25.75	
	410L06-R010		6	0.10	0.48	0.15	0.96	0.81	17.0	8	8.80	25.75	
MBCR	415L04-R005	1.5	4	0.05	0.74	0.15	2.74	1.15	16.0	8	11.50	28.50	
MBCR/L	415L09-R010	1.5	9	0.10	0.74	0.15	1.45	1.22	16.0	8	11.50	28.50	
	417L06-R005	1.7	6	0.05	0.62	0.20	1.43	1.02	16.0	8	11.50	28.50	
	417L06-R010		6	0.10	0.77	0.20	1.58	1.18	16.0	8	11.50	28.50	
	417L09-R005		9	0.05	0.62	0.20	1.43	1.04	16.0	8	11.50	28.50	
	417L09-R010		9	0.10	0.82	0.20	1.63	1.30	16.0	8	11.50	28.50	
	419L06-R005	1.9	6	0.05	0.72	0.20	1.62	1.20	16.0	8	11.50	28.50	
	419L09-R005		9	0.05	0.72	0.20	1.62	1.20	16.0	8	11.50	28.50	
	422L06-R005	2.2	6	0.05	0.88	0.20	1.88	1.55	17.7	8	11.50	28.50	
	422L06-R010		6	0.10	0.93	0.20	1.93	1.55	17.7	8	11.50	28.50	
	422L09-R005		9	0.05	0.88	0.20	1.88	1.55	17.7	8	11.50	28.50	
	422L09-R010		9	0.05	0.1	0.20	2.06	1.76	17.7	8	11.50	28.50	
	422L14-R010		14	0.10	1.04	0.20	2.04	1.76	17.7	8	18.20	35.20	
MBER	422L14-R010	2.2	14	0.10	1.04	0.20	2.04	1.76	17.7	8	18.20	35.20	
MBCR/L	427L10-R005	2.7	10	0.10	0.05	0.20	2.47	2.06	17.5	8	11.50	28.50	
	427L10-R015		10	0.15	1.19	0.20	2.41	2.06	17.5	8	11.50	28.50	
	427L15-R015		15	0.15	1.23	0.20	2.48	2.06	17.5	8	18.20	35.20	
	427L15-R015		15	0.15	1.23	0.20	2.48	2.06	17.5	8	18.20	35.20	
MBCR/L	427L16-R005	2.7	16	0.05	1.22	0.20	2.47	2.06	17.5	8	18.20	35.20	
MBER	427L16-R005	2.7	16	0.05	1.22	0.20	2.47	2.06	17.5	8	18.20	35.20	
MBCR	430L10-R005	3.0	10	0.05	1.33	0.20	2.70	2.25	17.5	8	11.50	28.70	
MBCR/L	430L16-R005		16	0.05	1.33	0.20	2.70	2.25	17.5	8	18.20	35.20	
	430L20-R015		20	0.15	1.36	0.20	2.70	2.36	17.5	8	22.80	39.80	
	430L26-R005		26	0.05	1.33	0.20	2.70	2.25	17.5	8	28.70	45.70	

● : Stock item

Boring



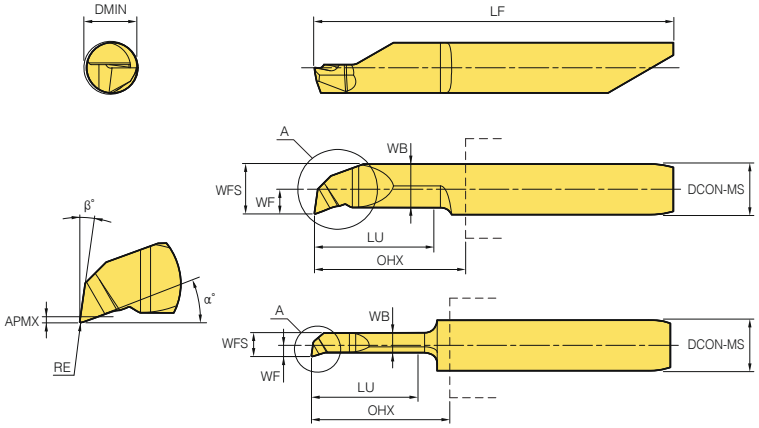


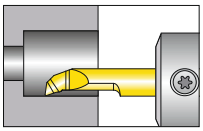
For internal cutting

Designation		DMIN	Dimensions (mm)									DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MBCR/L	432L10-R005	3.2	10	0.05	1.43	0.20	2.90	2.45	17.5	8	11.50	28.50	4.0
	432L10-R015		10	0.15	1.44	0.20	2.90	2.50	17.5	8	11.50	28.50	
	432L16-R005		16	0.05	1.43	0.20	2.90	2.45	17.5	8	18.20	35.20	
MBER	432L16-R005		16	0.05	1.43	0.20	2.90	2.45	17.5	8	18.20	35.20	
MBCR/L	432L16-R015		16	0.15	1.44	0.20	2.87	2.50	17.5	8	18.20	35.20	
MBER	432L16-R015		16	0.15	1.44	0.20	2.87	2.50	17.5	8	18.20	35.20	
MBCR/L	432L20-R005		20	0.05	1.43	0.20	2.90	2.45	17.5	8	22.80	39.80	
MBER	432L20-R005		20	0.05	1.43	0.20	2.90	2.45	17.5	8	22.80	39.80	
MBCR/L	432L20-R015		20	0.15	1.40	0.20	2.87	2.45	17.5	8	22.80	39.80	
MBER	432L20-R015		20	0.15	1.40	0.20	2.87	2.45	17.5	8	22.80	39.80	
	432L23-R010		23	0.10	1.43	0.20	2.90	2.45	17.5	8	22.80	45.70	
MBCR	437L10-R005	3.7	10	0.05	1.78	0.20	3.48	3.05	17.5	8	11.50	28.50	
MBCR/L	437L10-R015		10	0.15	1.74	0.20	3.44	3.05	17.5	8	11.50	28.50	
	437L15-R015		15	0.15	1.74	0.20	3.44	3.05	17.5	8	18.20	35.20	
MBER	437L15-R015		15	0.15	1.74	0.20	3.44	3.05	17.5	8	18.20	35.20	
MBCR/L	437L20-R015		20	0.15	1.74	0.20	3.44	3.05	17.5	8	22.80	39.80	
MBER	437L20-R015		20	0.15	1.74	0.20	3.44	3.05	17.5	8	22.80	39.80	
MBCR	437L26-R005		26	0.05	1.78	0.20	3.48	3.05	17.5	8	28.70	45.70	
	442L10-R003	4.2	10	0.03	1.98	0.30	3.98	3.13	19.0	8	11.50	28.50	
	442L10-R005		10	0.05	1.95	0.30	3.95	3.45	21.0	8	11.50	28.50	
MBCR/L	442L10-R015		10	0.15	1.93	0.30	3.93	3.13	19.0	8	11.50	28.50	
	442L16-R005		16	0.05	1.95	0.30	3.95	3.45	21.0	8	18.20	35.20	
MBER	442L16-R005		16	0.05	1.95	0.30	3.95	3.45	21.0	8	18.20	35.20	
MBCR	442L15-R003		15	0.03	1.98	0.30	3.98	3.13	19.0	8	18.20	35.20	
MBCR/L	442L16-R015		16	0.15	1.93	0.30	3.93	3.13	19.0	8	18.20	35.20	
MBER	442L16-R015		16	0.15	1.93	0.30	3.93	3.13	19.0	8	18.20	35.20	
MBCR/L	442L21-R005		21	0.05	1.95	0.30	3.95	3.45	21.0	8	22.80	39.80	
MBER	442L21-R005		21	0.05	1.95	0.30	3.95	3.45	21.0	8	22.80	39.80	
MBCR/L	442L21-R015		21	0.15	1.93	0.30	3.93	3.13	19.0	8	22.80	39.80	
MBER	442L21-R015		21	0.15	1.98	0.30	3.98	3.13	19.0	8	24.70	41.70	
MBCR	442L25-R003		25	0.03	1.98	0.30	3.98	3.13	19.0	8	28.70	45.70	
MBCR/L	442L26-R005		26	0.05	1.95	0.30	3.95	3.45	21.0	8	28.70	45.70	
	442L26-R015		26	0.15	1.93	0.30	3.93	3.13	19.0	8	28.70	45.70	
MBCR	442L30-R005		30	0.05	1.95	0.30	3.95	3.45	21.0	8	33.70	50.70	

● : Stock item

Boring





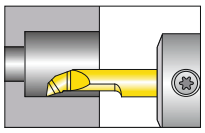
For internal cutting

Designation		DMIN	Dimensions (mm)									DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MBCR	552L10-R005	5.2	10	0.05	2.43	0.50	4.93	4.24	19.0	8	12.15	35.00	5.0
MBCR/L	552L10-R020		10	0.20	2.44	0.50	4.94	4.04	21.0	8	12.15	35.00	
MBCR	552L15-R003		15	0.03	2.44	0.50	4.94	4.24	21.0	8	18.15	41.00	
MBCR/L	552L16-R020		16	0.20	2.44	0.50	4.94	4.04	21.0	8	18.15	41.00	
MBCR	552L20-R005		20	0.05	2.43	0.50	4.93	4.24	21.0	8	23.15	46.00	
	552L20-R020		20	0.20	2.44	0.50	4.94	4.04	21.0	8	23.15	46.00	
MBCR/L	552L21-R020		21	0.20	2.44	0.50	4.94	4.04	21.0	8	23.15	46.00	
MBER	552L21-R020		21	0.20	2.44	0.50	4.94	4.04	21.0	8	23.15	46.00	
MBCR/L	552L26-R020		26	0.20	2.44	0.50	4.94	4.04	21.0	8	28.15	51.00	
MBER	552L26-R020		26	0.20	2.44	0.50	4.94	4.04	21.0	8	28.15	51.00	
MBCR	552L30-R005		30	0.05	2.42	0.50	4.92	4.24	21.0	8	32.15	55.00	
MBCR/L	552L30-R020		30	0.20	2.44	0.50	4.94	4.04	21.0	8	32.15	55.00	
	552L35-R020		35	0.20	2.44	0.50	4.94	4.04	21.0	8	37.15	60.00	
	662L16-R020	6.2	16	0.20	2.93	0.50	5.93	4.73	22.0	8	18.30	42.00	6.0
MBCR	662L20-R005		20	0.05	2.93	0.50	5.93	4.73	22.0	8	23.30	47.00	
MBCR/L	662L21-R020		21	0.20	2.93	0.50	5.93	4.73	22.0	8	23.30	47.00	
	662L26-R020		26	0.20	2.93	0.50	5.93	4.73	22.0	8	28.30	52.00	
MBCR	662L30-R005		30	0.05	2.93	0.50	5.93	4.73	22.0	8	32.30	56.00	
MBCR/L	662L30-R020		30	0.20	2.93	0.50	5.93	4.73	22.0	8	32.30	56.00	
MBER	662L30-R020		30	0.20	2.93	0.50	5.93	4.73	22.0	8	32.30	56.00	
MBCR/L	662L35-R020		35	0.20	2.93	0.50	5.93	4.73	22.0	8	37.30	61.00	
MBER	662L35-R020		35	0.20	2.93	0.50	5.93	4.73	22.0	8	37.30	61.00	
MBCR/L	662L40-R020		40	0.20	2.93	0.50	5.93	4.73	22.0	8	42.30	66.00	
MBCR	772L15-R010	7.2	15	0.10	3.44	0.50	6.94	5.74	22.0	8	16.40	41.00	7.0
MBCR/L	772L15-R020		15	0.20	3.44	0.50	6.94	5.74	22.0	8	16.40	41.00	
	772L25-R020		25	0.20	3.44	0.50	6.94	5.74	22.0	8	26.40	51.00	
MBCR	772L30-R020		30	0.20	3.44	0.50	6.94	5.74	22.0	8	31.40	56.00	
MBCR/L	772L35-R020		35	0.20	3.44	0.50	6.94	5.74	22.0	8	36.40	61.00	
	772L40-R020		40	0.20	3.44	0.50	6.94	5.74	22.0	8	41.40	66.00	
MBER	772L40-R020		40	0.20	3.44	0.50	6.94	5.74	22.0	8	41.40	66.00	
MBCR/L	772L45-R020		45	0.20	3.44	0.50	6.94	5.74	22.0	8	46.40	71.00	
MBER	772L45-R020		45	0.20	3.44	0.50	6.94	5.74	22.0	8	46.40	71.00	
MBCR/L	772L50-R020		50	0.20	3.44	0.50	6.94	5.74	22.0	8	51.40	76.00	

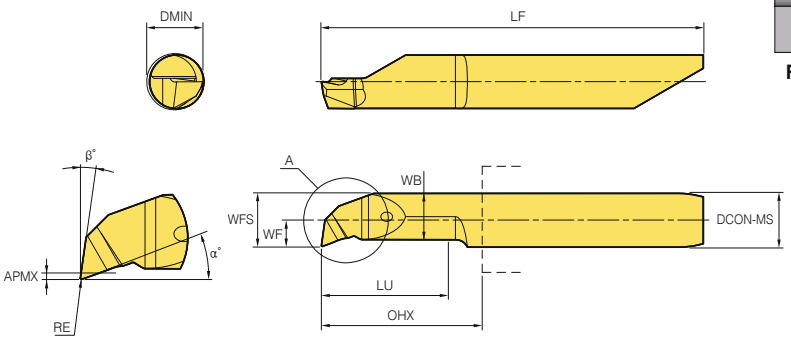
● : Stock item

Boring HPC

※ HPC : High pressure coolant



For internal cutting

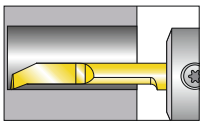


Designation		DMIN	Dimensions (mm)									DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MBCR	430L20C-R015	3.0	20	0.15	1.36	0.20	2.70	2.36	17.5	8	22.80	39.80	
	432L10C-R015	3.2	10	0.15	1.44	0.20	2.90	2.50	17.5	8	11.50	28.50	
	432L20C-R015		20	0.15	1.40	0.20	2.87	2.45	17.5	8	22.80	39.80	
	440L10C-R020	4.0	10	0.20	1.90	0.25	3.74	3.35	17.5	8	11.50	28.50	4.0
	442L10C-R015	4.2	10	0.15	1.93	0.30	3.93	3.13	19.0	8	11.50	28.50	
	442L10C-R020		10	0.20	1.98	0.30	3.98	3.13	19.0	8	11.50	28.50	
	442L21C-R015		21	0.15	1.93	0.30	3.93	3.13	19.0	8	22.80	39.80	
	552L10C-R020	5.2	10	0.20	2.44	0.50	4.94	4.04	21.0	8	12.15	35.00	
	552L15C-R020		15	0.20	2.44	0.50	4.94	4.24	21.0	8	18.15	41.00	
	552L21C-R020		21	0.20	2.44	0.50	4.94	4.04	21.0	8	23.15	46.00	5.0
	552L30C-R020		30	0.20	2.44	0.50	4.94	4.04	21.0	8	32.15	55.00	
	552L35C-R020		35	0.20	2.44	0.50	4.94	4.04	21.0	8	37.15	60.00	

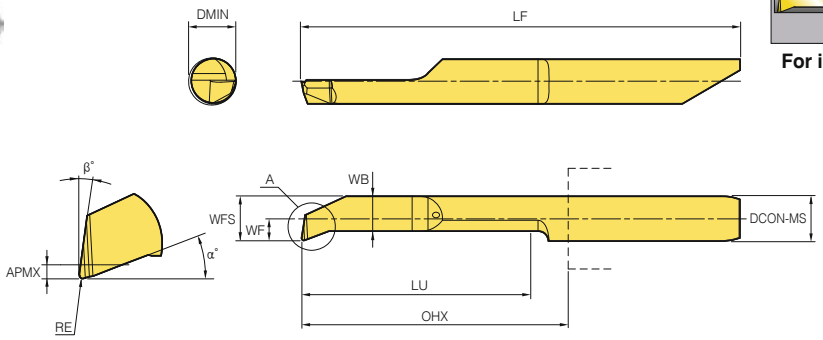
● : Stock item

Boring chip breaker HPC

※ HPC: High pressure coolant



For internal cutting

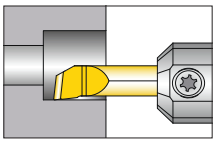


Designation		DMIN	Dimensions (mm)									DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MBCBR	442L20C-R015	4.2	20	0.15	1.95	0.30	3.95	3.13	21	8	22.80	39.80	4.0
	552L15C-R020	5.2	15	0.20	2.44	0.50	4.94	4.04	21	8	18.15	41.00	5.0
	552L25C-R020		25	0.20	2.44	0.50	4.94	4.04	21	8	28.15	51.00	
	662L30C-R020	6.2	30	0.20	2.93	0.50	5.93	4.73	22	8	32.30	56.00	6.0

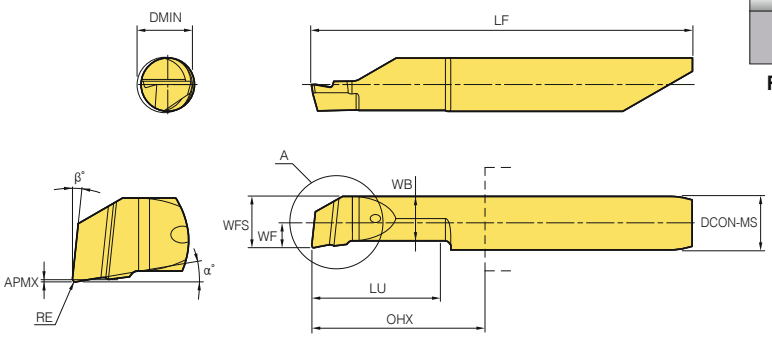
● : Stock item

Boring chip former HPC

※ HPC: High pressure coolant



For internal cutting

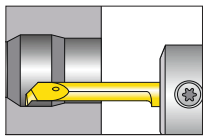


Designation		DMIN	Dimensions (mm)									DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MBCFR	442L10C-R015	4.2	10	0.15	1.85	0.05	3.85	3.35	7.5	6	11.50	28.50	4.0

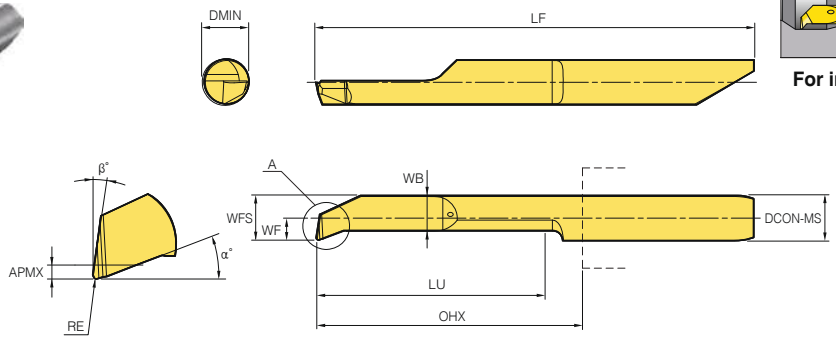
● : Stock item

Boring & Profiling (CBLF) HPC

※ HPC: High pressure coolant



For internal cutting

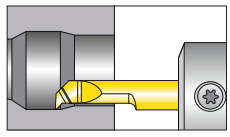


Designation		DMIN	Dimensions (mm)									DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MCBLFR/L	442L10C-R015	4.2	10	0.15	1.90	0.70	3.90	3.10	47	3	11.50	28.50	4.0
	442L16C-R015		16	0.15	1.90	0.70	3.90	3.10	47	3	18.20	35.20	
	442L21C-R015		21	0.15	1.90	0.70	3.90	3.10	47	3	22.80	39.80	
	552L16C-R020	5.2	16	0.20	2.40	0.95	4.90	3.80	49	3	18.15	41.00	5.0
	552L25C-R020		25	0.20	2.40	0.95	4.90	3.80	49	3	28.15	51.00	
	662L16C-R020	6.2	16	0.20	2.78	1.75	5.80	3.90	49	3	18.30	42.00	6.0
	662L21C-R020		21	0.20	2.78	1.75	5.80	3.90	49	3	23.30	47.00	
	662L30C-R020		30	0.20	2.78	1.75	5.80	3.90	49	3	32.30	56.00	

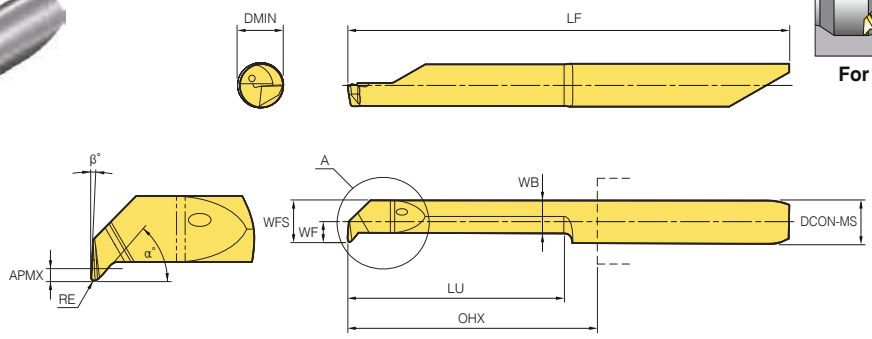
● : Stock item

Boring & Profiling (CL) HPC

※ HPC: High pressure coolant



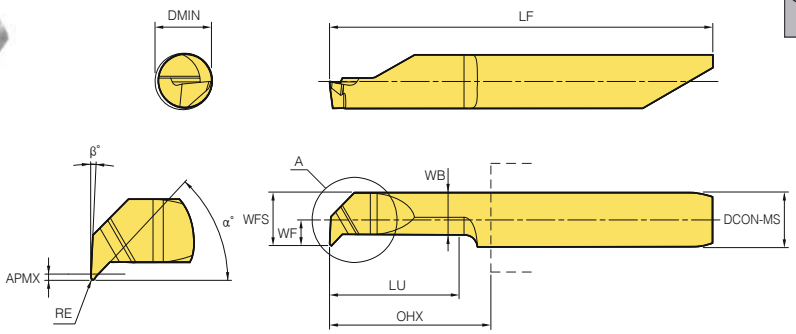
For internal cutting

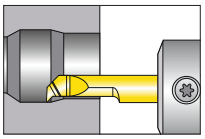


Designation		DMIN	Dimensions (mm)									DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MCLR	442L10C-R015	4.2	10	0.15	1.90	0.70	3.90	3.10	47	3	11.50	28.50	4.0
	442L21C-R015		21	0.15	1.90	0.70	3.90	3.10	47	3	18.20	35.20	
	552L25C-R020	5.2	25	0.20	2.40	0.95	4.90	3.80	49	3	28.15	51.00	5.0

● : Stock item

Boring & Profiling (CL)





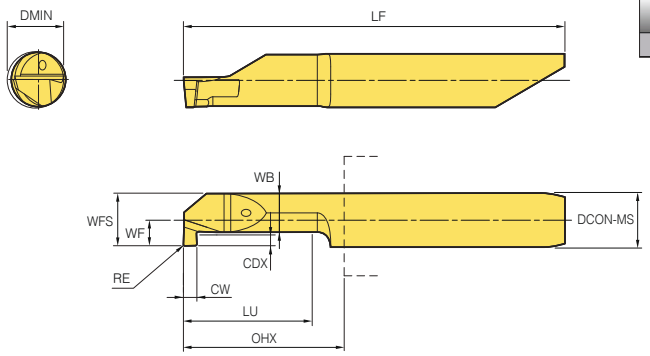
For internal cutting

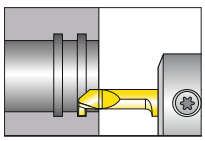
Designation		DMIN	Dimensions (mm)									DCON-MS
			LU	RE	WF	APMX	WFS	WB	α°	β°	OHX	LF	
MCLR	442L10-R010	4.2	10	0.10	1.90	0.70	3.90	3.10	47	3	11.50	28.50	4.0
MCLR/L	442L10-R015		10	0.15	1.90	0.70	3.90	3.10	47	3	11.50	28.50	
	442L16-R015		16	0.15	1.90	0.70	3.90	3.10	47	3	18.20	35.20	
	442L21-R015		21	0.15	1.90	0.70	3.90	3.10	47	3	22.80	39.80	
MCLR	552L07-R007	5.2	7	0.07	2.40	0.95	4.90	3.75	49	3	18.20	35.20	5.0
MCLR/L	552L16-R020		16	0.20	2.40	0.95	4.90	3.80	49	3	18.15	41.00	
	552L25-R020		25	0.20	2.40	0.95	4.90	3.80	49	3	28.15	51.00	
MCLR	662L16-R010	6.2	16	0.10	2.78	1.75	5.78	3.90	49	3	18.30	42.00	6.0
MCLR/L	662L16-R020		16	0.20	2.78	1.75	5.78	3.90	49	3	18.30	42.00	
	662L21-R020		21	0.20	2.78	1.75	5.78	3.90	49	3	23.30	47.00	
	662L30-R020		30	0.20	2.78	1.75	5.78	3.90	49	3	32.30	56.00	

● : Stock item

Square grooving HPC

※ HPC : High pressure coolant



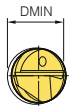


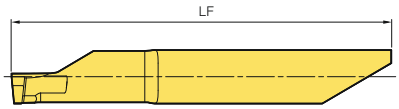
For internal cutting

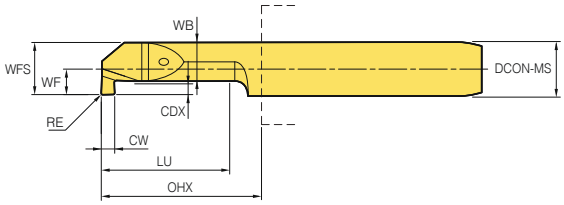
Designation		DMIN	Dimensions (mm)								DCON-MS
			CW±0.025	CDX	LU	WF	RE	WFS	WB	OHX	LF	
MGSR	442L10C-W100	4.2	1.00	0.80	10	1.90	0.10	3.90	2.90	11.50	28.50	4.0
	442L15C-W100		1.00	0.80	15	1.90	0.10	3.90	2.90	18.20	35.20	
	442L20C-W100		1.00	0.80	20	1.90	0.10	3.90	2.90	22.80	39.80	
	552L10C-W100	5.2	1.00	1.00	10	2.40	0.10	4.90	3.70	12.15	35.00	5.0
	552L15C-W100		1.00	1.00	15	2.40	0.10	4.90	3.70	18.15	41.00	
	552L15C-W150		1.50	1.00	15	2.40	0.10	4.90	3.70	18.15	41.00	
	552L20C-W150		1.50	1.00	20	2.40	0.10	4.90	3.70	23.15	46.00	

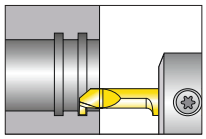
● : Stock item

Square grooving







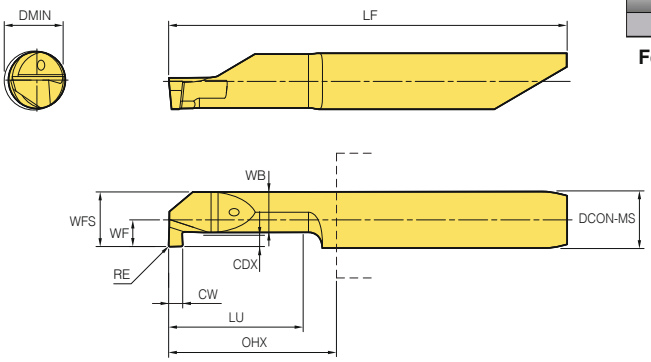


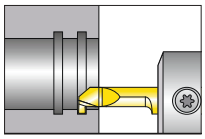
For internal cutting

Designation		DMIN	Dimensions (mm)									DCON-MS
			CW±0.025	CDX	LU	WF	RE	WFS	WB	OHX	LF	
MGSR	430L16-W070	3.0	0.70	0.62	16	1.40	0.10	2.70	1.75	11.50	39.80	4.0
	440L10-W100	4.0	1.00	1.00	10	1.90	0.00	3.90	2.50	18.20	35.20	
MGSR/L	442L10-W079	4.2	0.79	0.80	10	1.96	0.10	3.96	2.90	11.50	28.50	
	442L10-W100		1.00	0.80	10	1.90	0.10	3.90	2.90	11.50	28.50	
MGSR	442L10-W150		1.50	0.80	10	1.90	0.10	2.90	2.90	18.20	35.20	
MGSR/L	442L15-W079		0.79	0.80	15	1.96	0.10	3.96	2.90	18.20	35.20	
	442L15-W100		1.00	0.80	15	1.90	0.10	3.90	2.90	18.20	35.20	
	442L20-W100		1.00	0.80	15	20.00	0.10	3.90	2.90	22.80	39.80	
	442L25-W079		0.79	0.80	25	1.96	0.10	3.96	2.90	28.70	45.70	
MGSL	552L06-W070	5.2	0.70	1.00	6	2.40	0.10	4.90	3.70	12.15	32.00	5.0
MGSR/L	552L10-W100		1.00	1.00	10	2.40	0.10	4.90	3.70	12.15	35.00	
MGSR	552L10-W179		1.79	1.35	10	2.40	0.10	4.90	3.70	12.15	35.00	
	552L10-W150		1.50	1.00	10	2.40	0.10	4.90	3.70	12.15	35.00	
	552L10-W200		2.00	1.00	10	2.40	0.10	4.90	3.70	12.15	35.00	
MGSR/L	552L15-W100		1.00	1.00	15	2.40	0.10	4.90	3.70	18.15	41.00	
	552L15-W150		1.50	1.00	15	2.40	0.10	4.90	3.70	18.15	41.00	
MGSR	552L15-W200		2.00	1.00	15	2.40	0.10	4.90	3.70	18.15	41.00	
MGSR/L	552L20-W100		1.00	1.00	20	2.40	0.10	4.90	3.70	23.15	46.00	
	552L20-W150		1.50	1.00	20	2.40	0.10	4.90	3.70	23.15	46.00	
MGSR	552L20-W200		2.00	1.00	20	2.40	0.10	4.90	3.70	23.15	46.00	
	552L21-W050		0.50	1.00	21	2.40	0.10	4.90	3.70	23.15	46.00	
	652L10-W160	5.2	1.60	1.80	10	2.20	0.10	5.20	2.90	12.30	36.00	6.0
	662L06-W150	6.2	1.50	1.80	6	0.40	0.10	3.40	1.70	12.30	40.00	
	662L09-W080		0.80	1.80	9	2.96	0.10	5.96	4.00	11.30	35.00	
	662L10-W079		0.79	1.80	10	2.90	0.10	5.90	4.00	12.30	36.00	
MGSR/L	662L10-W100		1.00	1.80	10	2.90	0.10	5.90	4.00	12.30	36.00	
MGSR	662L10-W117		1.17	1.80	10	2.90	0.10	5.90	4.00	12.30	36.00	
MGSR/L	662L10-W150		1.50	1.80	10	2.90	0.10	5.90	4.00	12.30	36.00	
MGSR	662L10-W157		1.57	1.80	10	2.90	0.10	5.94	4.00	12.30	36.00	
	662L10-W198		1.98	1.80	10	2.90	0.10	5.94	4.00	12.30	36.00	
MGSR/L	662L10-W200		2.00	1.80	10	2.90	0.10	5.90	4.00	12.30	36.00	
MGSR	662L15-W079		0.79	1.80	15	2.90	0.10	5.94	4.00	18.30	42.00	
MGSR/L	662L15-W100		1.00	1.80	15	2.90	0.10	5.90	4.00	18.30	42.00	

● : Stock item

Square grooving



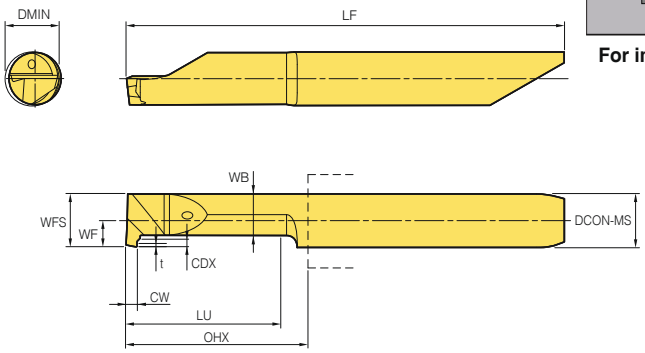


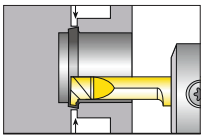
For internal cutting

Designation		DMIN	Dimensions (mm)								DCON-MS
			CW±0.025	CDX	LU	WF	RE	WFS	WB	OHX	LF	
MBGR	662L15-W117	6.2	1.17	1.80	15	2.96	0.10	5.96	4.00	18.30	42.00	6.0
MGSR/L	662L15-W150		1.50	1.80	15	2.90	0.10	5.90	4.00	18.30	42.00	
MGSR	662L15-W157		1.57	1.80	15	2.96	0.10	5.96	4.00	18.30	42.00	
	662L15-W198		1.98	1.80	15	2.96	0.10	5.96	4.00	18.30	42.00	
MGSR/L	662L15-W200		2.00	1.80	15	2.90	0.10	5.90	4.00	18.30	42.00	
	662L20-W100		1.00	1.80	20	2.90	0.10	5.90	4.00	23.30	47.00	
	662L20-W150		1.50	1.80	20	2.90	0.10	5.90	4.00	23.30	47.00	
	662L20-W200		2.00	1.80	20	2.90	0.10	5.90	4.00	23.30	47.00	
MGSR	662L25-W079		0.79	1.80	25	2.96	0.10	5.96	4.00	28.30	52.00	
	662L25-W100		1.00	1.80	25	2.90	0.10	5.90	3.10	28.30	56.00	
	662L25-W117		1.17	1.80	25	2.96	0.10	5.96	4.00	28.30	52.00	
	662L25-W157		1.57	1.80	25	2.96	0.10	5.96	4.00	28.30	52.00	
	662L25-W198		1.98	1.80	25	2.96	0.10	5.96	4.00	28.30	52.00	
	662L25-W200		2.00	1.80	25	2.90	0.10	5.90	3.20	28.30	56.00	
	662L25-W350		3.50	1.80	25	2.96	0.10	5.96	4.00	28.30	52.00	
MGSR/L	662L30-W100		1.00	1.80	30	2.90	0.10	5.90	4.00	32.30	56.00	
	662L30-W150		1.50	1.80	30	2.90	0.10	5.90	4.00	32.30	56.00	
	662L30-W200		2.00	1.80	30	2.90	0.10	5.90	4.00	32.30	56.00	
MGSR	662L35-W079		0.79	1.80	35	2.96	0.10	5.96	4.00	37.30	61.00	
	662L35-W117		1.17	1.80	35	2.96	0.10	5.96	4.00	37.30	61.00	
	662L35-W150		1.50	1.80	35	2.96	0.10	5.90	3.95	37.30	59.85	
	662L35-W157		1.57	1.80	35	2.96	0.10	5.96	4.00	37.30	61.00	
	772L15-W250	7.2	2.50	2.50	15	3.40	0.10	6.90	4.10	18.30	42.00	7.0
	772L10-W079		0.79	2.50	10	3.46	0.10	6.96	4.10	11.40	36.00	
MGSR/L	772L10-W100		1.00	2.50	10	3.40	0.10	6.90	4.10	11.40	36.00	
	772L10-W150		1.50	2.50	10	3.40	0.10	6.90	4.10	11.40	36.00	
	772L10-W200		2.00	2.50	10	3.40	0.10	6.90	4.10	11.40	36.00	
MGSR	772L10-W600		6.00	2.50	10	3.20	0.10	6.90	4.10	11.40	36.00	
	772L15-W079		0.79	2.50	15	3.46	0.10	6.96	4.10	16.40	41.00	
	772L15-W100		1.00	2.50	15	3.40	0.10	6.90	4.10	16.40	41.00	
	772L15-W117		1.17	2.50	15	3.46	0.10	6.96	4.10	16.40	41.00	
MGSR/L	772L15-W150		1.50	2.50	15	3.40	0.10	6.90	4.10	16.40	41.00	
MGSR	772L15-W157		1.57	2.50	15	3.46	0.10	6.96	4.10	16.40	41.00	
	772L15-W198		1.98	2.50	15	3.46	0.10	6.90	4.10	16.40	41.00	
MGSR/L	772L15-W200		2.00	2.50	15	3.40	0.10	6.90	4.10	16.40	41.00	
MGSR	772L16-W150		1.50	2.50	16	3.40	0.10	6.90	4.10	17.40	42.00	
	772L20-W079		0.79	2.50	20	3.46	0.10	6.96	4.10	26.40	51.00	
	772L20-W117		1.17	2.50	20	3.46	0.10	6.96	4.10	26.40	51.00	
	772L20-W157		1.57	2.50	20	3.46	0.10	6.96	4.10	26.40	51.00	
	772L20-W198		1.98	2.50	20	3.46	0.10	6.96	4.10	26.40	51.00	
	772L20-W150		1.50	2.50	20	3.40	0.10	6.90	4.10	26.40	46.00	
	772L25-W100		1.00	2.50	25	3.40	0.10	6.90	4.10	26.40	51.00	
MGSR/L	772L25-W150		1.50	2.50	25	3.40	0.10	6.90	4.10	26.40	51.00	
	772L25-W200		2.00	2.50	25	3.40	0.10	6.90	4.10	26.40	51.00	
MGSR	772L35-W100		1.00	2.50	35	3.40	0.10	6.90	4.10	36.40	61.00	
MGSR/L	772L35-W150		1.50	2.50	35	3.40	0.10	6.90	4.10	36.40	61.00	
	772L35-W200		2.00	2.50	35	3.40	0.10	6.90	4.10	36.40	61.00	

● : Stock item

Pre-part off





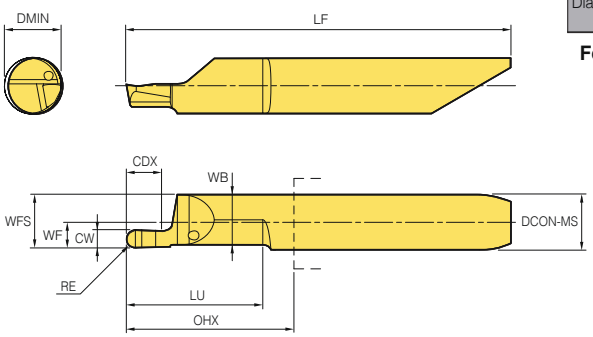
For internal cutting

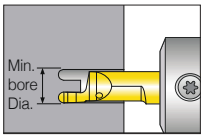
Designation		DMIN	Dimensions (mm)									DCON-MS
			CW±0.025	CDX	LU	WF	RE	WFS	WB	OHX	LF	
MPPR/L	552L15-W100	5.2	1.00	0.70	15	2.44	0.30	4.94	3.88	18.15	41.00	5.0
	552L20-W100		1.00	0.70	20	2.44	0.30	4.94	3.88	23.15	46.00	
MPPR	552L20C-W100		1.00	0.70	20	2.44	0.30	4.94	3.88	23.15	46.00	
MPPR/L	552L25-W100		1.00	0.70	25	2.44	0.30	4.94	3.88	28.15	51.00	
MPPR	552L30-W100		1.00	0.70	30	2.44	0.30	4.94	3.88	32.15	55.00	

● : Stock item

Round face grooving internal HPC

※ HPC : High pressure coolant





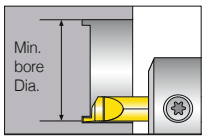
For internal cutting

Designation		DMIN	Dimensions (mm)									DCON-MS
			CW±0.025	CDX	LU	WF	RE	WFS	WB	OHX	LF	
MFGRR/L	662L15C-R050	6.2	1.00	2.00	15	2.80	0.50	5.80	5.55	18.30	42.00	6.0
	662L15C-R080		1.60	3.00	15	2.80	0.80	5.80	5.45	18.30	42.00	
	662L15C-R100		2.00	4.00	15	2.80	1.00	5.80	5.45	18.30	42.00	
	662L15C-R125		2.50	5.00	15	2.80	1.25	5.80	5.45	18.30	42.00	
	662L15C-R150		3.00	6.00	15	2.80	1.50	5.80	5.45	18.30	42.00	

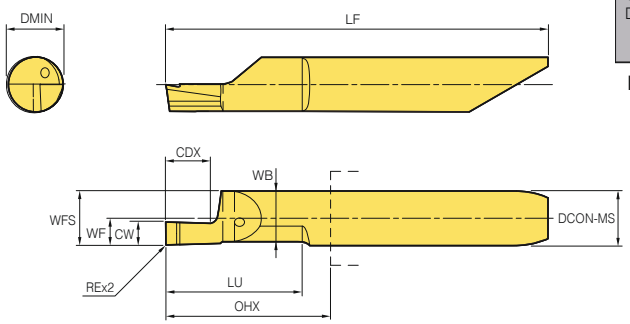
● : Stock item

Face grooving HPC

※ HPC: High pressure coolant



For internal cutting

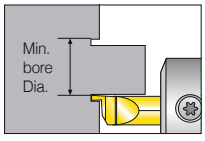


Designation		DMIN	Dimensions (mm)								DCON-MS
			CW±0.025	CDX	LU	WF	RE	WFS	WB	OHX	LF	
MFGR/L	680L15C-W100	8.0	1.00	2.00	15	2.80	0.10	5.80	5.55	18.30	42.00	6.0
	680L15C-W117		1.17	2.00	15	2.80	0.15	5.80	5.55	18.30	42.00	
	680L15C-W150		1.50	3.00	15	2.80	0.10	5.80	5.55	18.30	42.00	
	680L15C-W157		1.57	3.00	15	2.80	0.15	5.80	5.55	18.30	42.00	
	680L15C-W198		1.98	4.00	15	2.80	0.15	5.80	5.55	18.30	42.00	
	680L15C-W200		2.00	4.00	15	2.80	0.10	5.80	5.55	18.30	42.00	
	680L15C-W239		2.39	5.00	15	2.80	0.15	5.80	5.55	18.30	42.00	
	680L15C-W250		2.50	5.00	15	2.80	0.10	5.80	5.55	18.30	42.00	
	680L15C-W300		3.00	6.00	15	2.80	0.10	5.80	5.55	18.30	42.00	
	680L15C-W318		3.18	6.00	15	2.80	0.15	5.80	5.55	18.30	42.00	

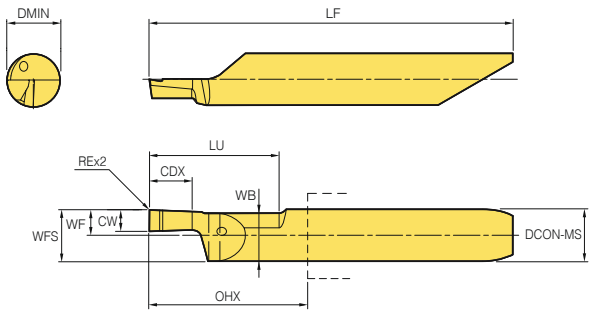
● : Stock item

Face grooving HPC

※ HPC: High pressure coolant



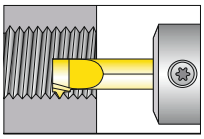
For internal cutting



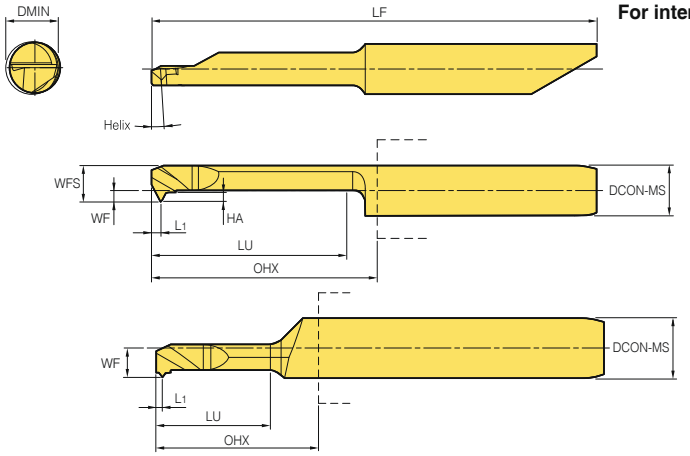
Designation		DMIN	Dimensions (mm)								DCON-MS
			CW±0.025	CDX	LU	WF	RE	WFS	WB	OHX	LF	
MFPR/L	680L15C-W100	8.0	1.00	2.00	15	2.80	0.10	5.80	5.55	18.30	42.00	6.0
	680L15C-W117		1.17	2.00	15	2.80	0.15	5.80	5.55	18.30	42.00	
	680L15C-W150		1.50	3.00	15	2.80	0.10	5.80	5.55	18.30	42.00	
	680L15C-W157		1.57	3.00	15	2.80	0.15	5.80	5.55	18.30	42.00	
	680L15C-W198		1.98	4.00	15	2.80	0.15	5.80	5.55	18.30	42.00	
	680L15C-W200		2.00	4.00	15	2.80	0.10	5.80	5.55	18.30	42.00	
	680L15C-W239		2.39	5.00	15	2.80	0.15	5.80	5.55	18.30	42.00	
	680L15C-W250		2.50	5.00	15	2.80	0.10	5.80	5.55	18.30	42.00	
	680L15C-W300		3.00	6.00	15	2.80	0.10	5.80	5.55	18.30	42.00	
	680L15C-W318		3.18	6.00	15	2.80	0.15	5.80	5.55	18.30	42.00	

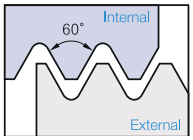
● : Stock item

Threading



For internal cutting

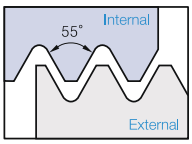




Partial profile 60°

Thread	DCON-MS	DMIN	Pitch		Designation		Dimensions (mm)							
Standard			(mm)	(tpi)			LU	WFS	WF	L1	HA	OHX	LF	FHA
M1-M2x0.25	4.0	0.73	0.25	-	MTHR	407L02P60-0.25	2.5	0.65	1.95	0.14	0.29	13.00	29.80	4.9
M1.6-M3x0.35		1.22	0.35	-		412L04P60-0.35	4.0	1.10	1.95	0.18	0.29	13.00	29.80	3.8
M2x0.4		1.57	0.40	-		416L05P60-0.4	5.0	1.45	1.95	0.20	0.41	13.00	29.80	4.2
M2.2-M2.5x0.45		1.71	0.45	-		417L06P60-0.45	6.0	1.54	1.95	0.22	0.46	13.00	29.80	4.0
-	4.0	3.20	0.5~1.0	48~24	MTHR/L	429L16F60	16.0	2.90	0.90	0.90	-	18.40	35.40	3.5
		4.20	0.5~1.0	48~24		439L16F60	16.0	3.89	1.90	0.90	-	18.40	35.40	3.5
	6.0	6.20	0.5~1.5	48~16	MTHR	659L06A60	6.0	5.89	2.90	0.90	-	8.50	36.20	3.5
		6.20	0.5~1.5	48~16	MTHR/L	659L16A60	16.0	5.89	2.90	0.90	-	18.50	42.20	3.5

● : Stock item

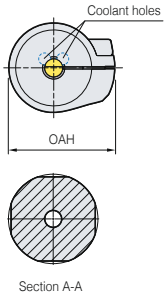


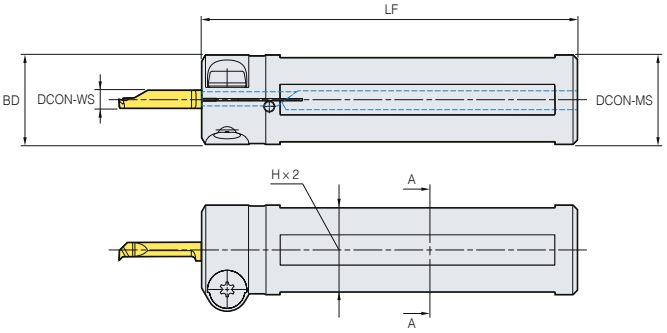
Partial profile 55°

DCON-MS	DMIN	Pitch		Designation		Dimensions (mm)							
		(mm)	(tpi)			LU	WFS	WF	L1	HA	OHX	LF	FHA
4.0	3.2	0.5~1.0	48~24	MTHR/L	429L16F55	16	2.90	0.90	0.75	18.40	35.40	3.5	4.9
	4.2	0.5~1.0	48~24		439L16F55	16	2.90	1.90	0.75	18.40	35.40	3.5	3.8
6.0	6.2	0.5~1.5	48~16		659L16A55	16	5.89	2.90	0.90	18.50	42.20	3.5	4.2

● : Stock item

MHRSC (Shrink tool holder)

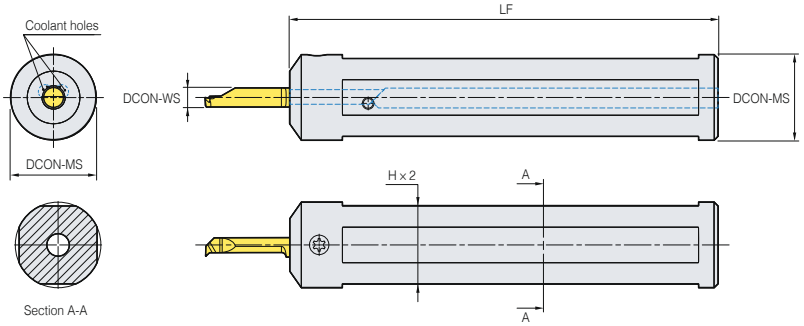




Designation		DCON-WS	Dimensions (mm)					Screw	Wrench
			DCON-MS	OAH	BD	H	LF		
MHRSC	4-10-4F	4.0	10	19.7	13.3	8.8	65	MTS10-15X2	MTL15/MTLX15
	4-12-4F		12	19.7	13.8	10.8	70		
	4-16-4F		16	21.7	16.0	14.8	75		
	4-20-4F		20	23.7	20.0	18.8	84		
	4-22-4F		22	24.7	22.0	20.0	110		
	5-16-4F	5.0	16	21.7	16.0	14.8	75		
	5-20-4F		20	23.7	20.0	18.8	84		
	6-12-4F	6.0	12	19.7	13.8	10.8	70		
	6-16-4F		16	21.7	16.0	14.8	75		
	6-20-4F		20	23.7	20.0	18.8	84		
	6-22-4F		22	24.7	22.0	20.0	110		
	7-16-4F	7.0	16	21.7	16.0	14.8	75		
	7-20-4F		20	23.7	20.0	18.8	84		

● : Stock item

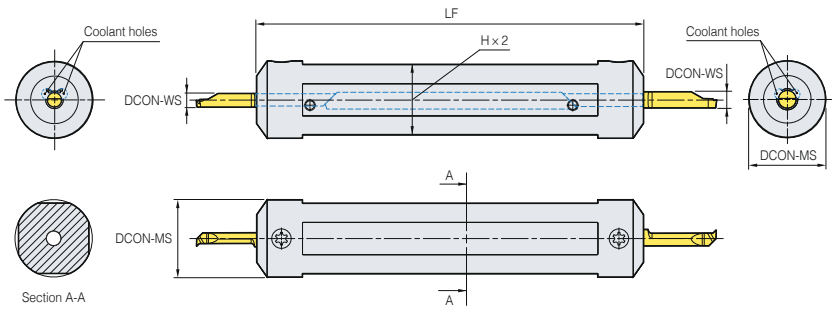
MHRRC (Round holder)



Designation		DCON-WS	Dimensions (mm)			Screw	Wrench
			DCON-MS	H	LF		
MHRRC	4-20-4F	4.0	20.00	18.8	83.5	MTDBT15	MTF15
	4-22-4F		22.00	20.0	110.0		
	5-20-4F	5.0	20.00	18.8	83.5		
	5-22-4F		22.00	20.0	110.0		
	6-20-4F	6.0	20.00	18.8	83.5		
	6-22-4F		22.00	20.0	110.0		
	7-25-4F	7.0	25.00	20.0	110.0		

● : Stock item

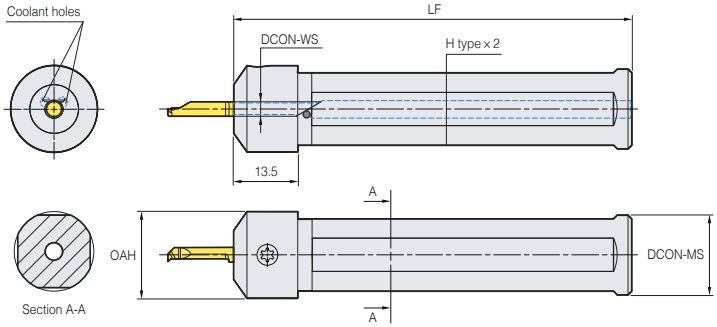
MHRRC (Double-sided round holder)



Designation		DCON-WS	Dimensions (mm)			Screw	Wrench
			DCON-MS	H	LF		
MHRRC	4-075-5-4F	4.0 ~ 5.0	19.05	17.8	83.5	MTDBT15	MTF15
	4-20-5-4F		20.00	18.8	83.5		
	4-22-5-4F		22.00	20.0	110.0		
	4-25-5-4F		25.00	23.0	110.0		
	6-20-7-4F	6.0 ~ 7.0	20.00	18.8	83.5		
	6-25-7-4F		25.00	23.0	110.0		

● : Stock item

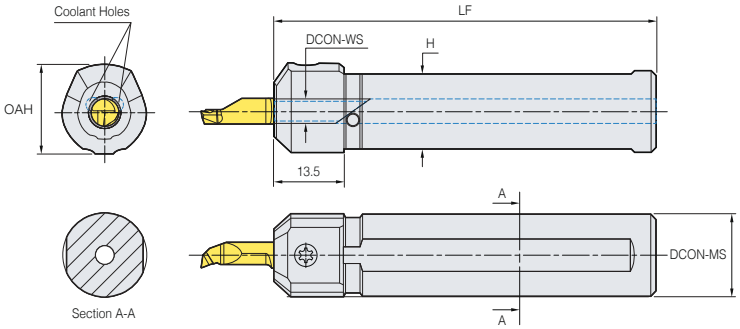
MHRNC-4F (Round shank holder)



Designation		DCON-WS	Dimensions (mm)				Screw	Wrench
			DCON-MS	OAH	H	LF		
MHRNC	4-20-4F	4.0	20	22	18.8	83.5	MTDT15 or MTDBT15	MTKT15 or MTF15
	4-22-4F		22	24	20.0	110.0		
	4-23-4F		23	25	21.0	110.0		
	4-25-4F		25	27	23.0	110.0		
	4-28-4F		28	30	26.0	110.0		
	5-20-4F	5.0	20	22	18.8	83.5		
	5-22-4F		22	24	20.0	110.0		
	5-23-4F		23	25	21.0	110.0		
	5-25-4F		25	27	23.0	110.0		
	5-28-4F		28	30	26.0	110.0		
	6-20-4F	6.0	20	22	18.8	83.5		
	6-22-4F		22	24	20.0	110.0		
	6-23-4F		23	25	21.0	110.0		
	6-25-4F		25	27	23.0	110.0		
	6-28-4F		28	30	26.0	110.0		
	7-22-4F	7.0	22	24	20.0	110.0		
	7-23-4F		23	25	21.0	110.0		
	7-25-4F		25	27	23.0	110.0		
	7-28-4F		28	30	26.0	110.0		

● : Stock item

MHRNC-2F (Round shank holder)



Designation		DCON-WS	Dimensions (mm)				Screw	Wrench
			DCON-MS	OAH	H	LF		
MHRNC	4-10-2F	4.0	10.00	14.0	8.8	65.0	MTDT15 or MTDBT15	MTKT15 or MTF15
	4-12-2F		12.00	16.0	10.8	70.0		
	4-16-2F		16.00	17.6	14.8	75.0		
	4-20-2F		20.00	22.0	18.8	84.0		
	5-10-2F	5.0	10.00	14.0	8.8	65.0		
	5-12-2F		12.00	16.0	10.8	70.0		
	5-16-2F		16.00	18.6	14.8	75.0		
	5-20-2F		20.00	22.0	18.8	84.0		
	6-12-2F	6.0	12.00	16.0	10.8	70.0		
	6-16-2F		16.00	18.6	14.8	75.0		
	6-20-2F		20.00	22.0	18.8	84.0		
	7-16-2F	7.0	16.00	18.6	14.8	75.0		
	7-20-2F		20.00	22.0	18.8	84.0		

● : Stock item

Auto Tools (MSB Tool)

- High hardness grade guarantees longer tool life
- Various kinds of machining (fitting, valve, medical parts, automobile component, and semiconductor) are available
- Various types of MSB tools (Boring, Grooving, Threading)

Code system

M	G	R	06	20	1.5 / ◇60	-	1

Type
M: Micro

Application
B : Boring
BC : Copying
BB : Back Boring
BF : Chamfering
G : Square Grooving
GR : Round Grooving
GF : Face Grooving
T : Threading

Hand
R: Right
L: Left

Shank Dia.
03 : 3.0
04 : 4.0
06 : 6.0
08 : 8.0
10 : 10.0

Max. aspect ratio
10 : 10.0
15 : 15.0
20 : 20.0
25 : 25.0
35 : 35.0

Machining size

Boring		No Code	
Copying		Width of Groove	
Threading		60°	55°
		Pitch	tpi
◇	F	0.25~1.0	72~24
	A	0.5~1.5	48~16
	AG	0.5~3.0	48~8

Cutting edge
1: Single ended
None: Double ended

MSB tool code system

Type		Application		Designation
01	Boring	Boring		MBR/L○○☆☆
02		Copying		MBCR/L○○☆☆
03		Back Boring		MBBR/L○○☆☆
04		Chamfering		MBFR/L○○☆☆
05	Grooving	Square Grooning		MGR/L○○☆☆–□□
06		Round Grooving		MGRR/L○○☆☆–□□
07		Face Grooving		MGFR/L○○00–□□
08	Threading	Partial	60°	MTR/L○○☆☆–◇60
			55°	MTR/L○○☆☆–◇55

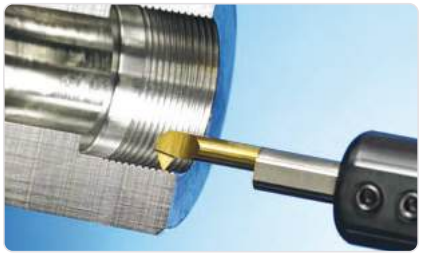
Details

Mark					
	○○	Shank Dia.			
	☆☆	Max. depth of boring			
	□□	Width of groove			
	◇	Pitch / tpi	F	0.25~1.0	72~24
			A	0.5~1.5	48~16
			AG	0.5~3.0	48~8

Grades

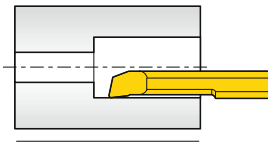
Grades	Coating	Application and features
Z12M	**Carbide**	Ultra fine grain substrate ensures superior wear resistance and toughness Application: Cast iron, aluminum and non-ferrous metals machining
PC30M	**TiN coating**	TiN coated ultra fine grain substrate ensures longer tool life Application: Stainless steel, heat-resistant alloy alloy and hard-to-cut material machining

Machining types

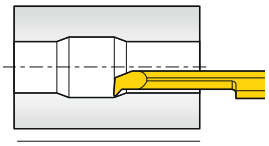


Types

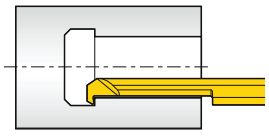
Boring



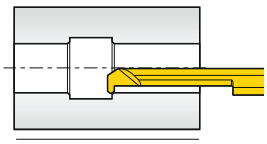
Boring
Min. dia. of machining: Ø3.2



Copying
Min. dia. of machining: Ø4.2

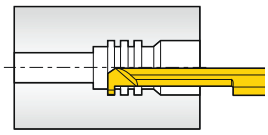


Back Boring
Min. dia. of machining: Ø3.2

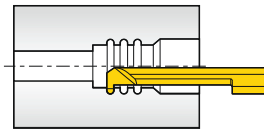


Chamfering
Min. dia. of machining: Ø4.2

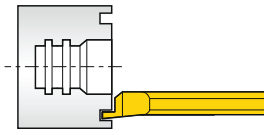
Grooving



Square Grooving
Min. dia. of machining: Ø3.2

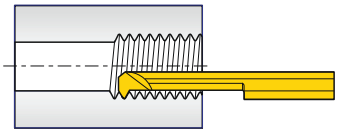


Round Grooving
Min. dia. of machining: Ø3.2



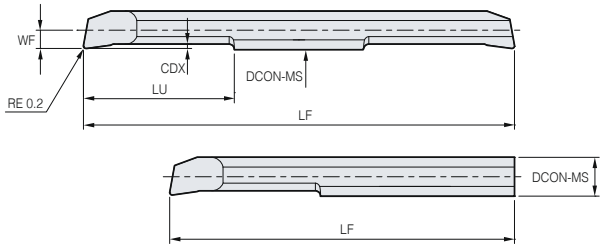
Face Grooving
Min. dia. of machining: Ø6.0

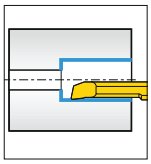
Threading



Threading
Min. dia. of machining: Ø3.3

Boring



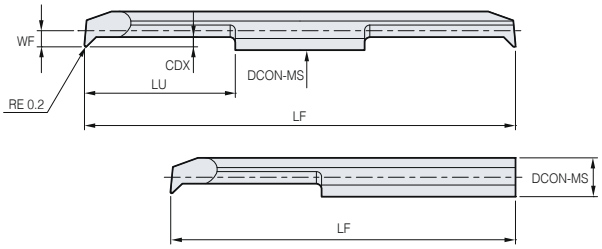


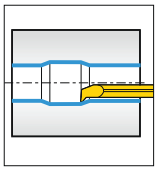
(mm)

Twin Edge				Single Edge				DCON-MS	DCN	LU	Overall length		Detailed cutting edge	
Designation		Coated	Uncoated	Designation		Coated	Uncoated				LF		CDX	WF
		PC30M	Z12M			PC30M	Z12M				Double ended	Single ended		
MBR	0310	●		MBR	0310-1			3.0	3.2	10	40	35	0.5	1.4
	0315	●			0315-1					15	50	45		
	0410	●			0410-1			4.0	4.2	10	40	35	0.6	1.9
	0415	●			0415-1					15	50	45		
	0420	●			0420-1					20	60	50		
	0610	●			0610-1			6.0	6.2	10	45	40	0.75	2.9
	0615	●			0615-1					15	55	45		
	0620	●			0620-1					20	65	50		
	0810	●			0810-1			8.0	8.2	10	50	45	0.8	3.9
	0820	●			0820-1					20	70	60		
	0830				0830-1					30	80	70		
	1015	●			1015-1			10.0	10.2	15	60	60	1.0	4.9
	1025	●			1025-1					25	80	70		
	1035	●			1035-1					35	100	80		

● : Stock item

Copying



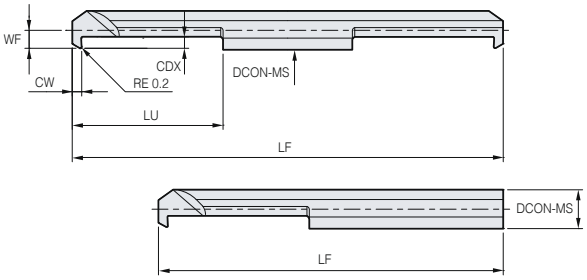


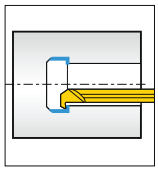
(mm)

Twin Edge				Single Edge				DCON-MS	DCN	LU	Overall length		Detailed cutting edge	
Designation		Coated	Uncoated	Designation		Coated	Uncoated				LF		CDX	WF
		PC30M	Z12M			PC30M	Z12M				Double ended	Single ended		
MBCR	0410	●		MBCR	0410-1			4.0	4.2	10	40	35	1.0	1.9
	0415	●			0415-1					15	50	45		
	0420	●			0420-1					20	60	50		
	0610	●			0610-1			6.0	6.2	10	45	40	1.3	2.9
	0615	●			0615-1					15	55	45		
	0620	●			0620-1					20	60	50		

● : Stock item

Back Boring



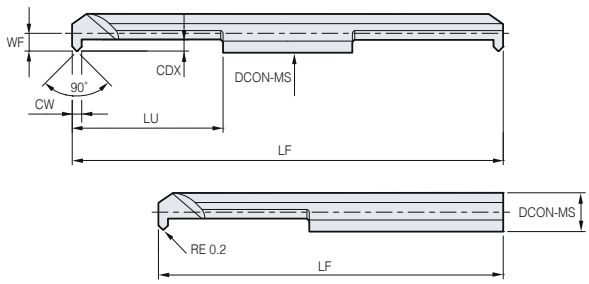


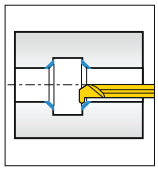
(mm)

Twin Edge				Single Edge				DCON-MS	DCN	LU	Overall length		Detailed cutting edge		
Designation		Coated	Uncoated	Designation		Coated	Uncoated				LF		CW	CDX	WF
		PC30M	Z12M			PC30M	Z12M				Double ended	Single ended			
MBBR	0310	●		MBBR	0310-1			3.0	3.2	10	40	35	1.5	0.8	1.4
	0315	●			0315-1					15	50	45			
	0410	●			0410-1			4.0	4.2	10	40	35	2.0	1.3	1.9
	0415	●			0415-1					15	50	45			
	0420	●			0420-1					20	60	50			
	0610	●			0610-1			6.0	6.2	10	45	40	2.0	1.9	2.9
	0615	●			0615-1					15	55	45			
	0620	●			0620-1					20	65	50			

●: Stock item

Chamfering



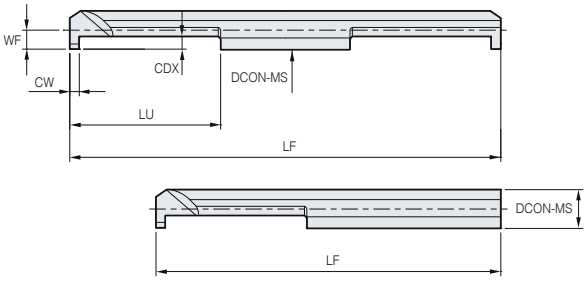


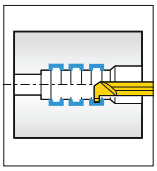
(mm)

Twin Edge				Single Edge				DCON-MS	DCN	LU	Overall length		Detailed cutting edge		
Designation		Coated	Uncoated	Designation		Coated	Uncoated				LF		CW	CDX	WF
		PC30M	Z12M			PC30M	Z12M				Double ended	Single ended			
MBFR	0410	●		MBFR	0410-1			4.0	4.2	10	40	35	0.8	1.0	1.9
	0415	●			0415-1					15	50	45			
	0420	●			0420-1					20	60	50			
	0610	●			0610-1			6.0	6.2	10	45	40	1.4	1.2	2.9
	0615	●			0615-1					15	55	45			
	0620	●			0620-1					20	65	50			

●: Stock item

Square Grooving



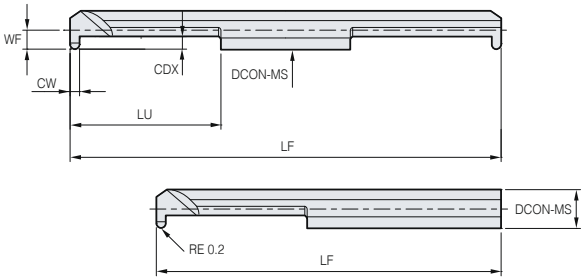


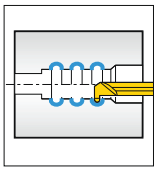
(mm)

Twin Edge				Single Edge				DCON-MS	DCN	LU	Overall length		Detailed cutting edge		
Designation		Coated	Uncoated	Designation		Coated	Uncoated				LF		CW	CDX	WF
		PC30M	Z12M			PC30M	Z12M				Double ended	Single ended			
MGR	0310-1.0	●		MGR	0310-1.0-1			3.0	3.2	10	40	35	1.0	0.8	1.4
	0315-1.0	●			0315-1.0-1					15	50	45			
	0310-1.5	●			0310-1.5-1					10	40	35	1.5		
	0315-1.5	●			0315-1.5-1					15	50	45			
	0410-1.0	●			0410-1.0-1			4.0	4.2	10	40	35	1.0	1.4	1.9
	0420-1.0				0420-1.0-1					20	60	50			
	0410-1.5				0410-1.5-1					10	40	35	1.5		
	0420-1.5				0420-1.5-1					20	60	50			
	0410-2.0	●			0410-2.0-1					10	40	35	2.0		
	0420-2.0				0420-2.0-1					20	60	50			
	0610-1.0	●			0610-1.0-1			6.0	6.2	10	45	40	1.0	1.8	2.9
	0620-1.0	●			0620-1.0-1					20	65	50			
	0610-1.5	●			0610-1.5-1					10	45	40	1.5		
	0620-1.5	●			0620-1.5-1					20	65	50			
	0610-2.0	●			0610-2.0-1					10	45	40	2.0		
	0620-2.0	●			0620-2.0-1					20	65	50			
	0610-2.5	●			0610-2.5-1					10	45	40	2.5	2.0	
	0620-2.5	●			0620-2.5-1					20	65	50			
	0820-1.5	●			0820-1.5-1			8.0	8.2	20	70	60	1.5	2.5	3.9
	0820-2.0	●			0820-2.0-1								2.0		
	0820-2.5	●			0820-2.5-1								2.5	3.5	
	0820-3.0	●			0820-3.0-1								3.0		
	1025-1.5	●			1025-1.5-1			10.0	10.2	25	80	70	1.5	2.5	4.9
	1025-2.0	●			1025-2.0-1								2.0		
	1025-2.5	●			1025-2.5-1								2.5	3.5	
	1025-3.0	●			1025-3.0-1								3.0		

● : Stock item

Round Grooving



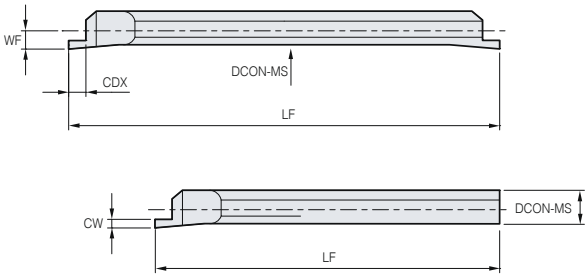


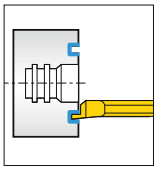
(mm)

Twin Edge				Single Edge				DCON-MS	DCN	LU	Overall length		Detailed cutting edge		
Designation		Coated PC30M	Uncoated Z12M	Designation		Coated PC30M	Uncoated Z12M				LF Double ended	LF Single ended	CW	CDX	WF
MGRR	0310-0.8	●		MGRR	0310-0.8-1			3.0	3.2	10	40	35	0.8	0.8	1.4
	0315-0.8	●			0315-0.8-1					15	50	45			
	0410-1.0	●			0410-1.0-1			4.0	4.2	10	40	35	1.0	1.0	1.9
	0420-1.0	●			0420-1.0-1					20	60	50			
	0610-1.0	●			0610-1.0-1			6.0	6.2	10	45	40	1.0	2.0	2.9
	0620-1.0	●			0620-1.0-1					20	65	50			
	0610-1.5	●			0610-1.5-1					10	45	40	1.5		
	0620-1.5	●			0620-1.5-1					20	65	50			
	0610-2.0	●			0610-2.0-1					10	45	40	2.0		
	0620-2.0	●			0620-2.0-1					20	65	50			
	0820-1.0	●			0820-1.0-1			8.0	8.2	20	70	60	1.0	2.3	3.9
	0820-1.5	●			0820-1.5-1								1.5		
	0820-2.0				0820-2.0-1								2.0		
	1025-1.0	●			1025-1.0-1			10.0	10.2	25	80	70	1.0	2.8	4.9
	1025-1.5	●			1025-1.5-1								1.5		
	1025-2.0	●			1025-2.0-1								2.0		

●: Stock item

Face Grooving



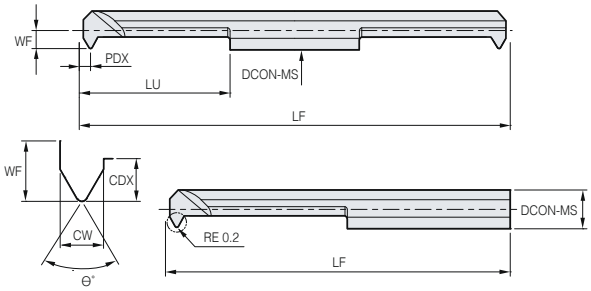


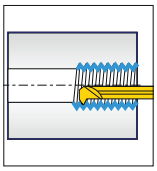
(mm)

Twin Edge				Single Edge				DCON-MS	DCN	Overall length		Detailed cutting edge		
Designation		Coated PC30M	Uncoated Z12M	Designation		Coated PC30M	Uncoated Z12M			LF Double ended	LF Single ended	CW	CDX	WF
MGFR	0400-1.0	●		MGFR	0400-1.0-1			4.0	6.0	50	45	1.0	1.5	1.8
	0400-1.5	●			0400-1.5-1							1.5	2.0	
	0600-1.0	●			0600-1.0-1			6.0	8.5	50	45	1.0	1.5	2.9
	0600-1.5	●			0600-1.5-1							1.5	2.0	
	0600-2.0	●			0600-2.0-1							2.0	2.5	
	0800-1.0	●			0800-1.0-1			8.0	10.4	70	60	1.0	1.5	3.9
	0800-1.5	●			0800-1.5-1							1.5	2.0	
	0800-2.0	●			0800-2.0-1							2.0	2.5	
	0800-2.5	●			0800-2.5-1							2.5	3.0	
	0800-3.0	●			0800-3.0-1							3.0	3.5	
					0800-3.5-1							3.5	4.0	
	1000-2.0	●			1000-2.0-1			10.0	12.4	80	70	2.0	2.5	4.9
	1000-2.5	●			1000-2.5-1							2.5	3.0	
	1000-3.0	●			1000-3.0-1							3.0	3.5	
	1000-3.5	●			1000-3.5-1							3.5	4.0	
	1000-4.0	●			1000-4.0-1							4.0	4.5	
	1000-4.5	●			1000-4.5-1							4.5	5.0	

●: Stock item

Threading





(mm)

Twin Edge				Single Edge				DCON-MS	DCN	Threading			Detailed cutting edge		
Designation		Coated PC30M	Uncoated Z12M	Designation		Coated PC30M	Uncoated Z12M			CW	Pitch / tpi	θ°	WF	CDX	CW
MTR	0315-F60			MTR	0315-F60-1			3.0	3.3	1.2	0.5~1.0	60°	1.45	1.2	0.6
	0415-F60	●			0415-F60-1			4.0	4.3				1.95		
	0615-A60	●			0615-A60-1			6.0	6.2	2.0	0.5~1.5		2.90	2.2	1.0
	0315-F55	●			0315-F55-1			3.0	3.3	1.2	48~24	55°	1.45	1.2	0.6
	0415-F55	●			0415-F55-1			4.0	4.3				1.95		
	0615-A55	●			0615-A55-1			6.0	6.2	2.0	28~16		2.90	2.2	1.0

● : Stock item

Sleeve

SL (Sleeve)

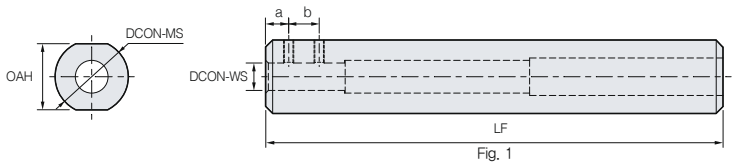


Fig. 1

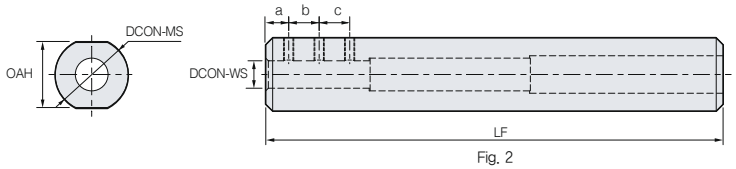


Fig. 2

(mm)

Designation	Stock	DCON-MS	a	b	c	DCON-WS	OAH	LF	Screw	Wrench	Fig.
SL1603	●	3	5	-	-	16	14	100	M3	HW15L	1
SL1604	●	4	5	6	-	16	14	100	M4	HW20L	
SL1605	●	5	5	8	-	16	14	100	M4	HW20L	
SL1606	●	6	5	6	6	16	14	100	M4	HW20L	2
SL1607	●	7	5	6	8	16	14	100	M4	HW20L	
SL2008	●	8	5	10	10	20	18	100	M4	HW20L	2
SL2010	●	10	5	10	10	20	18	100	M5	HW20L	

※ Fine tolerance and surface roughness

● : Stock item

Bearing Solutions

Code system

• **Insert**

※ For machining raceways and bearing shields

ABC	EC6000AHL	-	BS	USER
Manufacture of Bearing	Designation of Bearing		Machining type of Insert	Customer

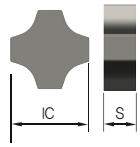
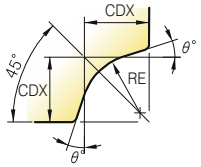
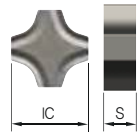
• **Holder**

S	R	C	P	R	25	25	B	-	M	16	B	-	D32
Clamping Method	Insert shape	Holder Style	Relief Angle	Hand	Height of Shank	Width of Shank	Additional information of holder (B: Bearing)		Length of Holder	Length of cutting edge	Application		Minimum diameter for machining

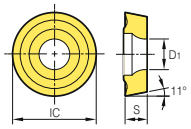
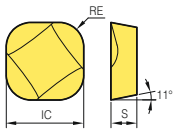
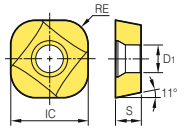
Application

B: Internal machining
E: External machining
F: Face machining
RW: Raceway
BS: Bearing Shield

Applicable insert

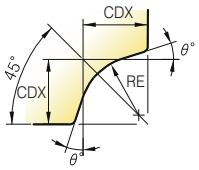
Application	Picture	Designation	Cermet	Dimensions (mm)					Configuration
			CN2500	RE	θ°	CDX	IC	S	
R-Chamfering		MC0906		0.6	12	1.8	9.525	3.18	
		MC0910		1	12	2.4	9.525	3.18	
		MC1206		0.6	18	1.8	12.7	4.76	
		MC1210		1	18	2.4	12.7	4.76	
		MC1212		1.2	18	2.2	12.7	4.76	
		MC1215		1.5	18	3	12.7	4.76	
		MC1220		2	18	3.8	12.7	4.76	
		MC1225		2.5	18	3.8	12.7	4.76	
		MC1525		2.5	18	4	15.875	5.56	
		MC1530		3	18	4.7	15.875	5.56	
		MC1540		4	20	4.7	15.875	5.56	
		MC1206-BR		0.6	18	1.8	12.7	4.76	
		MC1210-BR		1	18	2.4	12.7	4.76	
		MC1212-BR		1.2	18	2.2	12.7	4.76	
		MC1215-BR		1.5	18	3	12.7	4.76	
		MC1220-BR		2	18	3.2	12.7	4.76	
		MC1230-BR		3	18	3.7	12.7	4.76	
		MC1235-BR		3.5	18	3.9	12.7	4.76	

● : Stock item

Application	Picture	Designation	Cermet	Dimensions (mm)			Configuration
			CN2500	RE	IC	S	
R-Chamfering		RPGT0802M0		-	8	2.38	
		RPGT1203M0		-	12	3.18	
		RPGT1604M0		-	16	4.76	
		RPGT2004M0		-	20	4.76	
		SPGR120440L		4	12.7	4.76	
		SPGH090330L		3	9.525	3.18	

● : Stock item

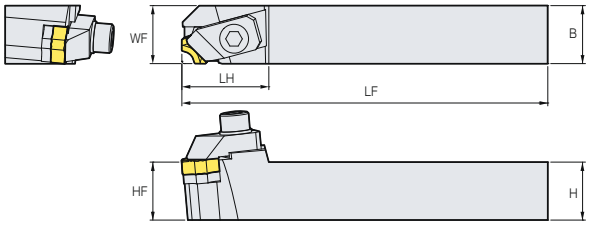
Special order-form

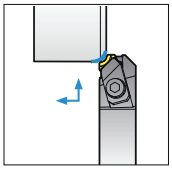


Designation	CN2500	RE	θ°	CDX	IC	S	Configuration
MC...							

CMSN...F Type

MC12□□ MC12□□-BR
MC15□□





• R type holder

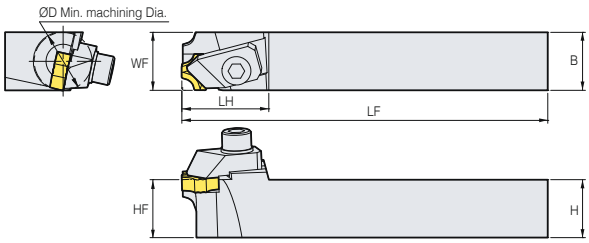
(mm)

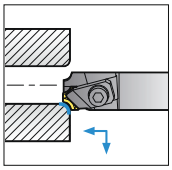
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CMSNR/L	2020B-L12F			33	140	21	20	20	20	R/L	MC12□□ MC12□□-BR	CH6R/L1B	BHA0620	SX42CB	SS0308	HW50L
	2023B-L12F			33	140	24	20	23	20	R/L						
	2525B-L15F			33	140	26	25	25	25	R/L	MC15□□	CH6R/L1B	BHA0620	SX52CB	SS0408	HW50L

● : Stock item

CMSN...B Type

MC12□□ MC12□□-BR





• R type holder

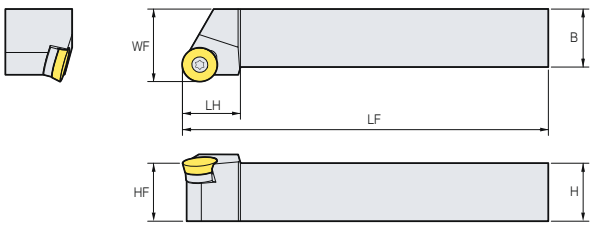
(mm)

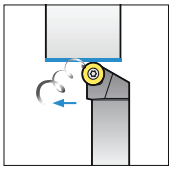
Designation		Stock R	Stock L	DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CMSNR/L	2020B-L12B-D28			28	33	140	21	20	20	20	R/L	MC12□□ MC12□□-BR	CH6R/L1B	BHA0620	SX42CB	SS0308	HW50L
	2525B-L12B-D28			28	33	140	26	25	25	25	R/L		CH6R/L1B	BHA0620	SX42CB	SS0308	HW50L
	1620B-L12B-D20			20	32	140	18	16	20	16	R/L		CH6R/L1B	BHA0620	-	-	HW50L
	2023B-L12B-D28			28	33	140	24	20	23	20	R/L		CH6R/L1B	BHA0620	SX42CB	SS0308	HW50L

● : Stock item

SRGP...E Type

RPGT





• R type holder

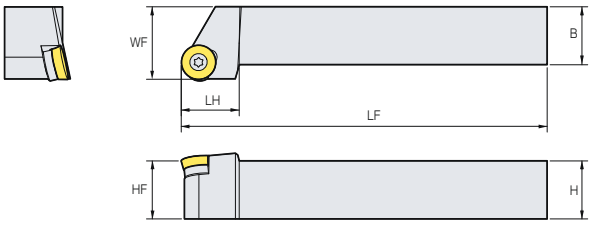
(mm)

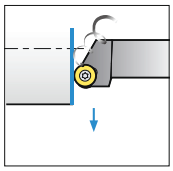
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SRGPR/L	2020B-L12E			20	140	25	20	20	20	R/L	RPGT1203M0	FTKA0410	SR1203S	SHXN0609F	TW15P
	2020B-L16E			20	140	25	20	20	20	R/L	RPGT1604M0	FTNA0513	SR16T3S	SHXN0712F	TW20P
	2525B-L20E			30	140	32	25	25	25	R/L	RPGT2004M0	FTNA0513	SR20T3S	SHXN0712F	TW20P

● : Stock item

SRGP...F Type

RPGT1203M0
RPGT1604M0
RPGT2004M0





• R type holder

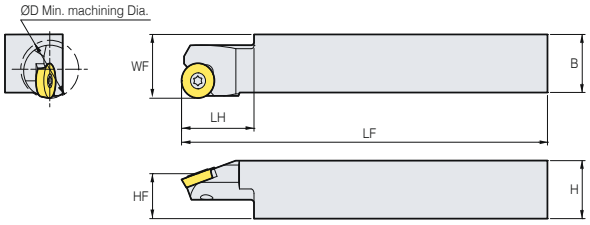
(mm)

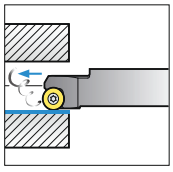
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Shim	Shim Screw	Wrench
SRGPR/L	2020B-L12F			20	140	25	20	20	20	R/L	RPGT1203M0	FTKA0410	SR1203S	SHXN0609F	TW15P
	2020B-L16F			20	140	25	20	20	20	R/L	RPGT1604M0	FTNA0513	SR16T3S	SHXN0712F	TW20P
	2525B-L20F			30	140	32	25	25	25	R/L	RPGT2004M0	FTNA0513	SR20T3S	SHXN0712F	TW20P

● : Stock item

SRCP...B Type

RPGT0802M0
RPGT1203M0
RPGT1604M0





• R type holder

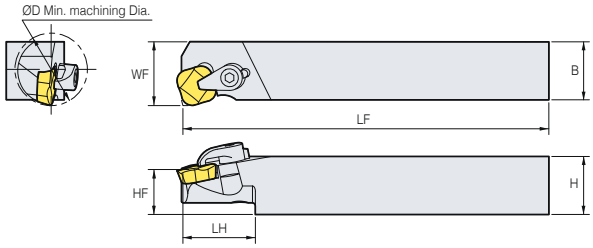
(mm)

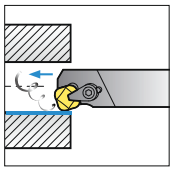
Designation		Stock R	Stock L	DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SRCPR/L	2020B-L08B-D12			12	25	140	21.5	15.5	20	20	R/L	RPGT0802M0	FTKA0305	TW09P
	1919B-L12B-D15			15	25	140	21	16	19	19	R/L	RPGT1203M0	FTNA0408	TW15P
	2020B-L12B-D20			20	25	140	22	15.5	20	20	R/L	RPGT1203M0	FTNA0408	TW15P
	2525B-L16B-D32			32	30	140	27	20	25	25	R/L	RPGT1604M0	FTKA0510	TW20P

● : Stock item

CSKP...B Type

SPGR120440L





• R type holder

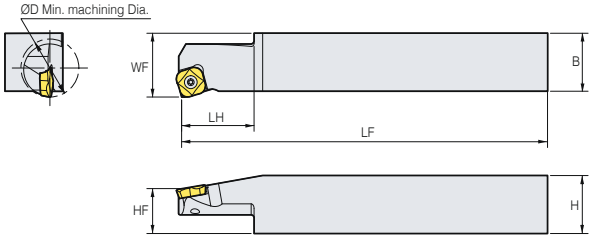
(mm)

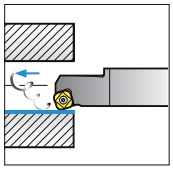
Designation		Stock R	Stock L	DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Wrench
CSKPR/L	2022B-L12B-D30			30	37	140	27	20	22	20	R/L	SPGR120440R/L	CH5R1	CHX0510	HW30L

● : Stock item

SSKP...B Type

SPGH090330L





• R type holder

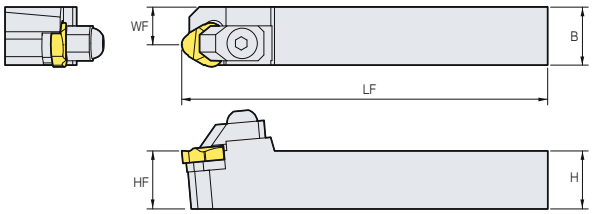
(mm)

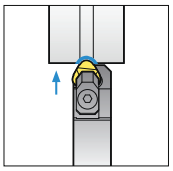
Designation		Stock R	Stock L	DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
SSKPR/L	2020B-L09B-D12			12	20	140	21.7	19	20	20	R/L	SPGH090330R/L	FTNA0307	TW09P
	2020B-L09B-D13			13	20	140	21.7	19	20	20	R/L			
	2020B-L09B-D20			20	20	140	21.7	19	20	20	R/L			

● : Stock item

CKFN...RW Type

KORIC





• R type holder

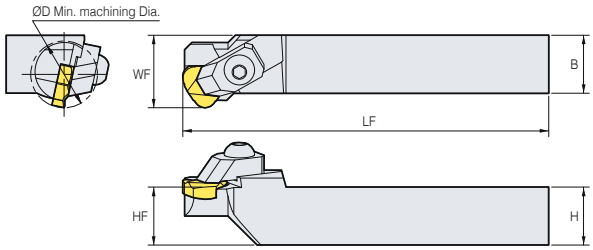
(mm)

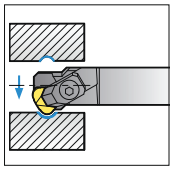
Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CKFNR/L	2020B-L22RW			-	140	12.5	20	20	20	R/L	KORIC2204R/L	CH6N1B	BHA0620	ST42CB	SS0408	HW50L
	2022B-L27RW			-	140	13	20	22	20	R/L	KORIC2704R/L	CH8R/L1B	BHA0820	ST52CB	SS0408	HW60L
	2025B-L33RW			-	140	16	20	25	20	R/L	KORIC3306R/L	CH8R/L1B	BHA0820	ST62CB	SS0408	HW60L
	2533B-L44RW			-	140	21	25	33	25	R/L	KORIC4408R/L	CH8R/L1B	BHA0820	ST82CB	SS0408	HW60L

● : Stock item

CKGN...RW Type

KORIC





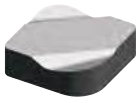
• R type holder

(mm)

Designation		Stock	DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CKGNR/L	2022B-L22RW-D23		23	-	140	30	20	22	20	R/L	KORIC2204R/L	CH6R/L3B	BHA0620	ST42CB	SS0408	HW50L
	2022B-L27RW-D29		29	-	140	34	20	22	20	R/L	KORIC2704R/L	CH6R/L7B	BHA0620	ST52CB	SS0408	HW50L
	2025B-L33RW-D38		38	-	140	33	20	25	20	R/L	KORIC3306R/L	CH6R/L5B	BHA0620	ST62CB	SS0408	HW50L
	2528B-L38RW-D50		50	-	140	46	25	28	25	R/L	KORIC3806R/L	CH8R/L2B	BHA0820	ST72CB	SS0408	HW60L
	2528B-L44RW-D52		52	-	140	50	25	28	25	R/L	KORIC4408R/L	CH8R/L2B	BHA0820	ST82CB	SS0408	HW60L

● : Stock item

CSGN...RW Type



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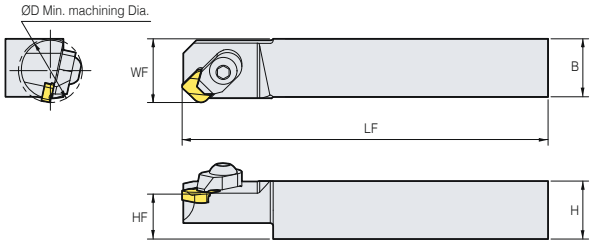
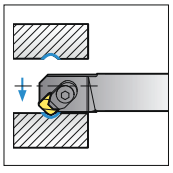




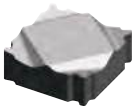
• R type holder

(mm)

Designation		Stock R	Stock L	DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Wrench
CSGNR/L	2020B-L09RW-D17			17	-	140	22	20	20	20	R/L	SNGN0903WR/L	CH5R1	CHX0510	HW30L
	2020B-L09RW-D22			22	-	140	22	20	20	20	R/L	SNGN0903WR/L	CH5R1	CHX0510	HW30L

● : Stock item

CSBN...BS Type



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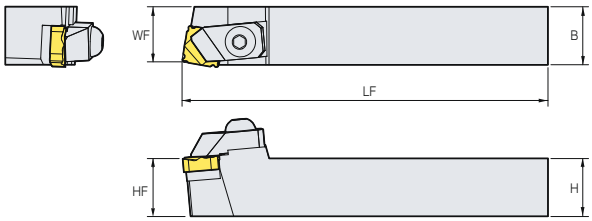
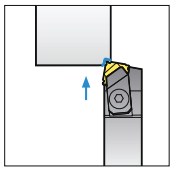




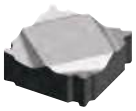
• R type holder

(mm)

Designation		Stock R	Stock L	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CSBNR/L	2023B-L12BS			-	140	21	20	23	20	R/L	SNGN1204SR/L	CH6N1B	BHA0620	SS42CB	SS0308	HW50L
	2525B-L15BS			-	140	23	25	25	25	R/L	SNGN1504SR/L	CH6N1B	BHA0620	SS52CB	SS0408	HW50L

● : Stock item

CSKN...BS Type



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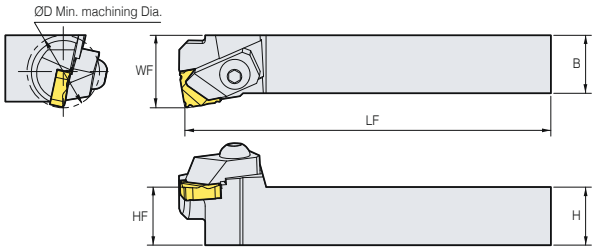
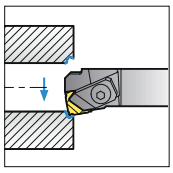




• R type holder

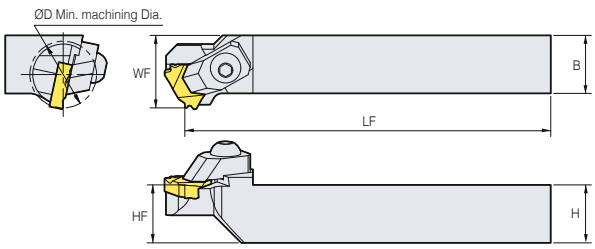
(mm)

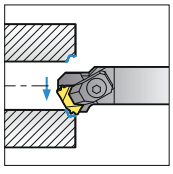
Designation		Stock R	Stock L	DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CSKNR/L	1622B-L09BS-D14			14	-	140	16	16	22	16	R/L	SNGN0903SR/L	CH6R/L2B	BHA0620	-	-	HW50L
	2022B-L12BS-D26			25	-	140	27	20	22	20	R/L	SNGN1204SR/L	CH6R/L1B	BHA0620	SS42CB	SS0308	HW50L
	2525B-L15BS-D35			35	-	140	31	25	25	25	R/L	SNGN1504SR/L	CH6R/L3B	BHA0620	SS52CB	SS0408	HW50L

● : Stock item

CTGN...BS Type

TNGN





• R type holder

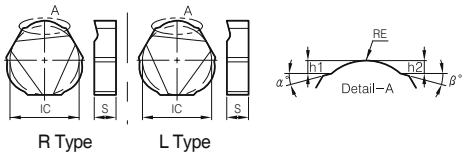
(mm)

Designation		Stock R	Stock L	DMIN	LH	LF	WF	HF	B	H	HAND	Applicable insert	Clamp	Clamp Screw	Shim	Shim Screw	Wrench
CTGNR/L	2021B-K22BS-D25			25	-	140	30	20	21	20	R/L	TNGN2204SR/L	CH6R/L7B	BHA0620	ST42CB	SS0408	HW50L

● : Stock item

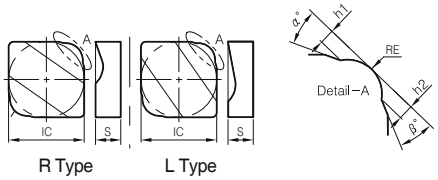
Machining Race-way

KORIC... R/L Type



		IC	S	RE	h_1	h_2	α°	β°
KORIC	2204R/L	12.7	4.76					
	2704R/L	15.875	4.76					
	3306R/L	19.05	6.0					
	3806R/L	22.225	6.0					
	4408R/L	25.4	8.0					

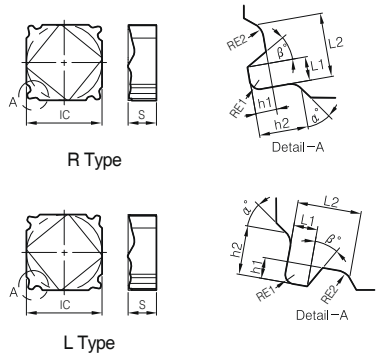
SNGN... WR/L Type



		IC	S	RE	h_1	h_2	α°	β°
SNGN	0903WR/L	9.525	3.18					
	1504WR/L	15.875	4.76					
	1905WR/L	19.05	5.56					

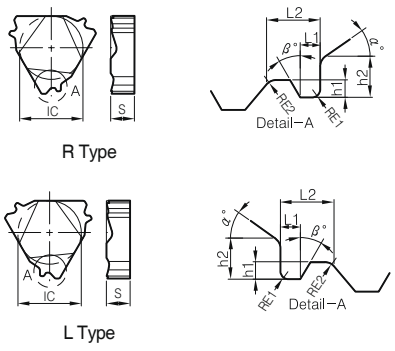
Machining for Bearing shield

KORIC... R/L Type



		IC	S	L_1	L_2	h_1	h_2	RE_1	RE_2	α°	β°
SNGN	0903SR/L	9.525	3.18								
	1204SR/L	12.7	4.76								
	1504SR/L	15.875	4.76								

TNGN...SR/L Type

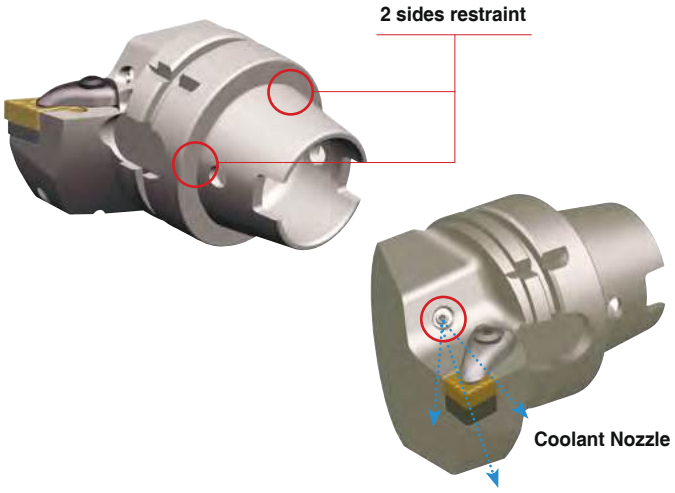


		IC	S	L_1	L_2	h_1	h_2	RE_1	RE_2	α°	β°
TNGN	02204SR/L	12.7	4.76								

2 sides restraint - side and taper part

HSK Tooling System (For Multi-task Machines)

- 2 sides restraint - side and taper part
- Toughness guaranteed for static and dynamic movements
- Precision guaranteed on shaft and repeat directions
- Suitable at high speeds
- Suitable for small work pieces
- Coolant Nozzle is easily adjustable



Code system

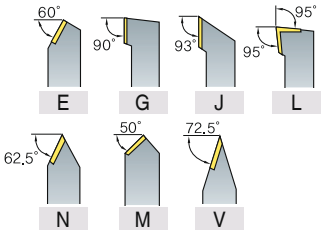
H63T	D	C	L	N	R	DX	-	12

Taper design & size

Clamping Type
D: Double Clamp
M: Multi Clamp
P: Lever Lock
S: Screw On
W: Wedge Clamp

Insert Shape
C: 80° Diamond
D: 55° Diamond
S: 90° Square
T: 60° Triangle
V: 35° Diamond
W: 80° Hexagon

Holder Style

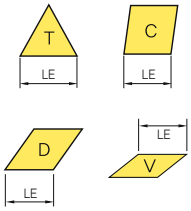


Clearance angle of insert
N = 0°
B = 5°

Hand
R: Right
L: Left
N: Neutral

Length of tool holder
DX : 65
H : 100
LE : 140

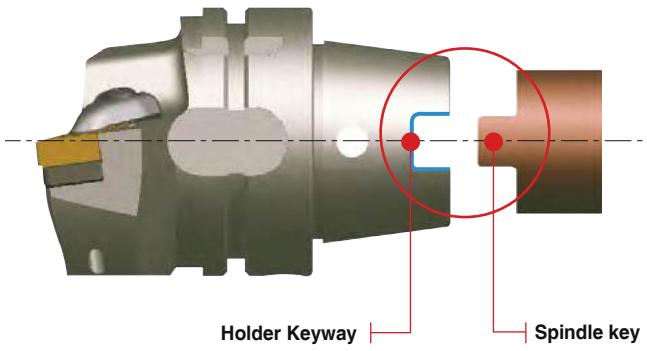
Cutting edge Length



ICTM (Interface committee for turning mill)

- As an interface for Multi-task Machines in turning tools which is a tooling system based on the ICTM standard established by major 17 Japanese makers.
- It is compatible with the HSK-A type and can be used with tools in Multi-task Machines and MCT both.

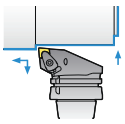
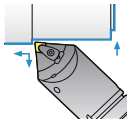
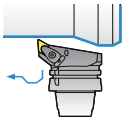
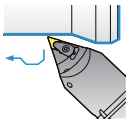
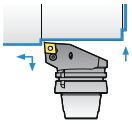
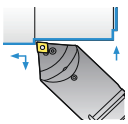
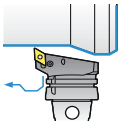
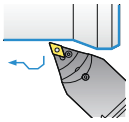
Tolerance of keyway has been improved: HSK-T63

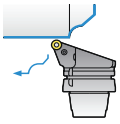
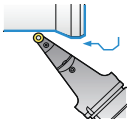
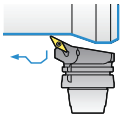
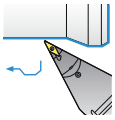
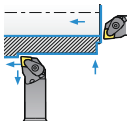
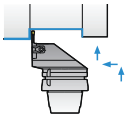
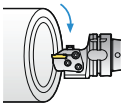


Tolerance comparison (Example)

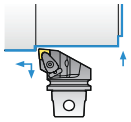
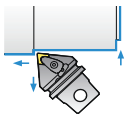
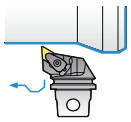
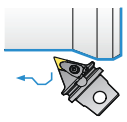
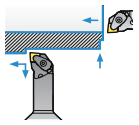
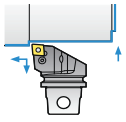
Remarks	Maximum Tolerance	Minimum Tolerance
ICTM STANDARD HSK-T63	0.075	0.035
ISO STANDARD HSK-A63	0.33	0.08

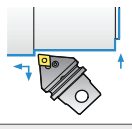
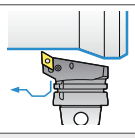
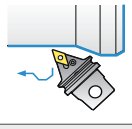
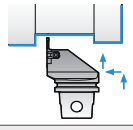
Index for HSK Tooling System

Cutting Shape								
Designation	H63T-DCLNR/L-DX12	H63T-DCMNN-H/L12	H63T-DDJNR/L-DX15	H63T-DDNNN-H/L15	H63T-PCLNR/L-DX12	H63T-PCMNN-H/L12	H63T-PDJNR/L-DX15	H63T-PDNNN-H/L15
Tool cutting edge angle	95°	95°	93°	107.5°	95°	95°	93°	107.5°
Page	B219	B219	B219	B219	B220	B220	B220	B220
Turning	●	●	●	●	●	●	●	●
Copying			●	●			●	●
Facing	●	●	●	●	●	●	●	●
Back turning	●	●	●	●	●	●	●	●
Internal turning								

Cutting Shape								
Designation	H63T-PRGCR-DX12	H63T-PRDCN-H/L12	H63T-SVPBR/L-DX16	H63T-SVVBN-H/L16	H63T-A25K/A32L-DCLNR/L-12	H63T-MCFR/L	H63T-MCHR/L	
Tool cutting edge angle	-	-	117.5°	117.5°	95°	-	-	
Page	B221	B221	B221	B221	B222	B222	B222	
Turning	●	●	●	●	●	●		
Copying	●	●	●	●		●		
Facing	●	●	●	●	●	●	●	
Back turning	●	●	●	●	●			
Internal turning					●			

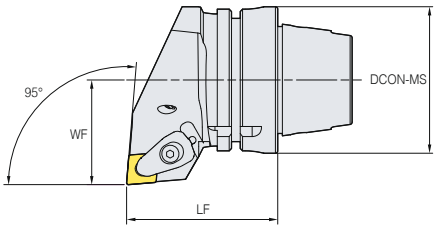
Index for KM Tooling System

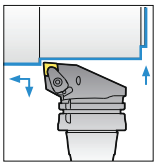
Cutting Shape						
Designation	KM50-DCLNR/L-C12 KM63UT-DCLNR/L-D12	KM50-DCMNN-C12 KM63UT-DCMNN-D12	KM50-DDJNR/L-C15(-3) KM63UT-DCJNR/L-D15(-3)	KM50-DDNNN-C15(-3) KM63UT-DDNNN-D15(-3)	KM50-A25K-DCLNR/L-12 KM50-A32K-DCLNR/L-12 KM63UT-A25K-DCLNR/L-12 KM63UT-A32L-DCLNR/L-12	KM50-PCLNR/L-C12 KM63UT-PCLNR/L-D12
Tool cutting edge angle	95°	95°	93°	107.5°	95°	95°
Page	B226	B226	B226	B227	B229	B227
Turning	●	●	●	●	●	●
Copying			●	●		
Facing	●	●	●	●	●	●
Back turning	●	●	●	●	●	●
Internal turning					●	

Cutting Shape						
Designation	KM50-PCMNN-C12 KM63UT-PCMNN-D12	KM50-PDJNR/L-C15(-3) KM63UT-PDJNR/L-D15(-3)	KM50-PDNNN-C15(-3) KM63UT-PDNNN-D15(-3)	KM50-MCHR/L KM63UT-MCHR/L		
Tool cutting edge angle	95°	93°	107.5°	-		
Page	B227	B228	B228	B228		
Turning	●	●	●	●		
Copying		●	●	●		
Facing	●	●	●			
Back turning	●	●	●	●		
Internal turning						

DCLNR/L

CN□□





95°

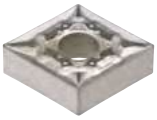
• R type holder

(mm)

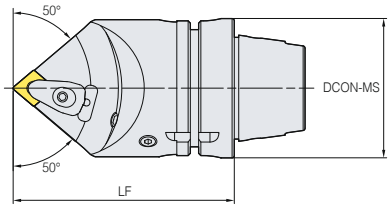
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Clamp	Screw	Shim	Shim Screw	Spring	Nozzle	Plug	Wrench	Coolant Pipe
H63T-DCLNR/L-DX12	65	45	63	R/L	CN□□1204□□	CVH4	CHX0518	SC44V	FTKA0410	SPR0714	CN0605	-	HW30P	CP63T

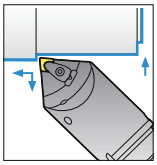
Applicable inserts **B5 ~ B11**

DCMNN



CN□□





95°

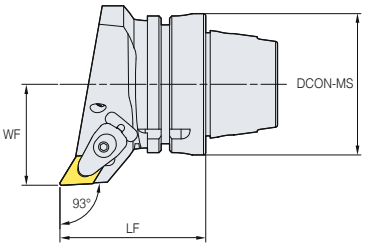
(mm)

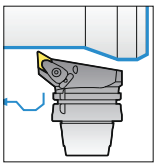
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Clamp	Screw	Shim	Shim Screw	Spring	Nozzle	Plug	Wrench	Coolant Pipe
H63T-DCMNN-H12	100	-	63	N	CN□□1204□□	CVH4	CHX0518	SC44V	FTKA0410	SPR0714	CN0605	KHA0808	HW30P	CP63T
H63T-DCMNN-L12	140	-	63	N										

Applicable inserts **B5 ~ B11**

DDJNR/L

DN□□





93°

• R type holder

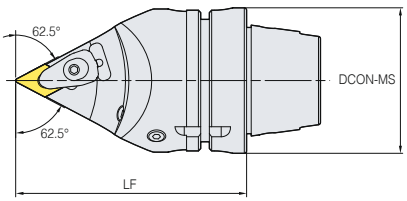
(mm)

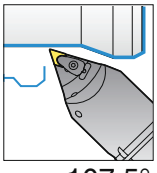
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Clamp	Screw	Shim	Shim Screw	Spring	Nozzle	Plug	Wrench	Coolant Pipe
H63T-DDJNR/L-DX15	65	45	63	R/L	DN□□1506□□	CVH4	CHX0518	SD43V	FTKA0410	SPR0714	CN0605	-	HW30P	CP63T
H63T-DDJNR/L-DX15-3	65	45	63	R/L	DN□□1504□□			SD44V						

Applicable inserts **B13 ~ B18**

DDNNN

DN□□





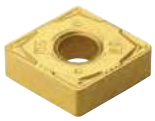
107.5°

(mm)

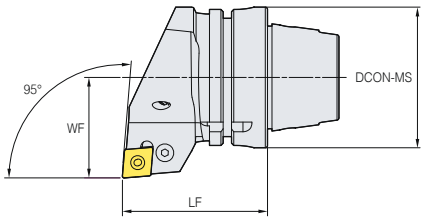
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Clamp	Screw	Shim	Shim Screw	Spring	Nozzle	Plug	Wrench	Coolant Pipe
H63T-DDNNN-H15	100	-	63	N	DN□□1506□□	CVH4	CHX0518	SD43V	FTKA0410	SPR0714	CN0605	KHA0808	HW30P	CP63T
H63T-DDNNN-L15	140	-	63	N										
H63T-DDNNN-H15-3	100	-	63	N	DN□□1504□□	CVH4	CHX0518	SD44V	FTKA0410	SPR0714	CN0605	KHA0808	HW30P	CP63T
H63T-DDNNN-L15-3	100	-	63	N										

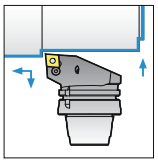
Applicable inserts **B13 ~ B18**

PCLNR/L



CN□□





95°

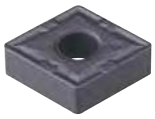
• R type holder

(mm)

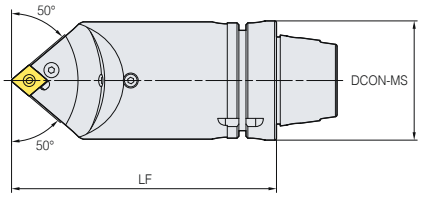
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Punching	Nozzle	Plug	Wrench	Coolant Pipe
H63T-PCLNR/L-DX12	65	45	63	R/L	CN□□1204□□	LV4N	VHX0820N	SC42N	SP4N	LSPS4	CN0605	-	HW30L	CP63T

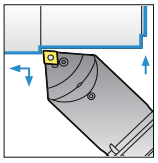
Applicable inserts **B5 ~ B11**

PCMNN



CN□□





95°

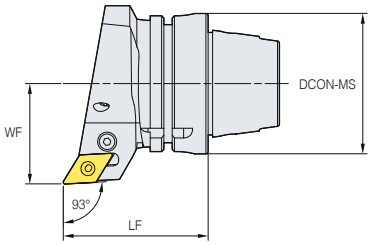
(mm)

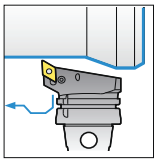
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Punching	Nozzle	Plug	Wrench	Coolant Pipe
H63T-PCMNN-H12	100	-	63	N	CN□□1204□□	LV4N	VHX0820N	SC42N	SP4N	LSPS4	CN0605	KHA0808	HW30L	CP63T
H63T-PCMNN-L12	140	-	63	N										

Applicable inserts **B5 ~ B11**

PDJNR/L

DN□□





93°

• R type holder

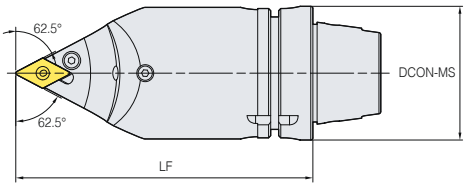
(mm)

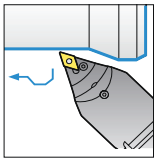
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Punching	Nozzle	Plug	Wrench	Coolant Pipe
H63T-PDJNR/L-DX15	65	45	63	R/L	DN□□1506□□	LV4BN	VHX0821N	SD42N	SP4N	LSPS4	CN0605	-	HW30L	CP63T
H63T-PDJNR/L-DX15-3	65	45	63	R/L	DN□□1504□□			SD43N						

Applicable inserts **B13 ~ B18**

PDNNN

DN□□





107.5°

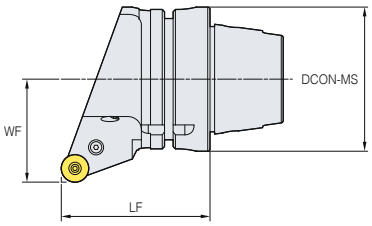
(mm)

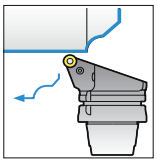
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Punching	Nozzle	Plug	Wrench	Coolant Pipe
H63T-PDNNN-H15	100	-	63	N	DN□□1506□□	LV4BN	VHX0821N	SD42N	SP4N	LSPS4	CN0605	KHA0808	HW30L	CP63T
H63T-PDNNN-L15	140	-	63	N										
H63T-PDNNN-H15-3	100	-	63	N	DN□□1504□□	LV4BN	VHX0821N	SD43N	SP4N	LSPS4	CN0605	KHA0808	HW30L	CP63T
H63T-PDNNN-L15-3	140	-	63	N										

Applicable inserts **B13 ~ B18**

PRGCR/L

RCMX1204M0





• R type holder

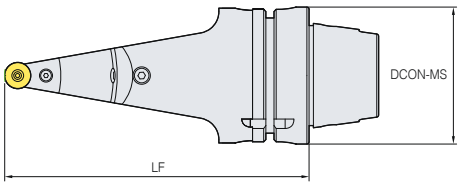
(mm)

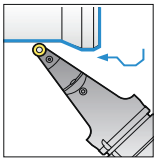
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Punching	Nozzle	Plug	Wrench	Coolant Pipe
H63T-PRGCR/L-DX12	65	45	63	R/L	RCMX1204M0	LR12	VHX0617	SR12	SP3	LSPS3	CN0605	-	HW25L	CP63T

Applicable inserts **B54**

PRDCN

RCMX1204M0





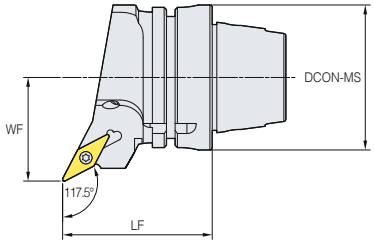
(mm)

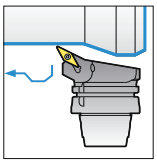
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Punching	Nozzle	Plug	Wrench	Coolant Pipe
H63T-PRDCN-H12	100	-	63	N	RCMX1204M0	LR12	VHX0617	SR12	SP3	LSPS3	CN0605	-	HW25L	CP63T
H63T-PRDCN-L12	140	-	63	N										

Applicable inserts **B54**

SVPBR/L

VB□T





117.5°

• R type holder

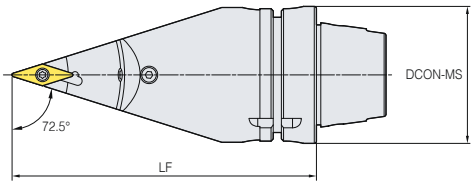
(mm)

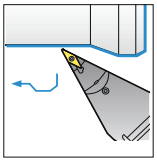
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Screw	Shim Screw	Shim	Nozzle	Plug	Wrench	Wrench	Coolant Pipe
H63T-SVPBR/L-DX16	65	45	63	R/L	VB□T1604□□	FTGA03512	SHXN0509F	SV32S	CN0605	-	TW15P	HW32L	CP63T

Applicable inserts **B65 ~ B66**

SVVBN

VB□T





117.5°

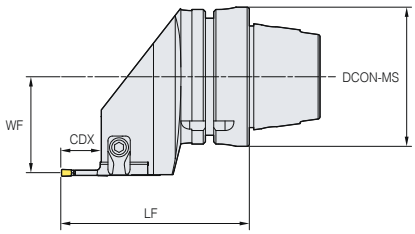
(mm)

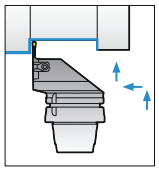
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Screw	Shim Screw	Shim	Nozzle	Plug	Wrench	Wrench	Coolant Pipe
H63T-SVVBN-H16	100	-	63	N	VB□T1604□□	FTGA03512	SHXN0509F	SV32S	CN0605	KHA0808	TW15P	HW32L	CP63T
H63T-SVVBN-L16	140	-	63	N									

Applicable inserts **B65 ~ B66**

MCHR/L

MGMN / MGMR/L
MGGN / MRMN





• R type holder

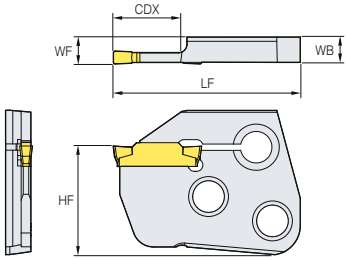
(mm)

Designation	CDX	WF	LF	DCON-MS	Applicable insert	Applicable Cartridge	Clamp	Clamp Screw	Hinge Screw	Screw	Nozzle	Plug	Wrench	Coolant Pipe
H63T-MCHR/L	16	45	85	63	MGMN MGMR/L MGGN MRMN	MCER/L3-T16 MCER/L4-T16	CHX8N	DHA0818F	RHA0613	FHGA0618	CN0605	-	HW40L	CP63T
	20	45	89	63		MCER/L5-T20 MCER/L6-T20								

Applicable inserts **C43 ~ C45**

MCER/L (Cartridge)

MGMN / MGMR/L
MGGN / MRMN



• R type holder

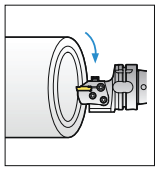
(mm)

Designation		CDX	WB	LF	HF	WF	HAND	Applicable insert		Tool holders
								CW	Designation	
MCER/L	3-T16	16	6	44.5	25.83	6.35	R/L	3	MGMN MGMR/L MGGN MGMN	H63T-MCHR/L
	4-T16	16	5.97	44.5	25.83	6.35	R/L	4		
	5-T20	20	5.87	44.5	25.83	6.35	R/L	5		
	6-T20	20	5.82	44.5	25.83	6.35	R/L	6		

Applicable inserts **C43 ~ C45**

MCHR/L

MFMN300
MGMN400



• R type holder

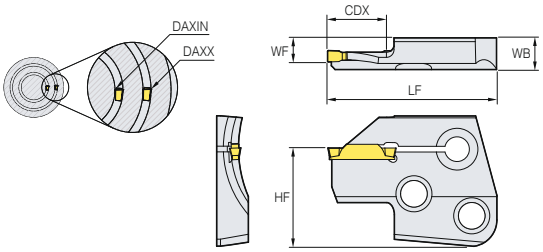
(mm)

Designation	CW	CDX	LF	DCON-MS	Applicable insert	Applicable Cartridge	Clamp	Clamp Screw	Hinge Screw	Screw	Nozzle	Plug	Wrench	Coolant Pipe
H63T-MCHR/L	3	16	85	63	MFMN300	MCFR/L3-24/35-T16 MCFR/L3-29/40-T16 MCFR/L3-34/50-T16 MCFR/L3-44/70-T16 MCFR/L3-64/99-T16	CHX8N	DHA0818F	RHA0613	FHGA0618	CN0605	-	HW40L	
	4	16	85	63	MGMN400	MCFR/L4-44/60-T16 MCFR/L4-60/120-T16 MCFR/L4-112/200-T16								

Applicable inserts **C43 ~ C45**

MCFR/L (Cartridge)

MFMN300
MGMN400



• R type holder

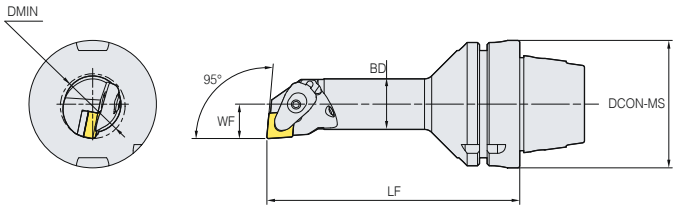
(mm)

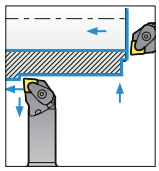
Designation		CDX	DAXIN	DAXX	WB	LF	HF	HAND	Applicable insert		Tool holders
									CW	Designation	
MCFR/L3-	24/35-T16	16	24	35	8	44.5	25.83	R/L	3	MFMN300	H63T-MCHR/L
	29/40-T16	16	29	40	8	44.5	25.83	R/L	3		
	34/50-T16	16	34	50	8	44.5	25.83	R/L	3		
	44/70-T16	16	44	70	8	44.5	25.83	R/L	3		
	64/99-T16	16	67	99	8	44.5	25.83	R/L	3		
MCFR/L4-	44/60-T16	16	44	60	7.97	44.5	25.83	R/L	4	MGMN400	
	60/120-T16	16	60	120	7.97	44.5	25.83	R/L	4		
	112/200-T16	16	112	200	7.97	44.5	25.83	R/L	4		

Applicable inserts **C43 ~ C45**

DCLNR/L

CN□□





95°

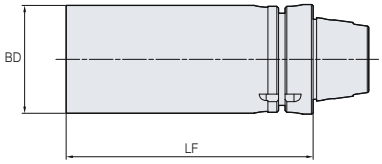
• R type holder

(mm)

Designation	DMIN	BD	LF	WF	DCON-MS	Applicable insert	Clamp	Screw	Shim	Shim Screw	Spring	Nozzle	Plug	Wrench	Coolant Pipe
H63T-A25K-DCLNR/L-12	32	25	125	17	63	CN□□1204□□	CVH4	CHX0518	SC42V	FTKA0410	SPR0714	CN0605	-	HW30P	CP63T
H63T-A32L-DCLNR/L-12	40	32	140	22	63										

Applicable inserts **B5 ~ B11**

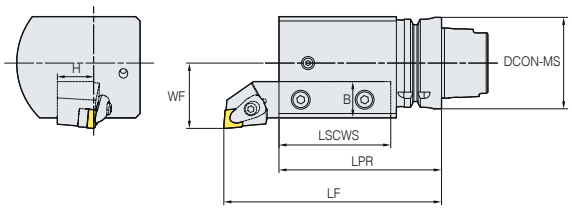
Blank Tool



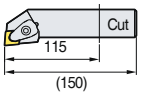
(mm)

Designation	BD	LF	Coolant Pipe
HSK-T63-BL62-102	62	102	CP63T
HSK-T63-BL62-142	62	142	
HSK-T63-BL100-67	100	67	
HSK-T63-BL120-70	120	70	

EV2525R/L-112



• **Holder information**
- Holder size: 25 × 25
- Before setting the holder, please cut the holder length to 115 mm.



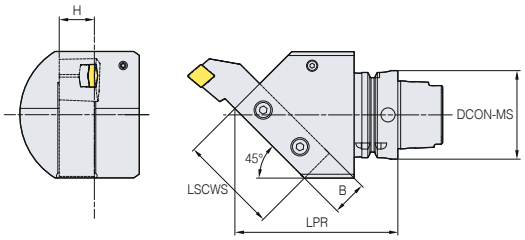
Holder information
• Holder size: 25 × 25
• Before setting the holder, please cut the holder length to 115 mm.

• R type holder

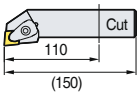
(mm)

Designation	LF	WF	DCON-MS	DCON-WS	BD	LPR	B	H	LSCWS	HAND	Screw	Plug	Nozzle	Wrench	Coolant Pipe
EV2525R/L-112	150	45	63	-	-	112	25	25	77	R/L	KHA1231	KHA0808	CN0605	HW50L	CP63T

EV2525R/L-115



• **Holder information**
- Holder size: 25 × 25
- Before setting the holder, please cut the holder length to 110 mm.



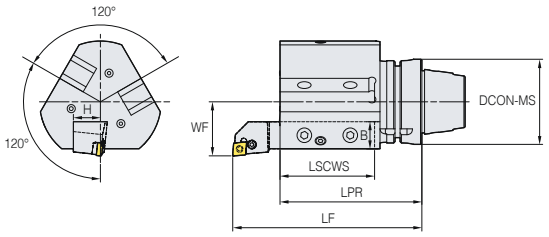
Holder information
• Holder size: 25 × 25
• Before setting the holder, please cut the holder length to 110 mm.

• R type holder

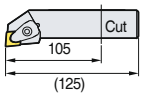
(mm)

Designation	LF	WF	DCON-MS	DCON-WS	BD	LPR	B	H	LSCWS	HAND	Screw	Plug	Nozzle	Wrench	Coolant Pipe
EV2525R/L-115	-	-	63	-	-	115	25	25	70	R/L	KHA1231	KHA0808	CN0605	HW50L	CP63T

EV2020R/L-105-3



• **Holder information**
- Holder size: 20 × 20
- Before setting the holder, please cut the holder length to 105 mm.



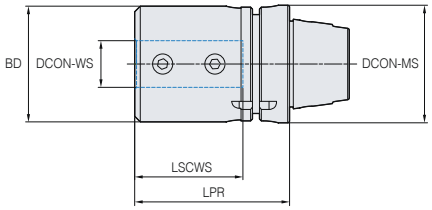
Holder information
• Holder size: 20 × 20
• Before setting the holder, please cut the holder length to 105 mm.

• R type holder

(mm)

Designation	LF	WF	DCON-MS	DCON-WS	BD	LPR	B	H	LSCWS	HAND	Screw	Plug	Nozzle	Wrench	Coolant Pipe
EV2020R/L-105-3	140	40	63	-	-	105	20	20	70	R/L	KHA1231	KHA0808	CN0605	HW50L	CP63T

B○○-○○



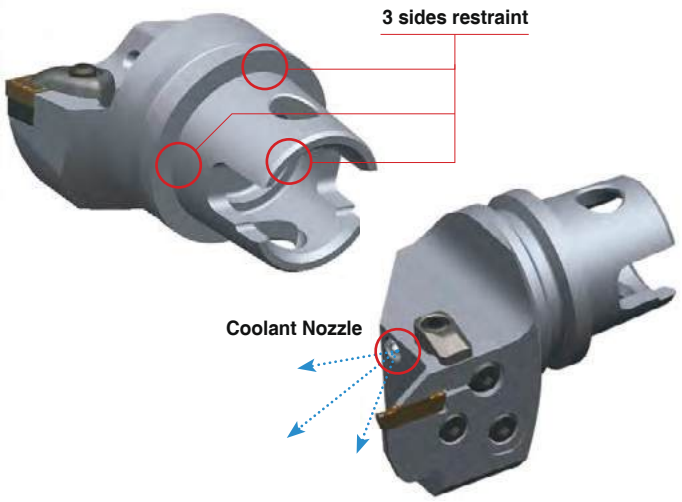
(mm)

Designation	DCON-MS	DCON-WS	BD	LPR	H	LSCWS	HAND	Screw	Wrench	Coolant Pipe
B08-65	63	8	28	65	40	40	N	KHA1218	HW50L	CP63T
B10-70	63	10	35	70	45	45	N			
B12-70	63	12	42	70	45	45	N			
B16-75	63	16	48	75	50	50	N			
B20-75	63	20	52	75	50	50	N			
B25-83	63	25	62	83	58	58	N			
B32-87	63	32	62	87	62	62	N			
B40-97	63	40	65	97	72	72	N			

3 Face Binding - Superior precision

KM Tooling System (For Multi-task Machines)

- 3 Face binding/Superior precision
- Flexible clamping system/Superior rigidity
- Various size & style
- Appropriate for turning & milling
- Adjustable coolant direction with coolant nozzle



Code system

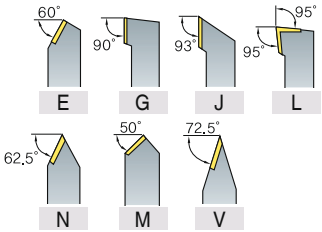
KM50 D C L N R DX - 12

Taper design & size
50, 63UT
80ATC, 100

Clamping Type
D: Double Clamp
M: Multi Clamp
P: Lever Lock
S: Screw On
W: Wedge Clamp

Insert Shape
C: 80° Diamond
D: 55° Diamond
S: 90° Square
T: 60° Triangle
V: 35° Diamond
W: 80° Hexagon

Holder Style

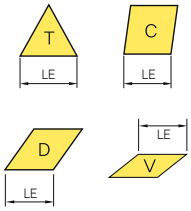


Clearance angle of insert
N = 0°
B = 5°

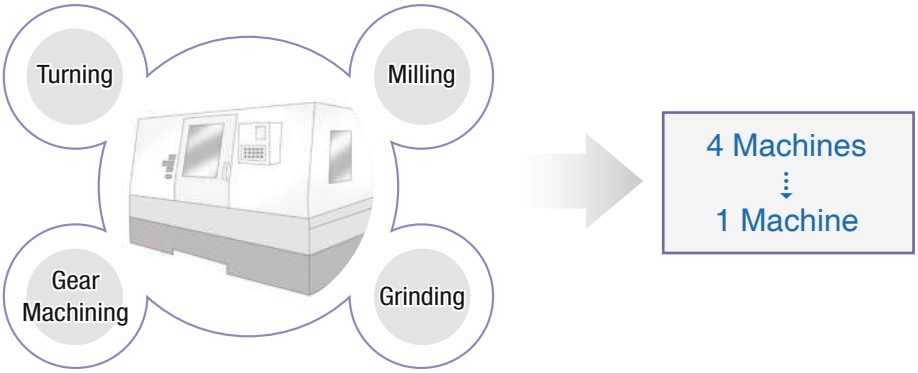
Hand
R: Right
L: Left
N: Neutral

Length of tool holder
DX : 65
H : 100
L : 140

Cutting edge Length



Multi-tasking machine



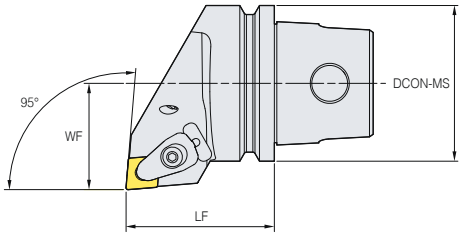
» KM Tooling system is superior for wide application.

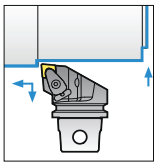
External Process | Internal Process | Grooving Process | Drill Process | Parting-off Process

KM50, KM63UT, KM80, KM100 Standard and Special type can be produced.

DCLNR/L

CN□□





95°

• R type holder

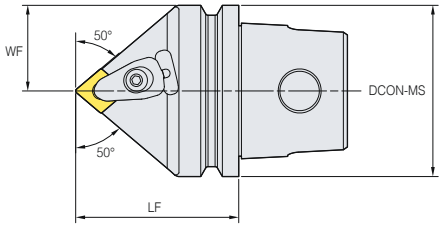
(mm)

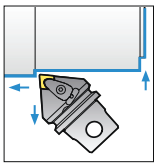
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Clamp	Screw	Shim	Shim Screw	Spring	Nozzle	Plug	Wrench
KM50-DCLNR/L-C12	50	35	50	R/L	CN□□1204□□	CVH4	CHX0518	SC44V	FTKA0410	SPR0714	CN0605	-	HW30P
KM63UT-DCLNR/L-D12	60	43	63	R/L									

Applicable inserts **B5 ~ B11**

DCMNN

CN□□





95°

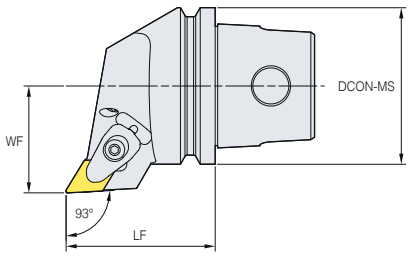
(mm)

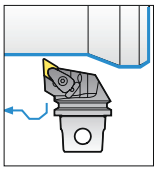
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Clamp	Screw	Shim	Shim Screw	Spring	Nozzle	Plug	Wrench
KM50-DCMNN-C12	50	-	50	N	CN□□1204□□	CVH4	CHX0518	SC44V	FTKA0410	SPR0714	CN0605	KHA0808	HW30P
KM63UT-DCMNN-D12	60	-	63	N									

Applicable inserts **B5 ~ B11**

DDJNR/L

DN□□





93°

• R type holder

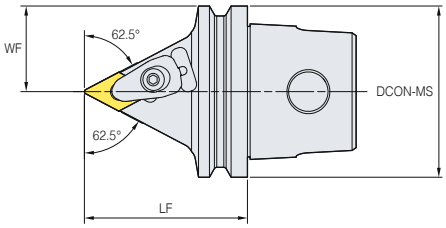
(mm)

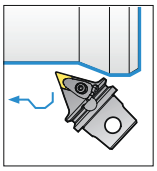
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Clamp	Screw	Shim	Shim Screw	Spring	Nozzle	Plug	Wrench
KM50-DDJNR/L-C15	50	35	50	R/L	DN□□1506□□	CVH4	CHX0518	SD43V	FTKA0410	SPR0714	CN0605	-	HW30P
KM50-DDJNR/L-C15-3	50	35	50	R/L	DN□□1504□□	CVH4	CHX0518	SD44V	FTKA0410	SPR0714	CN0605	-	HW30P
KM63UT-DDJNR/L-D15	60	43	63	R/L	DN□□1506□□	CVH4	CHX0518	SD43V	FTKA0410	SPR0714	CN0605	-	HW30P
KM63UT-DDJNR/L-D15-3	60	43	63	R/L	DN□□1504□□	CVH4	CHX0518	SD44V	FTKA0410	SPR0714	CN0605	-	HW30P

Applicable inserts **B13 ~ B18**

DDNNN

DN□□





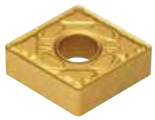
117.5°

(mm)

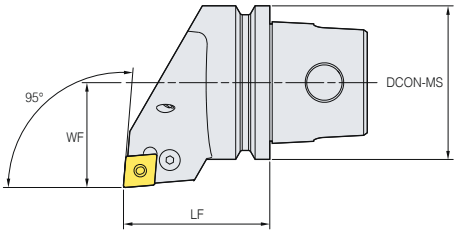
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Clamp	Screw	Shim	Shim Screw	Spring	Nozzle	Plug	Wrench
KM50-DDNNN-C15	50	25	50	N	DN□□1506□□	CVH4	CHX0518	SD43V	FTKA0410	SPR0714	CN0605	KHA0808	HW30P
KM50-DDNNN-C15-3	50	25	50	N	DN□□1504□□	CVH4	CHX0518	SD44V	FTKA0410	SPR0714	CN0605	KHA0808	HW30P
KM63UT-DDNNN-D15	60	31.5	63	N	DN□□1506□□	CVH4	CHX0518	SD43V	FTKA0410	SPR0714	CN0605	KHA0808	HW30P
KM63UT-DDNNN-D15-3	60	31.5	63	N	DN□□1504□□	CVH4	CHX0518	SD44V	FTKA0410	SPR0714	CN0605	KHA0808	HW30P

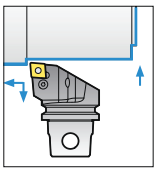
Applicable inserts **B13 ~ B18**

PCLNR/L



CN□□





95°

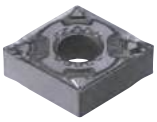
• R type holder

(mm)

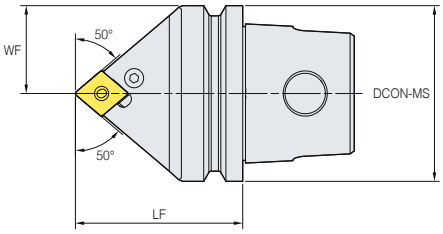
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Punching	Nozzle	Plug	Wrench
KM50-PCLNR/L-C12	50	35	50	R/L	CN□□1204□□	LV4N	VHX0820N	SC42N	SP4N	LSPS4	CN0605	-	HW30L
KM63UT-PCLNR/L-D12	60	43	63	R/L									

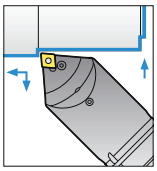
Applicable inserts **B5 ~ B11**

PCMNN



CN□□





95°

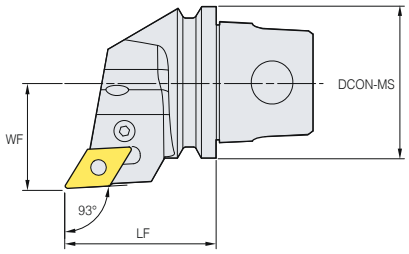
(mm)

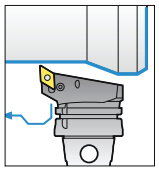
Designation	LF	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Punching	Nozzle	Plug	Wrench
KM50-PCMNN-C12	50	50	N	CN□□1204□□	LV4N	VHX0820N	SC42N	SP4N	LSPS4	CN0605	KHA0808	HW30L
KM63UT-PCMNN-D12	60	63	N									

Applicable inserts **B5 ~ B11**

PDJNR/L

DN□□





93°

• R type holder

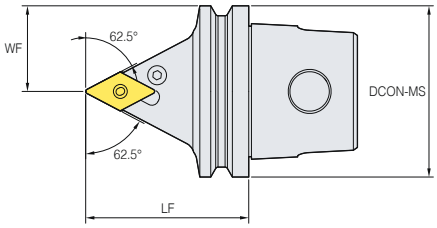
(mm)

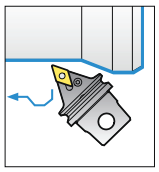
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Punching	Nozzle	Plug	Wrench
KM50-PDJNR/L-C15	50	35	50	R/L	DN□□1506□□	LV4BN	VHX0821N	SD42N	SP4N	LSPS4	CN0605	-	HW30L
KM50-PDJNR/L-C15-3	50	35	50	R/L	DN□□1504□□	LV4BN	VHX0821N	SD43N	SP4N	LSPS4	CN0605	-	HW30L
KM63UT-PDJNR/L-D15	60	43	63	R/L	DN□□1506□□	LV4BN	VHX0821N	SD42N	SP4N	LSPS4	CN0605	-	HW30L
KM63UT-PDJNR/L-D15-3	60	43	63	R/L	DN□□1504□□	LV4BN	VHX0821N	SD43N	SP4N	LSPS4	CN0605	-	HW30L

Applicable inserts **B13 ~ B18**

PDNNN

DN□□





107.5°

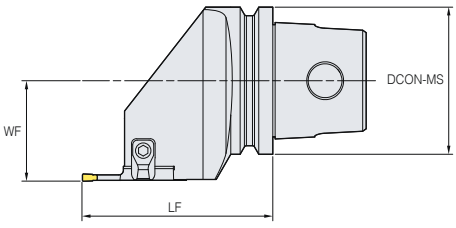
(mm)

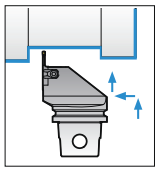
Designation	LF	WF	DCON-MS	HAND	Applicable insert	Lever	Screw	Shim	Shim Pin	Punching	Nozzle	Plug	Wrench
KM50-PDNNN-C15	50	-	50	N	DN□□1506□□	LV4BN	VHX0821N	SD42N	SP4N	LSPS4	CN0605	KHA0808	HW30L
KM50-PDNNN-C15-3	50	-	50	N	DN□□1504□□	LV4BN	VHX0821N	SD43N	SP4N	LSPS4	CN0605	KHA0808	HW30L
KM63UT-PDNNN-D15	60	-	63	N	DN□□1506□□	LV4BN	VHX0821N	SD42N	SP4N	LSPS4	CN0605	KHA0808	HW30L
KM63UT-PDNNN-D15-3	60	-	63	N	DN□□1504□□	LV4BN	VHX0821N	SD43N	SP4N	LSPS4	CN0605	KHA0808	HW30L

Applicable inserts **B13 ~ B18**

MCHR/L

MGMN / MGMR/L
MGGN / MRMN





• R type holder

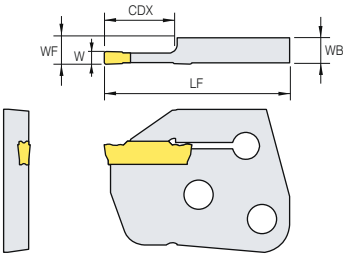
(mm)

Designation	WF	DCON-MS	LPR	HAND	Applicable insert	Applicable Cartridge	Clamp	Clamp Screw	Hinge Screw	Screw	Nozzle	Plug	Wrench
KM50-MCHR/L	35	50	74.5	R/L	MGMN MGMR/L MGGN MRMN	MCER/L3-T16 MCER/L4-T16	CHX8N	DHA0818F	RHA0613	FHGA0618	CN0605	-	HW40L
	35	50	78.5	R/L		MCER/L5-T20 MCER/L6-T20						-	
KM63UT-MCHR/L	43	63	74.5	R/L		MCER/L3-T16 MCER/L4-T16	CHX8N	DHA0818F	RHA0613	FHGA0618	CN0605	-	HW40L
	43	63	78.5	R/L		MCER/L5-T20 MCER/L6-T20						-	

Applicable inserts **C43 ~ C45**

MCER/L (Cartridge)

MGMN / MGMR/L
MGGN / MRMN



• R type holder

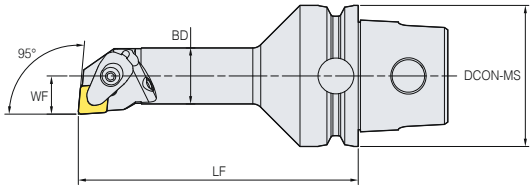
(mm)

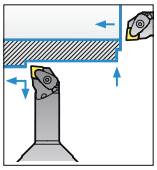
Designation		CDX	WB	LF	WF	HAND	Applicable insert		Tool holders
							W	Designation	
MCER/L	3-T16	16	6	44.5	6.35	R/L	3	MGMN MGMR/L MGGN MRMN	H-63T-MCHR/L
	4-T16	16	5.97	44.5	6.35	R/L	4		
	5-T20	20	5.87	48.5	6.35	R/L	5		
	6-T20	20	5.82	48.5	6.35	R/L	6		

Applicable inserts **C43 ~ C45**

KM○○-DCLNR/L

CN□□





95°

• R type holder

(mm)

Designation	LF	WF	BD	DCON-MS	HAND	Applicable insert	Clamp	Screw	Shim	Shim Screw	Spring	Nozzle	Plug	Wrench
KM50-A25K-DCLNR/L-12	125	17	32	50	R/L	CN□□1204□□	CVH4	CHX0518	SC42V	FTKA0410	SPR0714	CN0605	-	HW30P
KM50-A32L-DCLNR/L-12	140	22	40	50	R/L									
KM63UT-A25K-DCLNR/L-12	125	17	32	63	R/L									
KM63UT-A32L-DCLNR/L-12	140	22	40	63	R/L									

Applicable inserts **B5 ~ B11**

Blank Tool

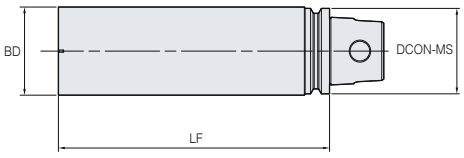


Fig. 1

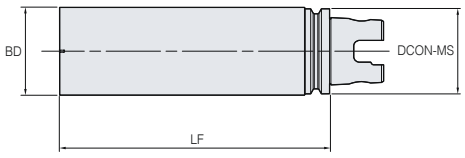


Fig. 2

(mm)

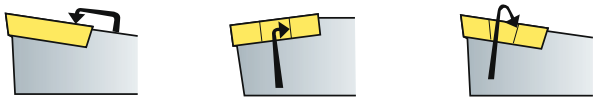
Designation	LF	BD	DCON-MS	Fig.
KM50-BL7562	62	45	50	1
KM50-BL10562	62	105	50	2
KM63UT-BL65200	200	65	63	1
KM63UT-BL115150	150	115	63	2

S T F C R 12 C A - 16

1	2	3	4	5	6	7	8	9
Clamping system	Insert Shape	Holder Style	Relief Angle of Insert	Hand	Height of Cutting Edge	Cartridge Code	Type of Cartridge	Length of Cutting Edge

1 Clamping system

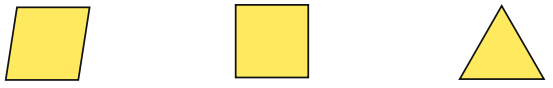
S T F C R 12 C A - 16



Top Clamping	Hole Clamping	Screw on
C	P	S

2 Insert Shape

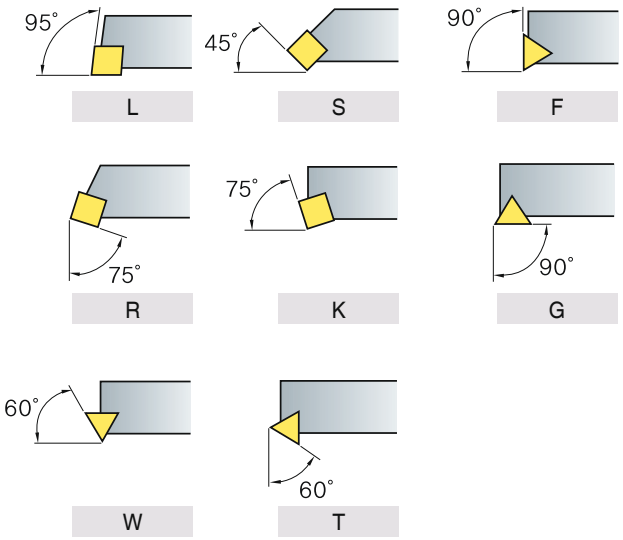
S T F C R 12 C A - 16



C	S	T

3 Holder Style

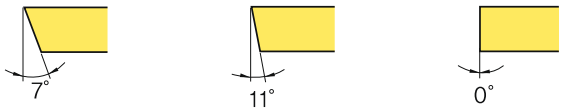
S T F C R 12 C A - 16



L	S	F	R	K	G	W	T

4 Relief Angle of Insert

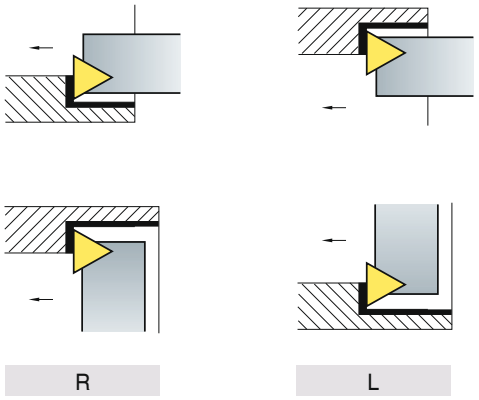
S T F C R 12 C A - 16



C	P	N

5 Hand

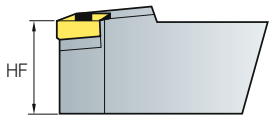
S T F C R 12 C A - 16



R	L

6 Height of Cutting Edge

S T F C R 12 C A - 16



7 Cartrige Code

S T F C R 12 C A - 16

C (Cartridge)

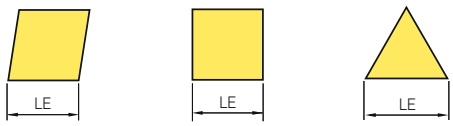
8 Type of Cartridge

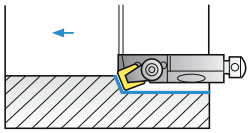
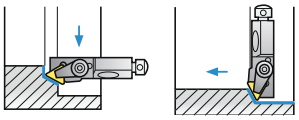
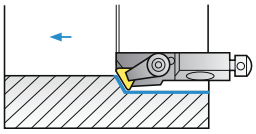
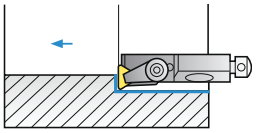
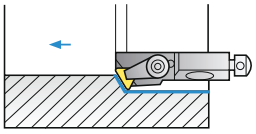
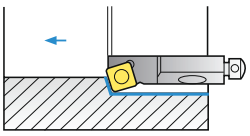
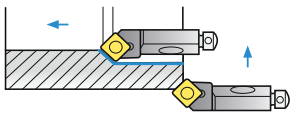
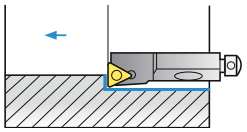
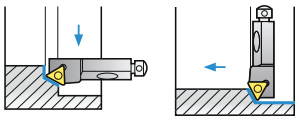
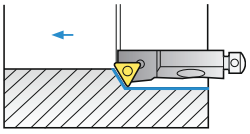
S T F C R 12 C A - 16

A (ISO5611)

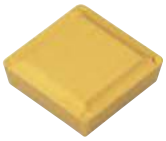
9 Length of Cutting Edge

S T F C R 12 C A - 16

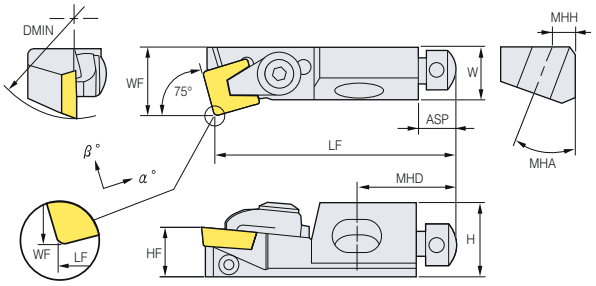


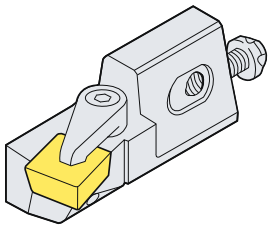
	Cutting Shape		Turning	Copying	Facing	Chamfering	Applicable inserts	Page
Clamp on System	**CSKPR/L**	 10CA–09 12CA–12	●				SP□R0903□□ SP□R1203□□	B232
	CTTPR/L	 10CA–11 12CA–16	●				TP□R1103□□ TP□R1603□□	B233
	CTWPR/L	 10CA–11 12CA–16	●				TP□R1103□□ TP□R1603□□	B234
	CTFPR/L	 10CA–11 12CA–16	●		●		TP□R1103□□ TP□R1603□□	B232
	CTSPR/L	 10CA–11 12CA–16	●				TP□R1103□□ TP□R1603□□	B233
Screw on System	**SSKCR/L**	 10CA–09 12CA–12	●				SC□T09T3□□ SC□T1204□□	B234
	SSSCR/L	 10CA–09 12CA–12	●			●	SC□T09T3□□ SC□T1204□□	B235
	STFCR/L	 10CA–11 12CA–16	●		●		TC□T1102□□ TC□T16T3□□	B235
	STTCR/L	 10CA–11 12CA–16	●		●		TC□T1102□□ TC□T16T3□□	B236
	STWCR/L	 10CA–11 12CA–16	●				TC□T1102□□ TC□T16T3□□	B236

CSKPR/L



SP□R





• R type holder

(mm)

Designation		Stock R	Stock L	DMIN	H	W	LF	WF	HF	ASP	α°	β°	MHD	MHH	MHA	Applicable insert
CSKPR/L	10CA-09			40	15	11	50	14	10	8	6	0	20	5	20	SP□R0903□□
	12CA-12	●		50	20	15	55	20	12	8	6	0	20	6	20	SP□R1203□□

Applicable inserts **B56 ~ B57**

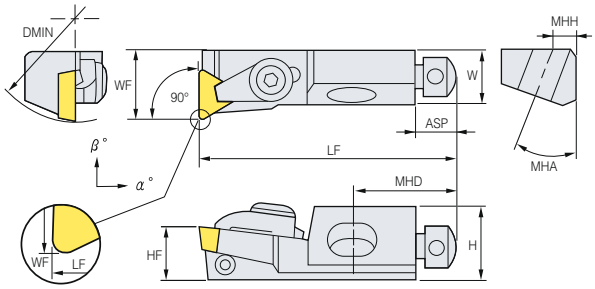
• a base Insert : r = 0.4 (l =11) r = 0.8 (l = 16) Dmin = ØD Min. machining Dia

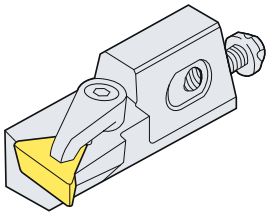
● : Stock item

Parts		Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
CSKPR/L	10CA-09	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	TW 15P	HW20L
	12CA-12	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	TW 15P	HW20L

CTFPR/L

TP□R





• R type holder

(mm)

Designation		Stock R	Stock L	DMIN	H	W	LF	WF	HF	ASP	α°	β°	MHD	MHH	MHA	Applicable insert
CTFPR/L	10CA-11	●		40	15	11	50	14	10	8	6	0	20	5	20	TP□R1103□□
	12CA-16			50	20	15	55	20	12	8	6	0	20	6	20	TP□R1603□□

Applicable inserts **B62 ~ B63**

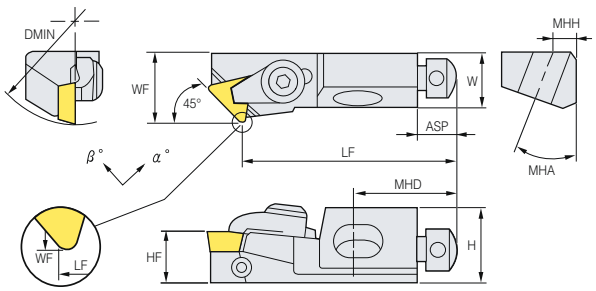
• a base Insert : r = 0.8 Dmin = ØD Min. machining Dia.

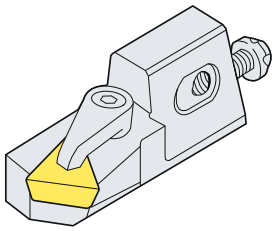
● : Stock item

Parts		Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
CTFPR/L	10CA-11	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	TW25L	HW20L
	12CA-16	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	TW30L	HW20L

CTSPR/L

TP□R





• R type holder

(mm)

Designation		Stock R	Stock L	DMIN	H	W	LF	WF	HF	ASP	α°	β°	MHD	MHH	MHA	Applicable insert
CTSPR/L	10CA-11	●		40	15	11	44	14	10	8	4	0	20	5	20	TP□R1103□□
	12CA-16			50	20	15	47	20	12	8	5	0	20	6	20	TP□R1603□□

Applicable inserts **B62 ~ B63**

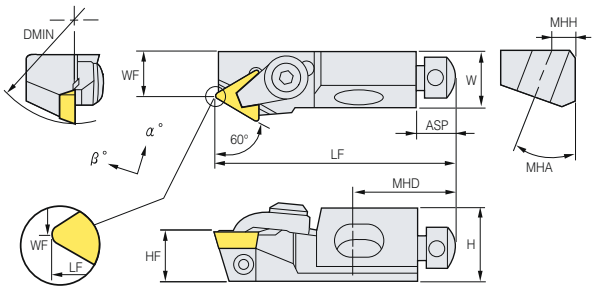
• a base Insert : r = 0.4 (l =11) r = 0.8 (l = 16) Dmin = ØD Min. machining Dia.

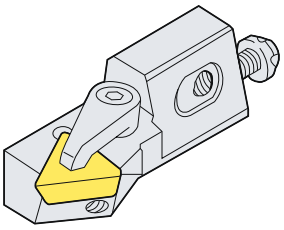
● : Stock item

Parts		Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
CTSPR/L	10CA-11	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	TW25L	HW20L
	12CA-16	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	TW30L	HW20L

CTTPR/L

TP□R





• R type holder

(mm)

Designation		Stock R	Stock L	DMIN	H	W	LF	WF	HF	ASP	α°	β°	MHD	MHH	MHA	Applicable insert
CTTPR/L	10CA-11			40	15	11	50	9	10	8	5	0	20	5	20	TP□R1103□□
	12CA-16			50	20	15	55	20	12	8	5	0	20	6	20	TP□R1603□□

Applicable inserts **B62 ~ B63**

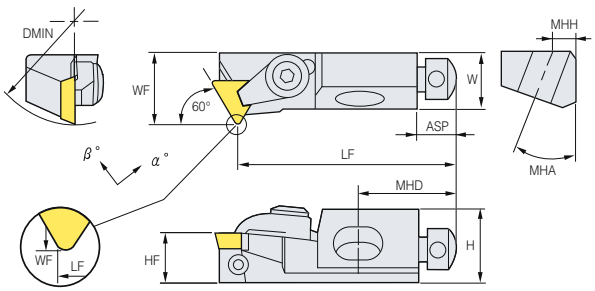
• a base Insert : r = 0.8 Dmin = ØD Min. machining Dia.

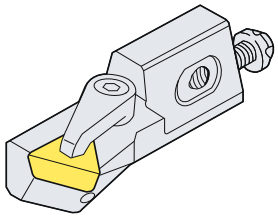
● : Stock item

Parts		Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
CTTPR/L	10CA-11	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	TW25L	HW20L
	12CA-16	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	TW30L	HW20L

CTWPR/L

TP□R





• R type holder

(mm)

Designation		Stock R	Stock L	DMIN	H	W	LF	WF	HF	ASP	α°	β°	MHD	MHH	MHA	Applicable insert
CTWPR/L	10CA-11			40	15	11	44	14	10	8	5	0	20	5	20	TP□R1103□□
	12CA-16			50	20	15	47	20	12	8	5	0	20	6	20	TP□R1603□□

Applicable inserts **B62 ~ B63**

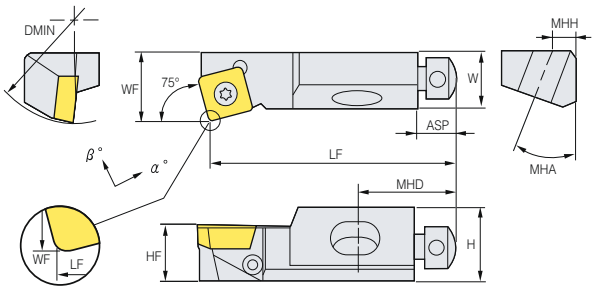
• a base Insert : r = 0.8 Dmin = ØD Min. machining Dia.

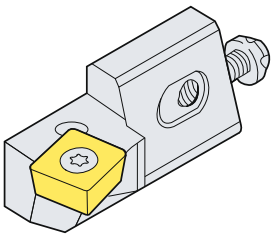
● : Stock item

Parts		Clamp	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
CTWPR/L	10CA-11	CA05R	AZ0508F	KHA0408	RHA0620	WA0602	TW25L	HW20L
	12CA-16	CA06R	AZ0508F	KHA0412	RHA0625	WA0602	TW30L	HW20L

SSKCR/L

SC□T





• R type holder

(mm)

Designation		Stock R	Stock L	DMIN	H	W	LF	WF	HF	ASP	α°	β°	MHD	MHH	MHA	Applicable insert
SSKCR/L	10CA-09			40	15	11	50	14	10	8	0	-4	20	5	20	SC□T09T3□□
	12CA-12			50	20	15	55	20	12	8	0	-4	20	6	20	SC□T1204□□

Applicable inserts **B55**

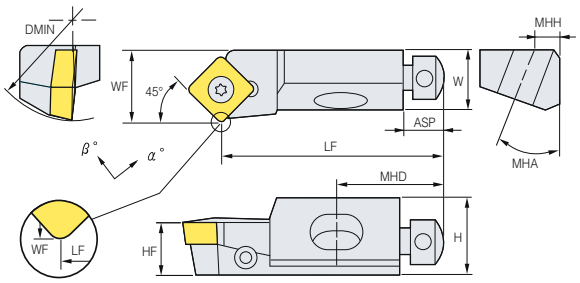
• a base Insert : r = 0.8 Dmin = ØD Min. machining Dia.

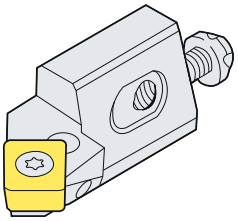
● : Stock item

Parts		Screw	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
SSKCR/L	10CA-09	FTGA03508	AZ0508F	KHA0408	RHA0620	WA0602	TW 15P	HW20L
	12CA-12	FTGA0411F	AZ0508F	KHA0412	RHA0625	WA0602	TW 15P	HW20L

SSSCR/L

SC□T





• R type holder

(mm)

Designation		Stock R	Stock L	DMIN	H	W	LF	WF	HF	ASP	α°	β°	MHD	MHH	MHA	Applicable insert
SSSCR/L	10CA-09			40	15	11	44	14	10	8	-5	0	20	5	20	SC□T09T3□□
	12CA-12			50	20	15	47	20	12	8	-5	0	20	6	20	SC□T1204□□

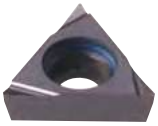
Applicable inserts **B55**

• a base Insert : r = 0.8 Dmin = ØD Min. machining Dia.

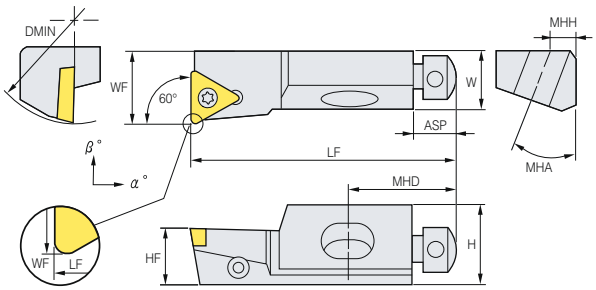
● : Stock item

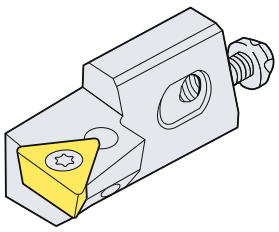
Parts		Screw	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
SSSCR/L	10CA-09	FTGA03508	AZ0508F	KHA0408	RHA0620	WA0602	TW 15P	HW20L
	12CA-12	FTGA0411F	AZ0508F	KHA0412	RHA0625	WA0602	TW 15P	HW20L

STFCR/L



TC□T





• R type holder

(mm)

Designation		Stock R	Stock L	DMIN	H	W	LF	WF	HF	ASP	α°	β°	MHD	MHH	MHA	Applicable insert
STFCR/L	10CA-11	●		40	15	11	50	14	10	8	0	-3	20	5	20	TC□T1102□□
	12CA-16	●		50	20	15	55	20	12	8	0	-3	20	6	20	TC□T16T3□□

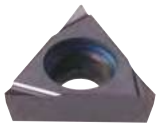
Applicable inserts **B59 ~ B60**

• a base Insert : r = 0.4 (l =11) r = 0.8 (l = 16) Dmin = Min. machining Dia.

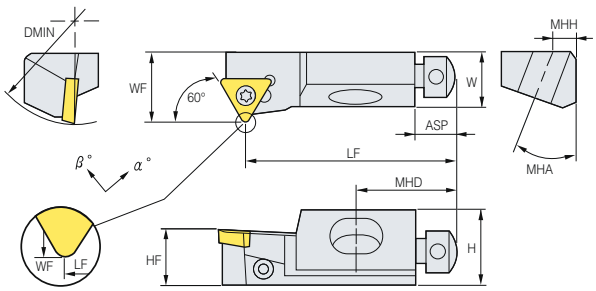
● : Stock item

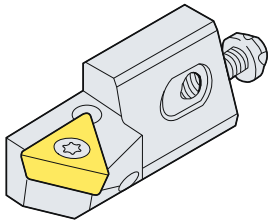
Parts		Screw	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
STFCR/L	10CA-11	FTKA02565	AZ0508F	KHA0408	RHA0620	WA0602	TW 15P	HW20L
	12CA-16	FTKA03508	AZ0508F	KHA0412	RHA0625	WA0602	TW 15P	HW20L

STTCR/L



TC□T





• R type holder

(mm)

Designation		Stock R	Stock L	DMIN	H	W	LF	WF	HF	ASP	α°	β°	MHD	MHH	MHA	Applicable insert
STTCR/L	10CA-11			40	15	11	50	9	10	8	-5	0	20	5	20	TC□T1102□□
	12CA-16			50	20	15	47	20	12	8	-3	0	20	6	20	TC□T16T3□□

Applicable inserts **B59 ~ B60**

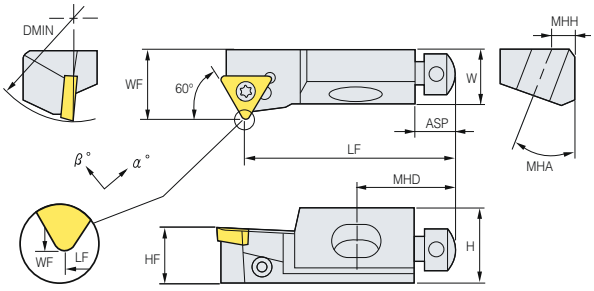
• a base Insert : r = 0.4 (l =11) r = 0.8 (l = 16) Dmin = Min. machining Dia..

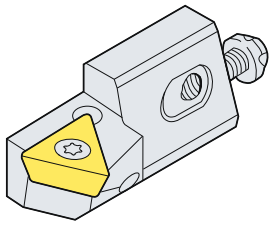
● : Stock item

Parts		Screw	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
STTCR/L	10CA-11	FTKA02565	AZ0508F	KHA0408	RHA0620	WA0602	TW 07P	HW20L
	12CA-16	FTKA03508	AZ0508F	KHA0412	RHA0625	WA0602	TW 15P	HW20L

STWCR/L

TC□T





• R type holder

(mm)

Designation		Stock R	Stock L	DMIN	H	W	LF	WF	HF	ASP	α°	β°	MHD	MHH	MHA	Applicable insert
STWCR/L	10CA-11			40	15	11	44	14	10	8	0	-4	20	5	20	SC□T09T3□□
	12CA-16			50	20	15	47	20	12	8	-5	0	20	6	20	SC□T1204□□

Applicable inserts **B55**

• a base Insert : r = 0.4 (l =11) r = 0.8 (l = 16) Dmin = Min. machining Dia.

● : Stock item

Parts		Screw	Axial Adjust Screw	Radial Adjust Screw	Mounting Screw	Washer	Wrench	Wrench
STWCR/L	10CA-11	FTKA02565	AZ0508F	KHA0408	RHA0620	WA0602	TW 15P	HW20L
	12CA-16	FTKA03508	AZ0508F	KHA0412	RHA0625	WA0602	TW 15P	HW20L

PART C

MULTI FUNCTIONAL TOOLS

Korloy Multi-functional tools can be used for machining in grooving, parting-off, facing and forming applications. Its design ensures superior machinability and productivity.

Technical information for MULTI FUNCTIONAL TOOLS

Application Example
C2 Application Example

Saw Man–X
C4 Technical Information for Saw Man-X
C6 Saw Man-X

Saw Man
C9 Technical Information for Saw Man
C10 Saw Man

Fine Tools
C13 Technical Information for Fine Tools
C14 Fine Tools

K-Notch
C16 Technical Information for K-Notch
C18 K-Notch

KGT
C21 Technical Information for KGT
C28 KGT
C40 KGT Parting off Blades

MGT Plus / MGT
C41 Technical Information for MGT Plus / MGT
C47 MGT Plus / MGT

KGT/MGT Cartridges
C56 Technical Information for KGT/MGT Cartridges
C57 KGT/MGT Cartridges

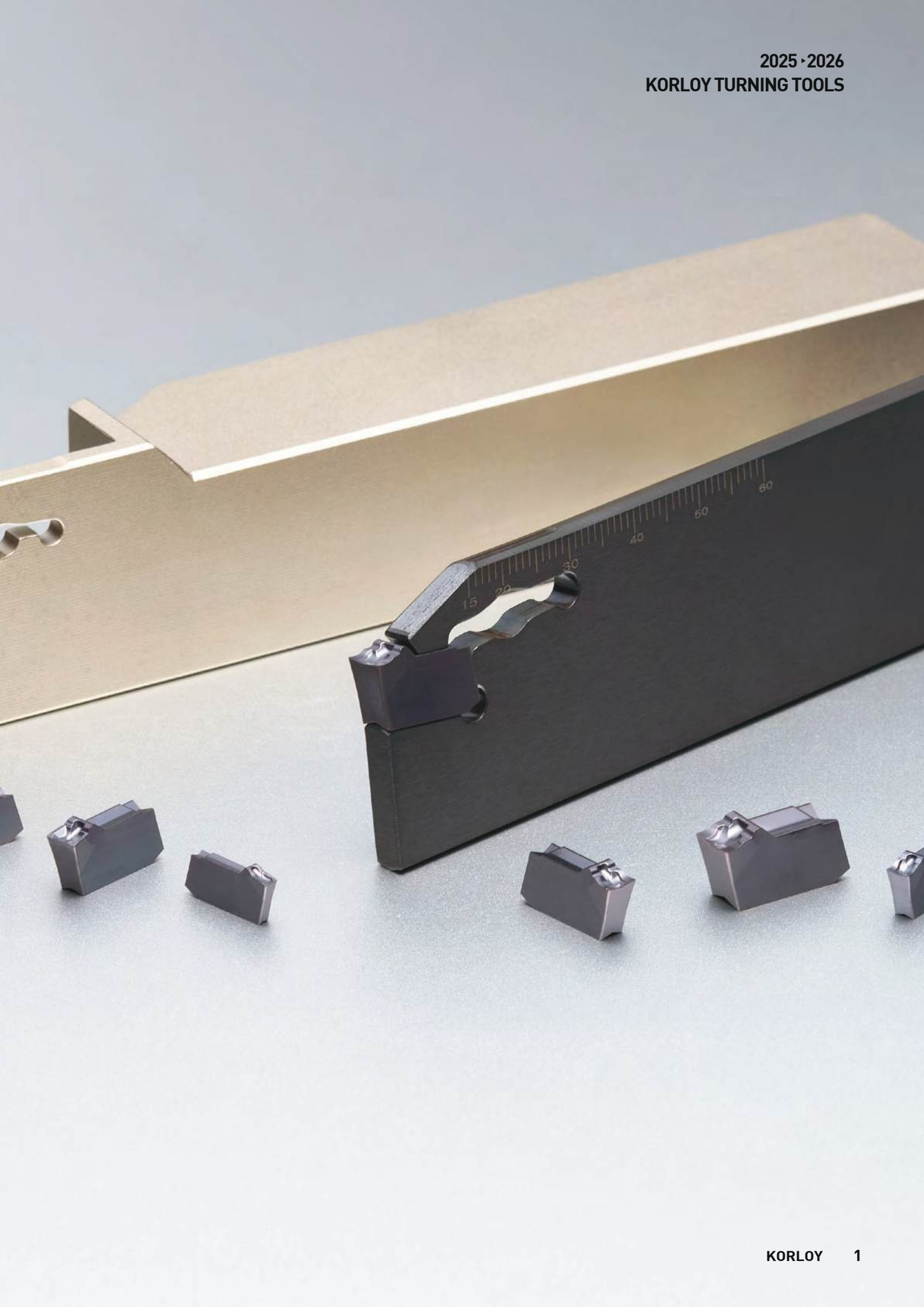
MGT for Aluminum Wheel
C60 Technical Information for MGT Aluminum Wheel
C61 MGT for Aluminum Wheel

TB/TB-M
C64 Technical Information for TB/TB-M
C68 TB/TB-M

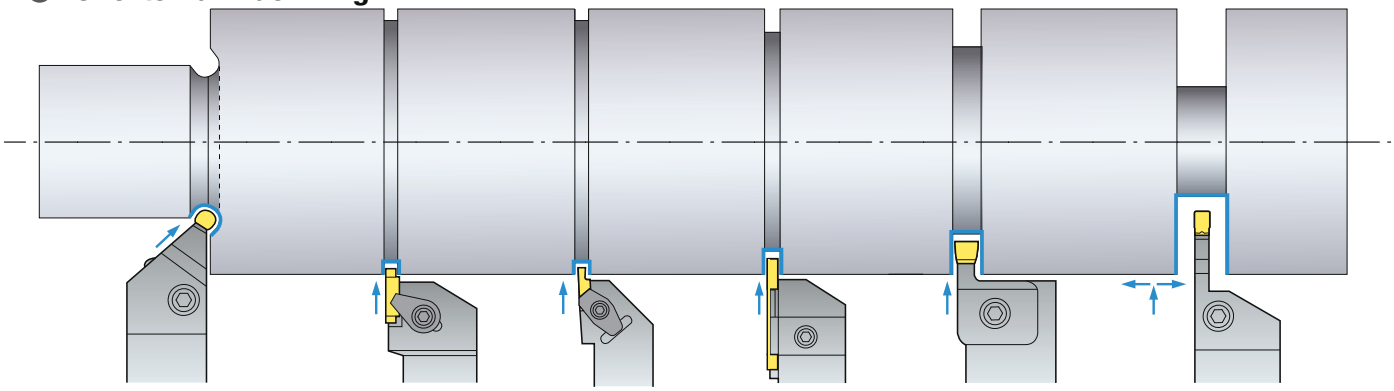
Hexa Blade
C72 Technical Information for Hexa Blade
C74 Hexa Blade

Grooving Tools
C75 FGHH
C76 FGVH
C77 IGH
C78 DBH
C79 GFIP

Special Order Form
C80 Special Order Form for MGT
C81 Special Order Form for V-Pulley Inserts

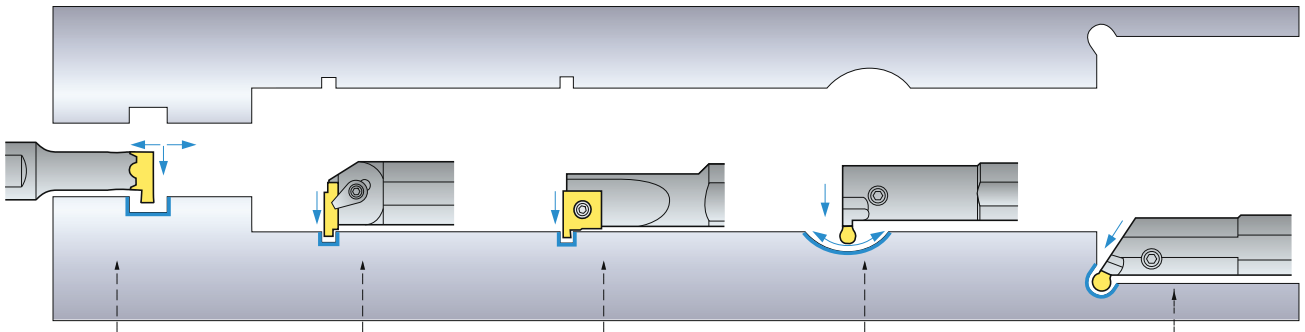


For external machining



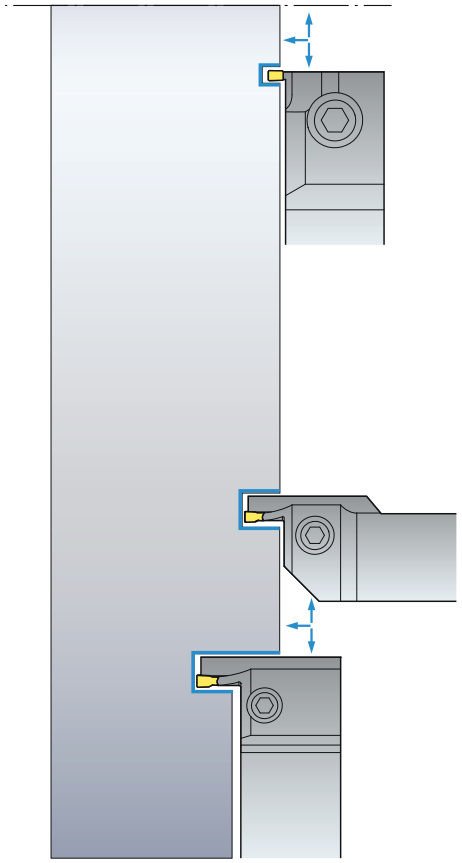
KGEUR/L	MGEUR/L	TBH	KNSR	HBH	DBH	KGEHR/L	MGEHR/L
Width:2~8 CDX: 2.8~3.3	Width:2~8 CDX: 3~5	Width:0.5~4.5 CDX:1~6.5	Width:0.79~6.35 CDX:0~6.5	Width:1.78~4 CDX:2~5	Width:3~8 CDX:14	Width:1.5~8 CDX: 8~36	Width:1.5~8 CDX:10~28
KRMN KRGN	PRMN MRMN MRGN	TB TB-M	KNG KNGP KNR KNRP KNB	HB	DC DB	KGGN KGMN KGMR/L KRGN KRMN	PGMN PRMN MGGN MGMN MGMR MRGN MRMN

For internal machining

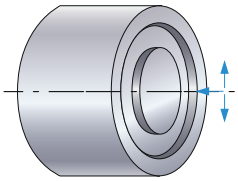


NFTIH	GFIP	IGH	KGIVR/L	MGIVR/L	KGIUR/L	MGIUR/L
Width:0.75~4.02 CDX:1.3~4.6	Width:1.1~8 CDX:2.1~9	Width:1.25~2.8 CDX:1.5~2.3	Width:1.5~8 CDX:4~8.5	Width:1.5~8 CDX:4~10	Width:3~8 CDX:3.5~8.5	Width:3~8 CDX:3.5~6.5
NFTG NFTF NFTT	GW BF	IG	KGMI KGMN KRMN KGGN	PGMN PRMN MRMN MGGN MRGN	KRMN KRGN	PRMN MRMN

For face grooving

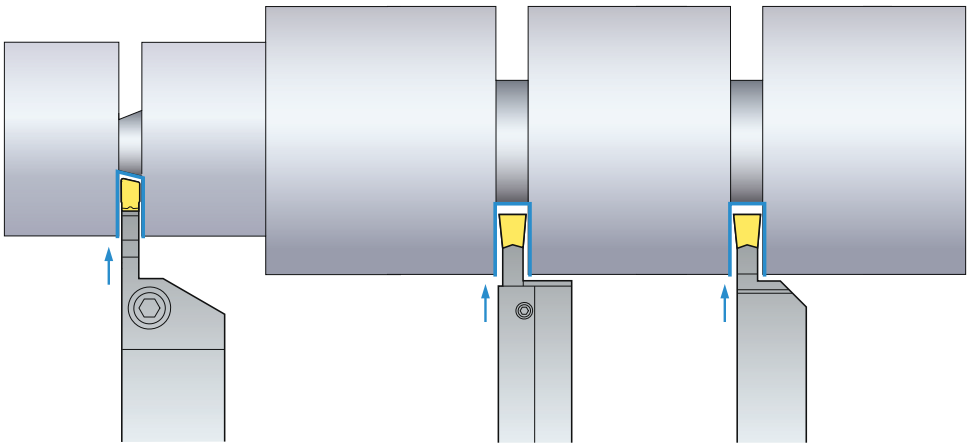


KGEVR/L	MGEVR/L	MGEVR/L
Width:1.5~8 CDX:3~8	Width:1.5~8 CDX:3~9	Width:1.5~8 CDX:3~9
KGMN	PGMN	MGMN
KGGN	PRMN	MGGN
KRMN		MRMN
KRGN		MRGN



FGHH/FGVH	MGFHR/L, MGFVR/L	KGFHR/L, KGFVR/L
Width:3~5 CDX:12~25	Width:3~4 CDX:10~15	Width:3~6 CDX:10~25
FGD	PGMN	KGMN
FGM	PRMN	KRMN
FMM	MGMN	KGGN
	MFMN	KRGN

For parting off



KGEHR/L	MGEHR/L	KSPB	SPB-(S)	KGTB
Width:1.5~8 CDX: 8~36	Width:1.5~8 CDX:10~28	Width:2~6 CUTDIA :120	Width :2~6 CUTDIA:120	Width:1.5~8 CUTDIA:26~120
KGMR/L	MGMR/L	KSP	SP	KGMN
				KGGN-S-R

A solution for Parting and deep Grooving

Saw Man-X

- Stability in machining when deep grooving by applying strong three-way V-Rail clamping system
- Improved clamping precision and convenience replacing "of" and "with" using the exclusive wrench

Code system

• Insert (Basic)

KSP	300	-	020	-	N
KORLOY Saw Man-X Parting	**Cutting width** 200 : 2mm 300 : 3mm 400 : 4mm		**Nose r** 020 : 0.2mm 030 : 0.3mm		**Chip breaker** N : Steel, Cast iron S : Stainless steel, Heat resistant alloy

•Insert (Lead angle type)

KSP	300	R	-	6D	-	N
KORLOY Saw Man-X Parting	**Cutting width** 200 : 2mm 300 : 3mm 400 : 4mm	**Hand** R : Right-handed L : Left-handed		**Lead angle** 4D : 4° 6D : 6°		**Chip breaker** N : Steel, Cast iron S : Stainless steel, Heat resistant alloy

• Shank

KSPH	3	25	R
KORLOY Saw Man-X Parting Holder	**Cutting edge width** 2 : 2mm 3 : 3mm 4 : 4mm	**Shank size** 16 : 1616 20 : 2020 25 : 2525	**Hand** R : Right-handed L : Left-handed

• Blade

KSPB	30	26	-	(KHP)
KORLOY Saw Man-X Parting Blade	**Cutting edge width** 20 : 2mm 30 : 3mm 40 : 4mm	**Blade height** 26 : 26mm 32 : 32mm		**Oil hole** None : Without oil hole KHP : High pressure coolant

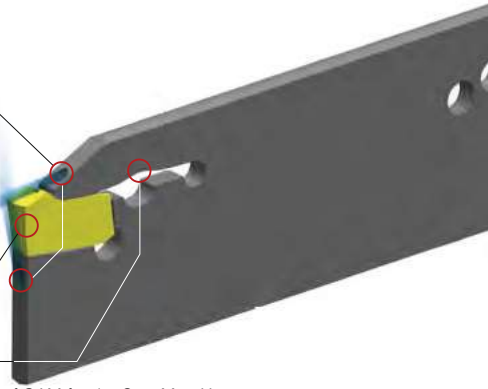
Features

- Three-way V-Rail - More stable clamping system
- Superior chip breaker - Better chip control
- Exclusive wrench - More convenient clamping system
- 2 channel spraying through high pressure coolant
  - More efficient cooling

2-channel High-pressure Internal Coolant Spraying

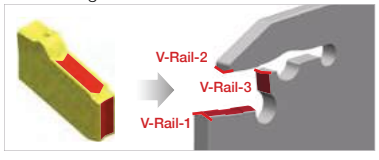
- Enhances cooling efficiency through direct coolant spraying to the cutting edge
- Longer tool life in HRSA cutting

(*Exclusive blades and blocks are required for high-pressure coolant)



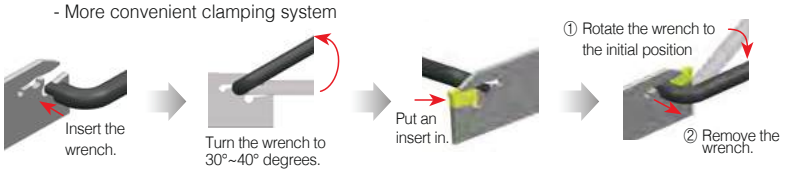
Three-way V-Rail

- Tightly clapmed insert in the tip seat
- Increased stability by minimized vibration during the machining
- Available for stable high speed, high feed and high depth of cut machining

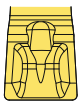
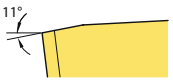
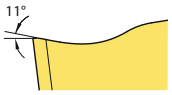
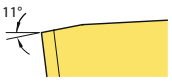


Exclusive wrench

- The exclusive wrench having the principle of CAM for the Saw Man-X
- More convenient clamping system



Chip breaker features

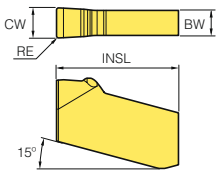
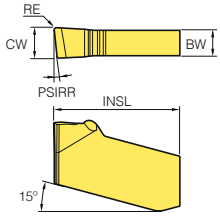
Type	Shape	Cutting edge	Features
N Chip breaker			• 1st recommended in steel and cast iron cutting • Negative land cutting edge • For interrupted and high feed cutting
S Chip breaker			• 1st recommended in Stainless steel and HRSA cutting • Sharp cutting edge • For high speed and continuous cutting
N Chip breaker (Lead angle type)			• Optimal for pipe and round bar cutting • Negative land cutting edge applying lead angle • Minimized burr and size of PIP

Cutting width and cutting depth by tools

◎: 1st recommendation ○: 2nd recommendation

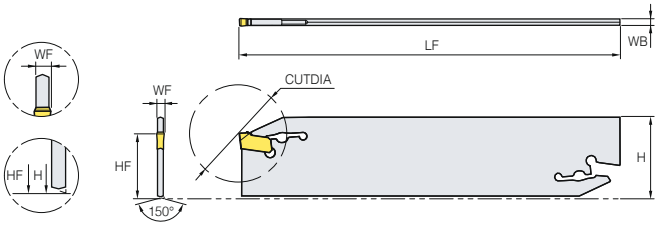
Inserts		Cutting width (mm) 2 4 6 8 / Cutting depth maximum (mm) 5 10 20 60	No. of edges	Machining External	Machining Internal	Machining Facing	Machining Parting	Features
Saw Man-X		2.0 – 6.0 / 60.0	1	○			◎	• Various lead angles • Minimizing burr
Hexa Blade		1.78 – 4.0 / 5.0	6	◎			○	• Precision type • High cost efficient cutting
TB		1.25 – 6.0 / 6.5	3	◎			○	• Precision type • Optimal for automated machining
KGT		1.5 – 8.0 / 28.0	2	◎	○	○	◎	• For various kinds of cutting • For general cutting range
K Notch		0.75 – 6.3 / 6.5	2	◎				• Precision type • Strong clamping system

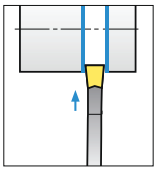
Applicable insert

Picture	Designation		Coated PC3035	Coated PC5300	Coated PC8110	Dimensions (mm) SSC	CW	PSIRL	PSIRR	RE	BW	INSL	HAND	Configuration
	KSP	200-020-N	●	●	●	20	2	-	-	0.2	1.6	11.1	N	
		300-020-N	●	●	●	30	3	-	-	0.2	2.5	12.1	N	
		400-025-N	●	●	●	40	4	-	-	0.25	3.3	12.6	N	
		500-025-N	●	●		50	5	-	-	0.25	4.3	13.5	N	
		600-035-N	●	●		60	6	-	-	0.35	5.3	14.5	N	
	KSP	200-020-S		●	●	20	2	-	-	0.2	1.6	11.1	N	
		300-020-S		●	●	30	3	-	-	0.2	2.5	12.1	N	
		400-025-S		●	●	40	4	-	-	0.25	3.3	12.6	N	
		500-025-S		●	●	50	5	-	-	0.25	4.3	13.5	N	
		600-035-S		●		60	6	-	-	0.3	5.3	14.5	N	
	KSP	200R-6D-N	●	●	●	20	2	-	6	0.2	1.6	11.18	R	
		200L-6D-N				20	2	6	-	0.2	1.6	11.18	L	
		300R-6D-N	●	●	●	30	3	-	6	0.2	2.5	12.1	R	
		300L-6D-N				30	3	6	-	0.2	2.5	12.1	L	
		400R-4D-N	●	●	●	40	4	-	4	0.25	3.3	12.68	R	
		400L-4D-N				40	4	4	-	0.25	3.3	12.68	L	

KSPB (Blade)

KSP





(mm)

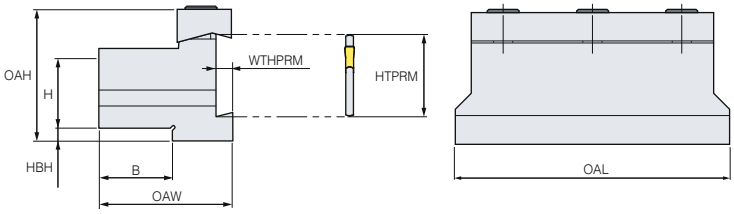
Designation		Stock	Cutting width (CW)	CUTDIA	H	WF	WB	HF	LF	HAND	Wrench
KSPB	2026	●	2	50	26	1.8	1.6	21.61	110.7	N	CW08
	2032	●	2	52	32	1.8	1.6	25.32	150.7	N	
	3026	●	3	72	26	2.7	2.4	21.71	110.7	N	
	3032	●	3	120	32	2.7	2.4	25.42	150.7	N	
	4026	●	4	72	26	3.6	3.2	21.82	110.9	N	
	4032	●	4	120	32	3.6	3.2	25.53	150.9	N	
	5026		5	80	26	4.5	4	21.92	111	N	CW10
	5032	●	5	120	32	4.5	4	25.63	151	N	
	6026		6	120	26	5.6	5.2	22.08	111	N	
	6032	●	6	120	32	5.6	5.2	25.79	151	N	

Applicable inserts **C5**

● : Stock item

SMBB (Block)

KSPB□□□□
SPB□□□(-S)
KGTB□□□□(S)



(mm)

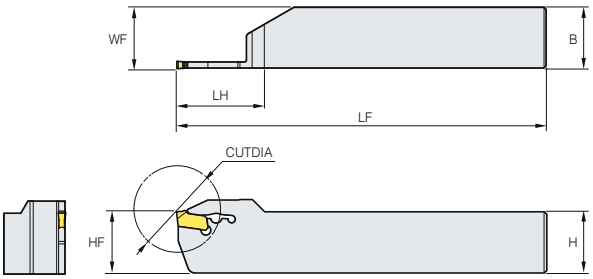
Designation		Stock	H	B	HTPRM	OAL	OAH	HBH	OAW	WTHPRM	Screw	Wrench
SMBB	1626	●	16	12	26	86	43	13	30	5.3	BHA0620	HW50L
	2026	●	20	19	26	86	43	9	38	5.3		
	2032	●	20	19	32	86	50	13	38	5.3		
	2526	●	25	23	26	86	43	4	42	5.3		
	2532	●	25	23	32	110	50	8	42	5.3		
	3232	●	32	30	32	110	54	5	48	5.3		

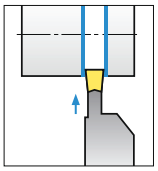
Applicable inserts **C5**

● : Stock item

KSPH (Shank-Self grip)

KSP





• R type holder

(mm)

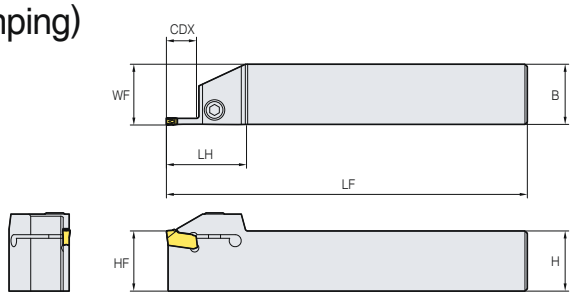
Designation		Stock R	Stock L	Cutting width (CW)	CUTDIA	LH	LF	WF	HF	B	H	HAND	Wrench
KSPH	216R/L			2	46	31	100	16.2	16	16	16	R/L	CW08
	220R/L			2	48	32	120	20.2	20	20	20	R/L	
	225R/L	●		2	50	33.25	150	25.2	25	25	25	R/L	
	316R/L			3	52	34	100	16.24	16	16	16	R/L	
	320R/L	●		3	54	35	120	20.24	20	20	20	R/L	
	325R/L	●		3	56	36	150	25.24	25	25	25	R/L	
	420R/L	●		4	64	40	120	20.4	20	20	20	R/L	
	425R/L	●		4	66	41	150	25.4	25	25	25	R/L	
	520R/L			5	74	45	120	20.35	20	20	20	R/L	CW10
	525R/L	●		5	76	46	150	25.35	25	25	25	R/L	
	625R/L	●		6	76	46	150	25.4	25	25	25	R/L	

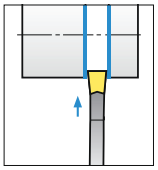
Applicable inserts **C5**

● : Stock item

KSEHR/L (Shank-Screw clamping)

KSP





• R type holder

(mm)

Designation		Stock R	Stock L	Cutting width (CW)	H=(HF)	LH	LF	WF	CDX	B	Screw	Wrench
KSEHR/L	2020-2-T12			2	20	28	125	20.2	12	20	MHA0512	HW40L
	2525-2-T12	●		2	25	28	150	25.2	12	25		
	2020-2-T20			2	20	36	125	20.2	20	20		
	2525-2-T20	●		2	25	36	150	25.2	20	25		
	2020-3-T12			3	20	28	125	20.25	12	20		
	2525-3-T12	●		3	25	28	150	25.25	12	25		
	2020-3-T25			3	20	41	125	20.25	25	20		
	2525-3-T25	●		3	25	41	150	25.25	25	25		
	2020-4-T15			4	20	36	125	20.4	15	20	BHA0616	HW50L
	2525-4-T15	●		4	25	36	150	25.4	15	25		
	2020-4-T25			4	20	41	125	20.4	25	20		
	2525-4-T25	●		4	25	41	150	25.4	25	25		
	2525-5-T25			5	25	41	150	25.5	25	25		
	2525-6-T25			6	25	41	150	25.5	25	25		

Applicable inserts **C5**

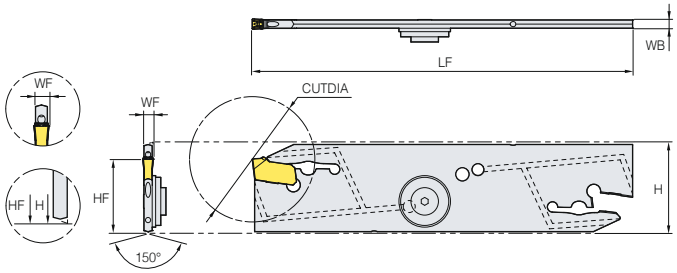
● : Stock item

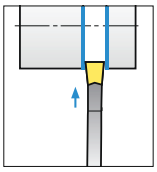
KSPB-KHP (Blade)

High pressure coolant

Recommended pressure: 70 bar

KSP





(mm)

Designation		Stock	Cutting width (CW)	CUTDIA	H	WF	WB	LF	HF	HAND	Wrench	Copper washer	Sealing plate	Sealing screw
KSPB	3026-KHP	●	3	72	26	2.75	2.5	110	21	N	CW08	HPW1/8PF	FWASMH-D15-V4.5-T1.5	CBSA4-5
	4026-KHP	●	4	72	26	3.7	3.4	110	21	N				

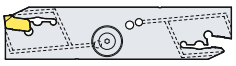
Applicable inserts **C5**

● : Stock item

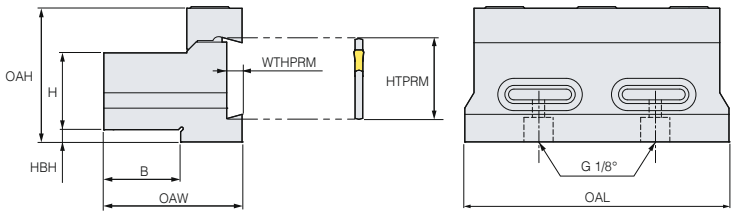
SMBB-KHP (Block)

High pressure coolant

Recommended pressure: 70 bar



KSPB□□□□-KHP



(mm)

Designation		Stock	H	B	HTPRM	OAL	OAH	HBH	OAW	WTHPRM	Screw	Wrench	O-ring
SMBB	2026-KHP	●	20	20	26	86	43.5	9	38	5	BHA0812	HW60L	NPA14
	2526-KHP	●	25	25	26	86	43.5	4	45	5			

Applicable inserts **C5**

● : Stock item

For deep hole grooving/parting off

Saw Man

- Possible to machine a wide range of workpieces such as steel, cast iron, stainless steel, etc.
- Extended tool life due to low resistance rake angle
- Minimized burr due to minimal Nose R
- Various lead angle available
- Narrow chip curl due to dots on rake surface of insert

Code system

• Insert

SP	300	R
Saw Man Parting	**Cutting width** 200 : 2mm 300 : 3mm 400 : 4mm	**Hand** R : Right handed L : Left handed

• Shank

SPH	3	25	R
Saw Man Parting Holder	**Cutting edge width** 2 : 2mm 3 : 3mm 4 : 4mm	**Shank size** 16 : 16 20 : 20 25 : 25	**Hand** R : Right-handed L : Left-handed

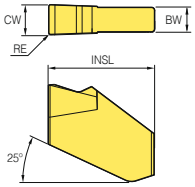
• Blade

SPB	3	26	(S)
Saw Man Parting Blade	**Cutting edge width** 2 : 2mm 3 : 3mm 4 : 4mm	**Shank size** 26 : 26mm 32 : 32mm	**Stopper type**

Recommended cutting conditions

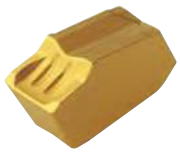
Workpiece	Cutting Speed (vc = m/min)						Feed (fn = mm/rev)				
	CVD			PVD		Uncoated	Cutting width (mm)				
	NC3120	NC3030	NC5330	PC8110	PC5300	ST30A	2	3	4	5	6
SM□□C	80~180		80~180		80~180		0.02~0.15	0.03~0.20	0.08~0.30	0.10~0.4	0.12~0.50
SCM	70~150	70~150	70~150		70~150		0.02~0.15	0.03~0.20	0.08~0.30	0.10~0.4	0.12~0.50
GC/GCD			50~100			50~100	0.05~0.12	0.10~0.25	0.10~0.30	0.10~0.35	0.10~0.40
STS			50~120	50~120	60~140		0.02~0.10	0.03~0.15	0.08~0.25	0.10~0.35	0.12~0.40
Non-ferrous metal (Al, Copper)						200~450	0.05~0.10	0.05~0.20	0.05~0.25	0.05~0.30	0.05~0.35

Applicable insert

Application	Picture	Designation	Coated									Uncoated	Dimensions (mm)						Configuration
			NC3120	NC3225	NC3030	NCM325	NC5330	PC3035	PC8105	PC8110	PC5300	PC9030	ST30A	SSC	CW	RE	BW	INSL	HAND	
Parting tools		SP 160												16	1.6	0.16	1.3	7.5	N	
		180												18	1.8	0.16	1.4	9	N	
		200		●			●			●	●	●		20	2.2	0.2	1.75	9	N	
		200R			●							●		20	2.2	0.2	1.75	9	R	
		200L										●		20	2.2	0.2	1.75	9	L	
		300	●	●	●		●			●	●	●	●	30	3.1	0.2	2.55	10.8	N	
		300R		●	●					●	●			30	3.1	0.2	2.55	10.8	R	
		300L			●									30	3.1	0.2	2.55	10.8	L	
		400	●	●	●		●			●	●	●		40	4.1	0.25	3.45	10.8	N	
		400R			●					●				40	4.1	0.25	3.45	10.8	R	
		400L			●									40	4.1	0.25	3.45	10.8	L	
		500			●		●			●	●			50	5.1	0.3	4.35	11	N	
		500R												50	5.1	0.3	4.35	11	R	
		500L												50	5.1	0.3	4.35	11	L	
		600			●		●				●			60	6.4	0.35	5.55	11	N	
		600R												60	6.4	0.35	5.55	11	R	
		600L												60	6.4	0.35	5.55	11	L	
		800												80	8	0.4	7.2	13.5	N	
		900												90	9.6	0.45	8.4	13.5	N	

● : Stock item

SPB/SPB-S (Blade)



SP

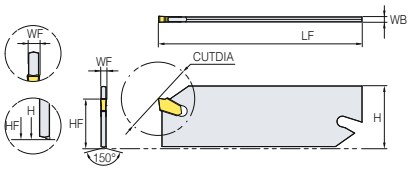


Fig. 1

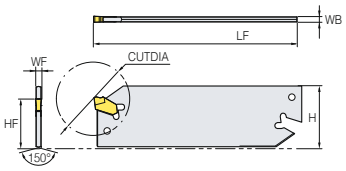
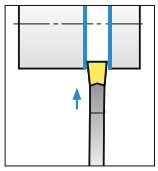


Fig. 2



(mm)

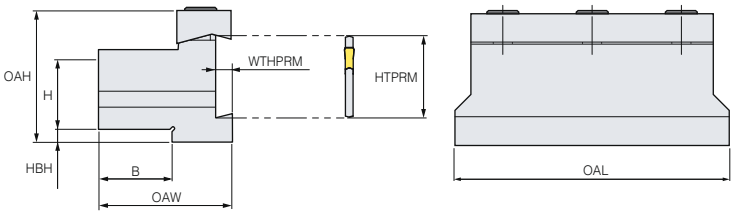
Designation		Stock	CUTDIA	H	WF	WB	HF	LF	HAND	Applicable inserts	Wrench		Fig.
SPB	226	●	50	26	1.9	1.6	21.61	111.8	N	SP200, 200R/L	SW50L	-	1
	232	●	52	32	1.9	1.6	25.32	151.8	N	SP200, 200R/L			
	326	●	72	26	2.75	2.4	21.71	111.8	N	SP300, 300R/L			
	332	●	120	32	2.75	2.4	25.42	151.8	N	SP300, 300R/L			
	426	●	72	26	3.65	3.2	21.82	111.8	N	SP400, 400R/L			
	432	●	120	32	3.65	3.2	25.53	151.8	N	SP400, 400R/L			
	526	●	80	26	4.55	4	21.92	111.8	N	SP500, 500R/L			
	532	●	120	32	4.55	4	25.63	151.8	N	SP500, 500R/L			
	626		120	26	5.8	5.2	22.08	111.8	N	SP600, 600R/L			
	632	●	120	32	5.8	5.2	25.79	151.8	N	SP600, 600R/L			
SPB-S	226-S	●	50	26	1.9	1.6	21.61	111.5	N	SP200, 200R/L	-	SW15S (Separately ordered)	2
	232-S	●	52	32	1.9	1.6	25.32	151.5	N	SP200, 200R/L			
	326-S	●	72	26	2.75	2.4	21.71	111.5	N	SP300, 300R/L			
	332-S	●	120	32	2.75	2.4	25.42	151.5	N	SP300, 300R/L			
	426-S	●	72	26	3.65	3.2	21.82	111.5	N	SP400, 400R/L			
	432-S	●	120	32	3.65	3.2	25.53	151.5	N	SP400, 400R/L			
	526-S		80	26	4.55	4	21.92	111.5	N	SP500, 500R/L			
	532-S	●	120	32	4.55	4	25.63	151.5	N	SP500, 500R/L			
	626-S		120	26	5.8	5.2	22.08	111.5	N	SP600, 600R/L			
	632-S	●	120	32	5.8	5.2	25.79	151.5	N	SP600, 600R/L			
	832-S		120	32	7.4	6.8	26.82	151.5	N	SP800			
	932-S		120	32	8.8	8	27.14	151.5	N	SP900			
	8526-S		120	52.6	7.4	6.8	46.82	191.5	N	SP800			
	9526-S		120	52.6	8.8	8	47.14	191.5	N	SP900			

Applicable inserts **C10**

●: Stock item

SMBB (Block)

KSPB□□□□
SPB□□□(-S)
KGTB□□□□(S)



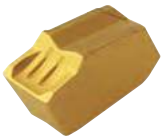
(mm)

Designation		Stock	H	B	HTPRM	OAL	OAH	HBH	OAW	WTHPRM	Screw	Wrench
SMBB	1626	●	16	12	26	86	43	13	30	5.3	BHA0620	HW50L
	2026	●	20	19	26	86	43	9	38	5.3		
	2032	●	20	19	32	86	50	13	38	5.3		
	2526	●	25	23	26	86	43	4	42	5.3		
	2532	●	25	23	32	110	50	8	42	5.3		
	3232	●	32	30	32	110	54	5	48	5.3		

Applicable inserts **C10**

●: Stock item

SPH/SPH-S (Holder)



SP

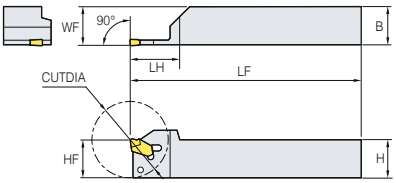


Fig. 1

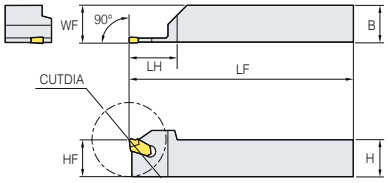
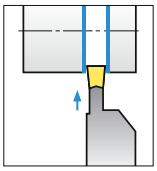


Fig. 2



• R type holder

(mm)

Designation		Stock R	Stock L	CUTDIA	LH	LF	WF	HF	B	H	HAND	Applicable inserts	Wrench		Fig.
SPH	316R/L			32	23.8	100	16.35	16	16	16	R	SP300, 300R/L			
	320R/L	●	●	40	26	120	20.35	20	20	20	R	SP300, 300R/L			
	325R/L	●		50	31	150	25.35	25	25	25	R	SP300, 300R/L			
	420R/L	●		50	31	120	20.45	20	20	20	R	SP400, 400R/L	SW50L	-	1
	425R/L	●	●	60	36	150	25.45	25	25	25	R	SP400, 400R/L			
	520R/L			60	36	120	20.55	20	20	20	R	SP500, 500R/L			
	525R/L	●		70	41	150	25.55	25	25	25	R	SP500, 500R/L			
SPH-S	316R/L-S	●		32	23.8	100	16.35	16	16	16	R	SP300, 300R/L			
	320R/L-S	●		40	26	120	20.35	20	20	20	R	SP300, 300R/L			
	325R/L-S	●		50	31	150	25.35	25	25	25	R	SP300, 300R/L			
	420R/L-S	●		50	31	120	20.45	20	20	20	R	SP400, 400R/L	-	SW15S (Separately ordered)	2
	425R/L-S	●		60	36	150	25.45	25	25	25	R	SP400, 400R/L			
	520R/L-S			60	36	120	20.55	20	20	20	R	SP500, 500R/L			
	525R/L-S	●		70	41	150	25.55	25	25	25	R	SP500, 500R/L			

Applicable inserts **C10**

● : Stock item

Six kinds of inserts can be used in one holder for various operations

Fine Tools

- Strong clamping system and specially designed insert are suitable for small diameter machining
- Six kinds of inserts can be clamped in one holder for various operations
- Guaranteed long tool life due to good toughness substrate with new TiAlN
- High accuracy ground insert ensures high precision machining

Code system

• Insert

NFT	T	08	075	R
New Fine Tool	G : Grooving T : Forming F : Threading	**Minimum Diameter**	**Cutting width**	**Hand** R : Right-handed L : Left-handed

• Shank

NFTIH	08	3	12	S
New Fine Tool Internal Holder	**Minimum Diameter**	**Overhang(LH/DMIN)**	**Shank Diameter**	**Shank Type** S : Steel, C : Carbide

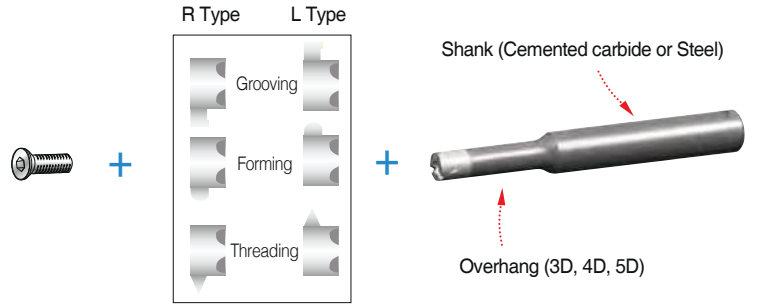
Recommended cutting conditions

Workpiece	Grade (PC130)	Cutting Conditions				
		Min. machining Dia. (ØDmin)				
			Ø8	Ø11	Ø14	Ø16
Carbon steel	◎	vc (m/min)	70~120	70~120	70~120	70~120
		fn (mm/rev)	0.01~0.04	0.01~0.05	0.02~0.05	0.02~0.06
Alloy steel	◎	vc (m/min)	70~120	70~120	70~120	70~120
		fn (mm/rev)	0.01~0.02	0.01~0.04	0.02~0.04	0.02~0.05
Cast iron	○	vc (m/min)	60~100	60~100	60~100	60~100
		fn (mm/rev)	0.01~0.05	0.01~0.05	0.02~0.05	0.02~0.05
Non–ferrous alloy	○	vc (m/min)	100~180	100~180	100~180	100~180
		fn (mm/rev)	0.02~0.06	0.02~0.06	0.02~0.06	0.02~0.06

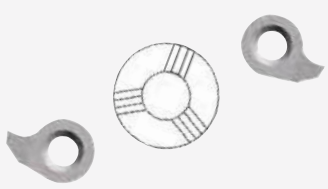
Note - In case of chattering, reduce the cutting speed and feed
- To find the optimal cutting conditions, advise to gradually increase from the lowest cutting condition of the above recommendation
- In case of the unilateral grooving depth over 1 mm, work to the step feed rate

Clamping system

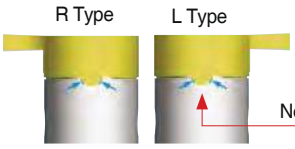
Screw + **Insert** + **Holder**



• Available R/L type insert with one holder

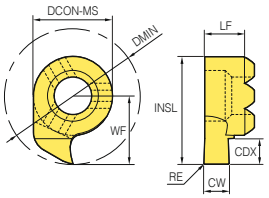


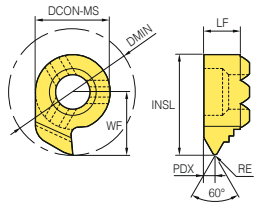
Stable clamping according to the tripod structure



No-Spin-System design for strong clamping

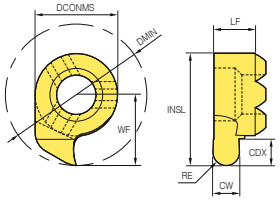
Insert

Application	Picture	Designation		Coated PC5300 R	L	Dimensions (mm) SSC	DMIN	CDX	CW	RE	LF	WF	INSL	DCON-MS	HAND	Configuration
Internal grooving		NFTG	08075R/L	●		8	8	1.3	0.75	0.06	3.15	4.8	7.75	5.9	R/L	
			08085R/L	●		8	8	1.3	0.85	0.06	3.15	4.8	7.75	5.9	R/L	
			08095R/L	●		8	8	1.3	0.95	0.06	3.15	4.8	7.75	5.9	R/L	
			08121R/L	●		8	8	1.3	1.21	0.06	3.15	4.8	7.75	5.9	R/L	
			08141R/L	●		8	8	1.3	1.41	0.06	3.15	4.8	7.75	5.9	R/L	
			08152R/L	●		8	8	1.3	1.52	0.06	3.15	4.8	7.75	5.9	R/L	
			08171R/L	●		8	8	1.3	1.71	0.06	3.15	4.8	7.75	5.9	R/L	
			08202R/L	●		8	8	1.3	2.02	0.06	3.15	4.8	7.75	5.9	R/L	
			11075R/L	●		11	11	1.8	0.75	0.06	3.9	6.7	10.7	8	R/L	
			11085R/L	●		11	11	1.8	0.85	0.06	3.9	6.7	10.7	8	R/L	
			11095R/L	●		11	11	1.8	0.95	0.06	3.9	6.7	10.7	8	R/L	
			11121R/L	●		11	11	2.6	1.21	0.06	3.9	6.7	10.7	8	R/L	
			11141R/L	●		11	11	2.6	1.41	0.06	3.9	6.7	10.7	8	R/L	
			11152 R/L	●		11	11	2.6	1.52	0.06	3.9	6.7	10.7	8	R/L	
			11171R/L	●		11	11	2.6	1.71	0.06	3.9	6.7	10.7	8	R/L	
			11202R/L	●		11	11	2.6	2.02	0.06	3.9	6.7	10.7	8	R/L	
			11202R/L-02	●		11	11	2.6	2.02	0.2	3.9	6.7	10.7	8	R/L	
			11252R/L	●		11	11	2.6	2.52	0.06	3.9	6.7	10.7	8	R/L	
			11302R/L	●		11	11	2.6	3.02	0.06	3.9	6.7	10.7	8	R/L	
			14075R/L	●		14	14	1.8	0.75	0.06	4.85	9	13.5	9	R/L	
			14085R/L	●		14	14	1.8	0.85	0.06	4.85	9	13.5	9	R/L	
			14095R/L	●		14	14	1.8	0.95	0.06	4.85	9	13.5	9	R/L	
			14121R/L	●		14	14	4.3	1.21	0.06	4.85	9	13.5	9	R/L	
			14141R/L	●		14	14	4.3	1.41	0.06	4.85	9	13.5	9	R/L	
			14152R/L	●		14	14	4.3	1.52	0.06	4.85	9	13.5	9	R/L	
			14171R/L	●		14	14	4.3	1.71	0.06	4.85	9	13.5	9	R/L	
			14202R/L	●		14	14	4.3	2.02	0.06	4.85	9	13.5	9	R/L	
			14252R/L	●		14	14	4.3	2.52	0.06	4.85	9	13.5	9	R/L	
			14302R/L	●		14	14	4.3	3.02	0.06	4.85	9	13.5	9	R/L	
			16075R/L	●		16	16	1.8	0.75	0.06	4.8	10.2	15.7	11	R/L	
			16085R/L	●		16	16	1.8	0.85	0.06	4.8	10.2	15.7	11	R/L	
			16095R/L	●		16	16	1.8	0.95	0.06	4.8	10.2	15.7	11	R/L	
			16121R/L	●		16	16	4.6	1.21	0.06	4.8	10.2	15.7	11	R/L	
			16141R/L	●		16	16	4.6	1.41	0.06	4.8	10.2	15.7	11	R/L	
			16171R/L	●		16	16	4.6	1.71	0.06	4.8	10.2	15.7	11	R/L	
			16202R/L	●		16	16	4.6	2.02	0.06	4.8	10.2	15.7	11	R/L	
			16252R/L	●		16	16	4.6	2.52	0.06	4.8	10.2	15.7	11	R/L	
			16302R/L	●		16	16	4.6	3.02	0.06	4.8	10.2	15.7	11	R/L	
			16352R/L	●		16	16	4.6	3.52	0.06	4.8	10.2	15.7	11	R/L	
			16402R/L	●		16	16	4.6	4.02	0.06	4.8	10.2	15.7	11	R/L	

Application	Picture	Designation		Coated PC5300 R	L	Dimensions (mm) SSC	DMIN	PDX	PDY	LF	WF	INSL	DCON-MS	HAND	Configuration
Threading		NFTT	0805MR/L	●		8	8	1	4.8	3.15	4.8	7.75	5.9	R/L	
			0810MR/L	●		8	8	1	4.8	3.15	4.8	7.75	5.9	R/L	
			0815MR/L	●		8	8	1.2	4.8	3.15	4.8	7.75	8	R/L	
			1110MR/L	●		11	11	1.2	6.7	3.9	6.7	10.7	8	R/L	
			1115MR/L	●		11	11	1.2	6.7	3.9	6.7	10.7	8	R/L	
			1120MR/L	●		11	11	1.2	6.7	3.9	6.7	10.7	8	R/L	
			1125MR/L	●		11	11	1.2	6.7	3.9	6.7	10.7	9	R/L	
			1410MR/L			14	14	1.2	9	4.85	9	13.5	9	R/L	
			1415MR/L	●		14	14	1.2	9	4.85	9	13.5	9	R/L	
			1420MR/L			14	14	1.2	9	4.85	9	13.5	9	R/L	
			1425MR/L	●		14	14	1.2	9	4.85	9	13.5	11	R/L	
			1610MR/L			16	16	1.2	10.2	4.8	10.2	15.7	11	R/L	
			1615MR/L	●		16	16	1.2	10.2	4.8	10.2	15.7	11	R/L	
			1620MR/L	●		16	16	1.2	10.2	4.8	10.2	15.7	11	R/L	
			1625MR/L	●		16	16	1.2	10.2	4.8	10.2	15.7	11	R/L	
			1630MR/L			16	16	1.5	10.2	4.8	10.2	15.7	11	R/L	
			1635MR/L			16	16	1.6	10.2	4.8	10.2	15.7	11	R/L	
			1640MR/L	●		16	16	1.8	10.2	4.8	10.2	15.7	5.9	R/L	

● : Stock item

Applicable inserts

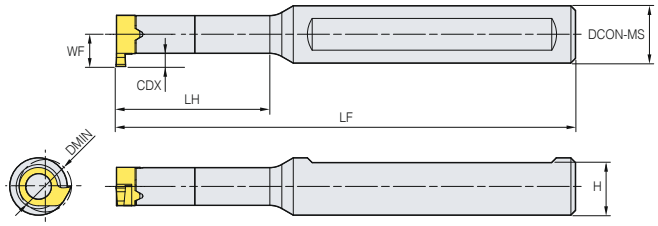
Application	Picture	Designation		Coated PC5300 R	Coated PC5300 L	SSC	DMIN	CDX	CW	RE	LF	WF	INSL	DCON-MS	HAND	Configuration
Forming		NFTF	08082R/L	●		8	8	1.3	0.82	0.41	3.15	4.8	7.75	5.9	R/L	
			08122R/L	●		8	8	1.3	1.22	0.61	3.15	4.8	7.75	5.9	R/L	
			08182R/L	●		8	8	1.3	1.82	0.91	3.15	4.8	7.75	5.9	R/L	
			11082R/L	●		11	11	2.6	0.82	0.41	3.9	6.7	10.7	8	R/L	
			11122R/L			11	11	2.6	1.22	0.61	3.9	6.7	10.7	8	R/L	
			11182R/L	●		11	11	2.6	1.82	0.91	3.9	6.7	10.7	8	R/L	
			11202R/L	●		11	11	2.6	2.02	1.01	3.9	6.7	10.7	8	R/L	
			11302R/L	●		11	11	2.6	3.02	1.51	3.9	6.7	10.7	8	R/L	
			14122R/L	●		14	14	4.3	1.22	0.61	4.85	9	13.5	9	R/L	
			14182R/L	●		14	14	4.3	1.82	0.91	4.85	9	13.5	9	R/L	
			14202R/L	●		14	14	4.3	2.02	1.01	4.85	9	13.5	9	R/L	
			14222R/L	●		14	14	4.3	2.22	1.11	4.85	9	13.5	9	R/L	
			14302R/L	●		14	14	4.3	3.02	1.51	4.85	9	13.5	9	R/L	
			16182R/L	●		16	16	4.6	1.82	0.91	4.8	10.2	15.7	11	R/L	
			16222R/L	●		16	16	4.6	2.22	1.11	4.8	10.2	15.7	11	R/L	
			16302R/L	●		16	16	4.6	3.02	1.51	4.8	10.2	15.7	11	R/L	
			16402R/L	●		16	16	4.6	4.02	2.01	4.8	10.2	15.7	11	R/L	

● : Stock item

NFTIH

- For NFTIH14 type

NFTF
NFTT
NFTG



• R type holder

(mm)

Designation		Stock	CDX	DMIN	OHN	LH	LF	WF	H	DCON-MS	HAND	Applicable inserts (NFTG: Grooving, NFTT: Threading, NFTF: Forming)	Screw	Wrench
NFTIH	08206C	●	1	8	13.4	13.4	65	4.8	4	6	N	NFTG08□□□R/L NFTT08□□□R/L NFTF08□□□R/L	PTKA02508	TW08P
	08212C	●	1	8	16	16	70	4.8	10	12	N			
	08312C	●	1	8	24	24	80	4.8	10	12	N			
	08312S	●	1	8	24	24	80	4.8	10	12	N			
	08412C	●	1	8	32	32	90	4.8	10	12	N			
	08512C	●	1	8	40	40	100	4.8	10	12	N			
	11208C	●	2.3	11	16.7	16.7	80	6.7	7	8	N	NFTG11□□□R/L NFTT11□□□R/L NFTF11□□□R/L	PTKA03510	TW15P
	11212C	●	2.3	11	22	22	75	6.7	11	12	N			
	11312C	●	2.3	11	33	33	95	6.7	11	12	N			
	11312S	●	2.3	11	33	33	95	6.7	11	12	N			
	11412C	●	2.3	11	44	44	110	6.7	11	12	N			
	11512C	●	2.3	11	55	55	120	6.7	11	12	N			
	14012C	●	4	14	20	20	75	9	11	12	N	NFTG14□□□R/L NFTT14□□□R/L NFTF14□□□R/L	PTKA0412	TW15P
	14016C	●	4	14	20	20	75	9	15	16	N			
	14112C	●	4	14	34	34	100	9	11	12	N			
	14116C	●	4	14	34	34	100	9	15	16	N			
	14212C	●	4	14	45	45	110	9	11	12	N			
	14216C	●	4	14	45	45	110	9	15	16	N			
	14312C	●	4	14	64	64	130	9	11	12	N			
	14316C	●	4	14	64	64	130	9	15	16	N			
	16312C	●	4.3	16	48	48	130	10.2	11	12	N	NFTG16□□□R/L NFTT16□□□R/L NFTF16□□□R/L	PTKA0512	TW20P
	16312S	●	4.3	16	48	48	130	10.2	11	12	N			
	16412C	●	4.3	16	64	64	130	10.2	11	12	N			
	16512C	●	4.3	16	80	80	150	10.2	11	12	N			
	16316C	●	4.3	16	48	48	130	10.2	15	16	N			
	16416C	●	4.3	16	64	64	130	10.2	15	16	N			
	16516C	●	4.3	16	80	80	150	10.2	15	16	N			

Applicable inserts **C14 ~ C15**

● : Stock item

The Solution for High-Precision Grooving

K-Notch

KORLOY Grooving Tool

- KORLOY clamping system offers high rigidity for high precision machining
- High-quality cutting edge ensuring long tool life and excellent machinability
- Provides various cutting edge widths for a wide range of selection

Code system

• Insert

KN	G	P	3	M	200	R
K-Notch	**Insert type** B : Blank G : Grooving R : Full Radius T : Threading	**Additional information** P : Positive None : Flat	**Insert size** 2, 3, 4	**Unit** M : Metric None : Inch	**Insert Width** 200 : 2.00 mm	**Hand** L : Left-handed R : Right-handed

• Holder

KN	S	R	25	25	M	3
K-Notch	**Clamping position** S : Side	**Hand** L : Left-handed R : Right-handed	**Shank size** Height : 25 mm Width : 25 mm		**Holder length** E : 70 mm F : 80 mm H : 100 mm K : 125 mm M : 150 mm P : 170 mm	**Insert size** 2, 3, 4

Features of holder

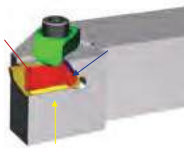
Clamp

- Rigid binding force relative to the clamping force
- User-oriented convenient shape

Clamped view

Insert clamping

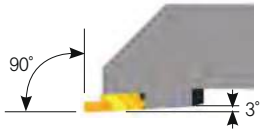
- Provides excellent clamping stability due to the 3-face (bottom, side, and rear face) binding

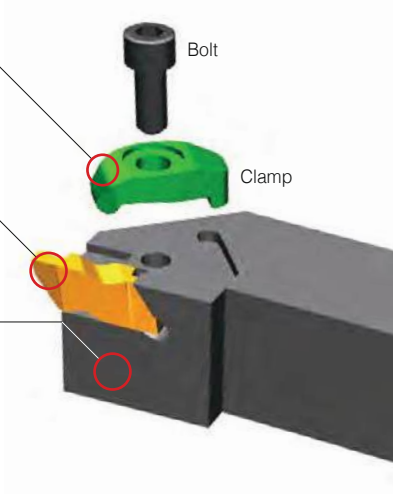


3-face clamping

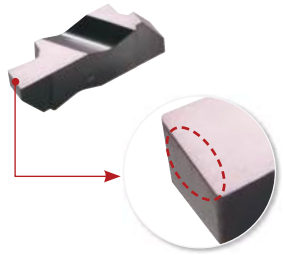
Relief angle

- The relief angle of a flank surface when clamping an insert: 3°





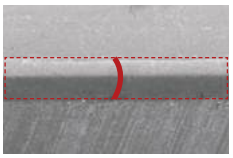
Features of insert



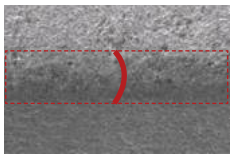
[Edge preparation]

High-quality edge preparation

- Cutting edges in uniform quality
- Long tool life



[K Notch]



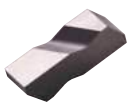
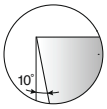
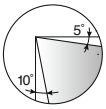
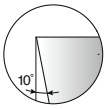
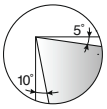
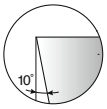
[Competitor]

Mirror-like rake surface

- Improved resistance to welding and chipping
- Improved surface finish of workpieces

[K Notch]

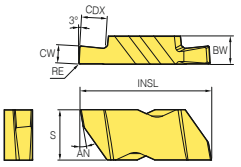
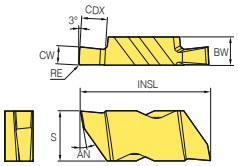
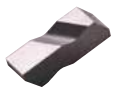
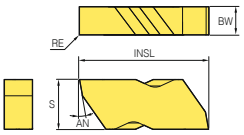
Recommended feed per insert type

Type		KNG	KNGP	KNR	KNRP	KNB
Insert shape						
Cutting-edge						
Application		General grooving	General grooving	Turning profiling	Turning profiling	Blank
Recommended workpiece	1st	P, K	M, N, S	P, K	M, N, S	-
	2nd	M, N, S	P, K	M, N, S	P, K	-
Recommended feed, fn (mm/rev)	P	0.10 - 0.28	0.08 - 0.25	0.10 - 0.28	0.08 - 0.25	-
	M	0.10 - 0.25	0.08 - 0.25	0.10 - 0.25	0.08 - 0.25	-
	K	0.10 - 0.28	0.08 - 0.25	0.10 - 0.28	0.08 - 0.25	-
	N	0.01 - 0.30	0.01 - 0.30	0.01 - 0.30	0.01 - 0.30	-
	S	0.05 - 0.15	0.05 - 0.15	0.05 - 0.15	0.05 - 0.15	-

Recommended cutting speed per grade

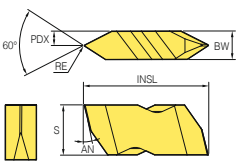
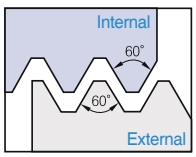
Workpiece		Grade	Recommended cutting speed, vc (m/min) 50 / 100 / 200 / 300 / 600
P	Steel	PC5300	80 - 200
P	Alloy steel	PC5300	60 - 160
M	Stainless steel	PC5300	80 - 130
M	Stainless steel	PC8110	80 - 160
K	Cast iron	PC5300	90 - 200
N	Non-ferrous metal	PC5300	150 - 600
S	Heat-resistant alloy	PC8110	35 - 65

Applicable inserts (Metric)

Application	Picture	Designation			Coated PC5300	Coated PC8110	Uncoated H05	SSC	CDX	CW	RE	BW	INSL	S	AN	HAND	Configuration
Flat Top		KNG	2M	150R				20	2.79	1.5	0.19	3.84	13.03	5.56	10	R	
				200R				20	2.79	2	0.19	3.84	13.03	5.56	10	R	
				250R				20	2.79	2.5	0.19	3.84	13.03	5.56	10	R	
				300R				20	2.79	3	0.19	3.84	13.03	5.56	10	R	
			3M	150R	●			30	1.91	1.5	0.19	4.95	22.709	8.74	10	R	
				200R	●			30	2.79	2	0.19	4.95	22.709	8.74	10	R	
				250R	●	●		30	3.81	2.5	0.19	4.95	22.709	8.74	10	R	
				300R	●	●		30	3.81	3	0.19	4.95	22.709	8.74	10	R	
				400R	●			30	3.81	4	0.32	4.95	22.709	8.74	10	R	
			4M	500R				40	6.35	5	0.2	6.48	28.663	11.51	10	R	
				600R				40	6.35	6	0.2	6.48	28.663	11.51	10	R	
C/B Ground		KNGP	2M	150R				20	2.79	1.5	0.19	3.84	13.03	5.56	10	R	
				200R				20	2.79	2	0.19	3.84	13.03	5.56	10	R	
				250R				20	2.79	2.5	0.19	3.84	13.03	5.56	10	R	
				300R				20	2.79	3	0.19	3.84	13.03	5.56	10	R	
			3M	150R	●			30	1.91	1.5	0.19	4.95	22.709	8.74	10	R	
				200R	●	●		30	2.79	2	0.19	4.95	22.709	8.74	10	R	
				250R	●	●		30	3.81	2.5	0.19	4.95	22.709	8.74	10	R	
				300R	●			30	3.81	3	0.19	4.95	22.709	8.74	10	R	
				400R	●			30	3.81	4	0.32	4.95	22.709	8.74	10	R	
			4M	500R				40	6.35	5	0.2	6.48	28.663	11.51	10	R	
				600R				40	6.35	6	0.2	6.48	28.663	11.51	10	R	
Blank		KNB	2R					20	-	3.81	-	3.84	13.03	5.56	10	R	
			3R					30	-	4.95	-	4.95	22.709	8.74	10	R	
			4R					40	-	6.48	-	6.48	28.663	11.51	10	R	

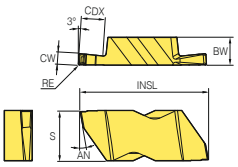
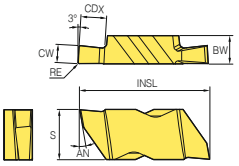
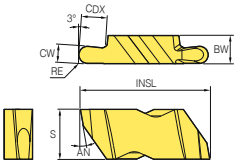
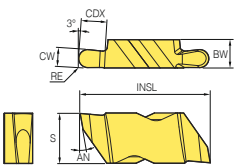
● : Stock item

Applicable inserts (Threading)

Application	Picture	Designation			Coated PC5300	Coated PC8110	SSC	PDX	RE	S	INSL	BW	AN	HAND	Pitch (External) mm	Pitch (External) tpi	Configuration
Partial Profiling 60°		KNT	2R				20	1.9	0.1	5.56	13.03	3.84	13.5	R	0.70-3.00	8-36	  Partial Profiling 60˚
			3R				30	2.49	0.17	8.74	22.709	4.95	13.5	R	1.25-4.00	6-20	
			4R				40	3.25	0.17	11.51	28.663	6.48	13.5	R	1.25-6.25	4-20	

● : Stock item

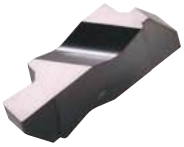
Applicable inserts (Inch)

Application	Picture	Designation	Coated		Dimensions (mm)									Configuration
			PC5300	PC8110	SSC	CDX	CW	RE	S	BW	INSL	AN	HAND	
Flat Top		KNG 2031R			20	1.27	0.79	0.09	5.56	3.84	13.03	10	R	
		2041R			20	1.27	1.04	0.09	5.56	3.84	13.03	10	R	
		2047R			20	1.27	1.19	0.09	5.56	3.84	13.03	10	R	
		2058R			20	1.27	1.47	0.19	5.56	3.84	13.03	10	R	
		2062R			20	2.79	1.57	0.19	5.56	3.84	13.03	10	R	
		2094R			20	2.79	2.39	0.19	5.56	3.84	13.03	10	R	
		2125R			20	2.79	3.18	0.19	5.56	3.84	13.03	10	R	
		3047R			30	1.91	1.19	0.19	8.74	4.95	22.709	10	R	
		3062R	●	●	30	2.39	1.57	0.19	8.74	4.95	22.709	10	R	
		3072R			30	2.39	1.83	0.19	8.74	4.95	22.709	10	R	
		3078R	●		30	2.39	1.98	0.19	8.74	4.95	22.709	10	R	
		3088R			30	2.39	2.24	0.19	8.74	4.95	22.709	10	R	
		3094R			30	3.81	2.39	0.19	8.74	4.95	22.709	10	R	
		3097R	●		30	3.81	2.46	0.32	8.74	4.95	22.709	10	R	
		3105R			30	3.81	2.67	0.19	8.74	4.95	22.709	10	R	
		3110R			30	3.81	2.79	0.32	8.74	4.95	22.709	10	R	
		3122R			30	3.81	3.1	0.19	8.74	4.95	22.709	10	R	
		3125R	●	●	30	3.81	3.18	0.19	8.74	4.95	22.709	10	R	
		3142R			30	3.81	3.61	0.32	8.74	4.95	22.709	10	R	
		3156R			30	3.81	3.96	0.19	8.74	4.95	22.709	10	R	
		3178R			30	3.81	4.52	0.19	8.74	4.95	22.709	10	R	
		3185R			30	3.81	4.7	0.57	8.74	4.95	22.709	10	R	
		3189R		●	30	3.81	4.8	0.57	8.74	4.95	22.709	10	R	
		4125R			40	3.81	3.18	0.19	11.51	6.48	28.663	10	R	
		4189R			40	6.35	4.8	0.57	11.51	6.48	28.663	10	R	
		4213R			40	6.35	5.41	0.19	11.51	6.48	28.663	10	R	
		4219R			40	6.35	5.56	0.57	11.51	6.48	28.663	10	R	
		4250R			40	6.35	6.35	0.57	11.51	6.48	28.663	10	R	
C/B Ground		KNGP 2031R			20	1.27	0.79	0.09	5.56	3.84	13.03	10	R	
		2062R			20	2.79	1.57	0.19	5.56	3.84	13.03	10	R	
		2125R			20	2.79	3.18	0.19	5.56	3.84	13.03	10	R	
		3088R			30	2.39	2.24	0.19	8.74	4.95	22.709	10	R	
		3125R	●	●	30	3.81	3.18	0.19	8.74	4.95	22.709	10	R	
		3156R			30	3.81	3.96	0.19	8.74	4.95	22.709	10	R	
		3189R			30	3.81	4.8	0.57	8.74	4.95	22.709	10	R	
		4189R			40	6.35	4.8	0.57	11.51	6.48	28.663	10	R	
		4250R			40	6.35	6.35	0.57	11.51	6.48	28.663	10	R	
Round Flat Top		KNR 2031R			20	2.79	1.57	0.79	5.56	3.84	13.03	10	R	
		2047R			20	2.79	2.39	1.19	5.56	3.84	13.03	10	R	
		3031R	●		30	2.39	1.58	0.79	8.74	4.95	22.709	10	R	
		3047R		●	30	3.81	2.38	1.19	8.74	4.95	22.709	10	R	
		3062R		●	30	3.81	3.18	1.59	8.74	4.95	22.709	10	R	
		3078R			30	3.81	3.96	1.98	8.74	4.95	22.709	10	R	
		3094R			30	3.81	4.78	2.39	8.74	4.95	22.709	10	R	
		4125R			40	6.35	6.35	3.18	11.51	6.48	28.663	10	R	
Round C/B Ground		KNRP 2031R			20	2.79	1.57	0.79	5.56	3.84	13.03	10	R	
		2047R			20	2.79	2.39	1.19	5.56	3.84	13.03	10	R	
		3031R	●		30	2.39	1.58	0.79	8.74	4.95	22.709	10	R	
		3047R	●	●	30	3.81	2.38	1.19	8.74	4.95	22.709	10	R	
		3062R	●	●	30	3.81	3.18	1.59	8.74	4.95	22.709	10	R	
		3078R		●	30	3.81	3.96	1.98	8.74	4.95	22.709	10	R	
		3094R		●	30	3.81	4.78	2.39	8.74	4.95	22.709	10	R	
		4125R			40	6.35	6.35	3.18	11.51	6.48	28.663	10	R	

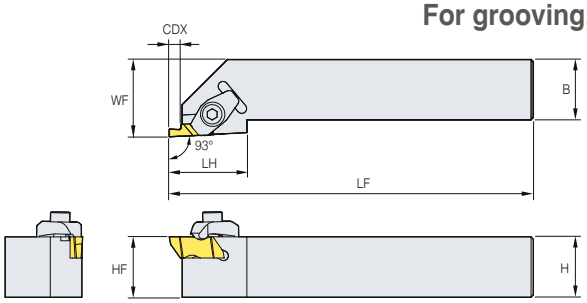
● : Stock item

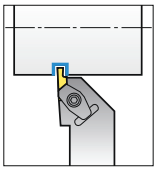
KNSR

For grooving, Profiling machining



KNG KNGP KNT
KNR KNRP KNB





93°

• R type holder

(mm)

Designation		Stock	CDX	LH	LF	WF	B	H	HF	HAND	Applicable inserts	Clamp	Screw	Wrench
KNSR	1010E2		2.79	19	70	14	10	10	10	R	KNG2□ KNGP2□ KNR2□ KNB2R KNT2R	CM74	MHB3010	HW25L
	1212F2		2.79	19	80	16	12	12	12	R				
	1616H2		2.79	19	100	20	16	16	16	R				
	2020K2		2.79	19	125	25	20	20	20	R				
	2525M2		2.79	19	150	32	25	25	25	R				
	2020K3	●	3.81	32	125	25	20	20	20	R	KNG3□ KNGP3□ KNR3□ KNRP3□ KNB3R KNT3R	CM72LP	MHA0512	HW40L
	2525M3	●	3.81	32	150	32	25	25	25	R				
	3225P3		3.81	32	170	32	25	32	32	R				
	3232P3	●	3.81	32	170	40	32	32	32	R				
	2525M4		6.35	35	150	32	25	25	25	R	KNG4□ KNGP4□ KNR4□ KNB4R KNT4R	CM72LP	MHA0512	HW40L
	3225P4		6.35	35	170	32	25	32	32	R				
	3232P4		6.35	35	170	40	32	32	32	R				

Applicable inserts **C18 ~ C19**

● : Stock item

Multi-functional machining with strong clamping system and new technology

KGT

- Double-sided inserts of KGT reduces machining cost
- Strong clamping system ensures stable and accurate machining
- New grade and new technology provide superior tool life
- Various tooling solutions of the KGT improve productivity
- Cutting edges on the front and side faces of the KGT enable multi-functional grooving, achieving high productivity
- Three-dimensional chip breaker ensures excellent chip control in various applications
- The KGT inserts with various chip breakers are available for wide application range
- Special cutting edges are available for quotation

Code system

• Insert

KG	M	N	300	(s)	-	04	-	T
System Code	**Tolerance**	**Hand**	**Width of cutting edge**	**1 corner**		**Nose Radius**		**Chip Breaker**
KG : KORLOY Grooving KR : KORLOY Grooving Round	M : Pressed G : Ground	N : Neutral R : Right L : Left I: Internal	2.0~8.0 mm			0.2 mm 0.3 mm 0.4 mm 0.8 mm		L / R / T / C / LP / RP / B / A TL / CM

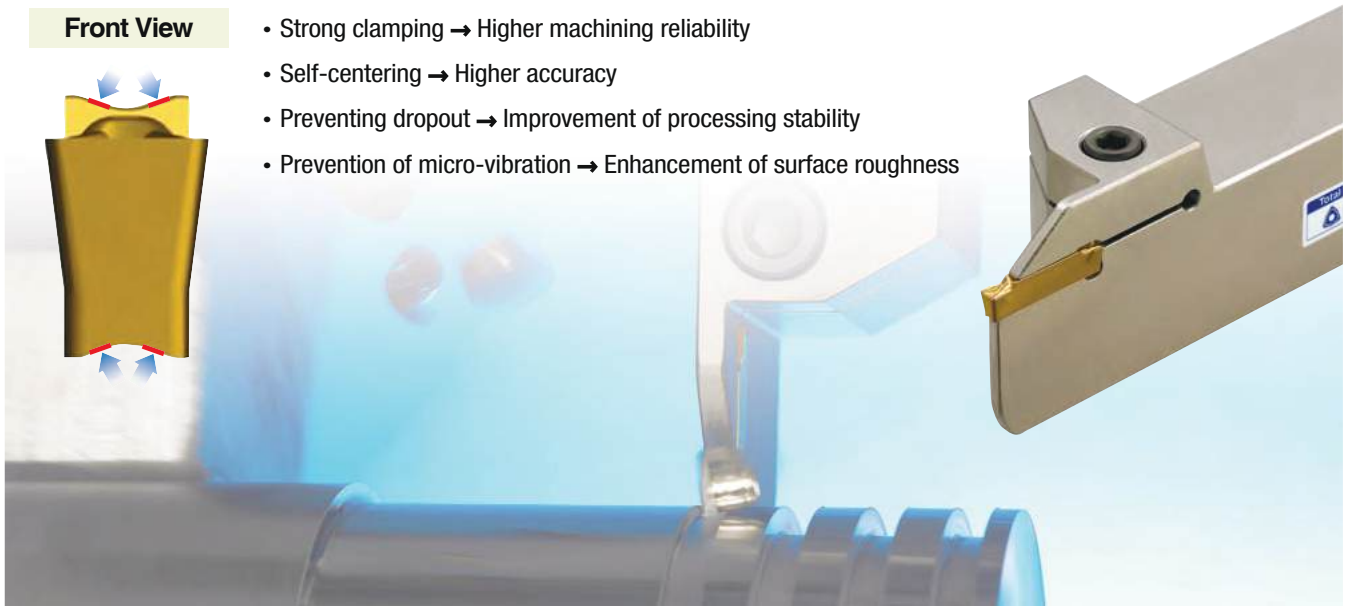
• Holder

KG	E	H	R/L	2525	-	3	T20
System Code	**Working Style**	**Holder Style**	**Hand**	**Shank standard**		**Cutting Width**	**Maximum Depth**
KG SYSTEM (KORLOY Grooving)	E : External Process I : Internal Process F : Facing Process	H : Horizontal V : Vertical U : Undercut	R : Right-handed L : Left-handed	Height : 25 mm Width : 25 mm (For Internal machining : Minimum diameter for machining)		2.0~8.0 mm	8~36 mm

Features

Front View

- Strong clamping ➞ Higher machining reliability
- Self-centering ➞ Higher accuracy
- Preventing dropout ➞ Improvement of processing stability
- Prevention of micro-vibration ➞ Enhancement of surface roughness



Recommended Insert

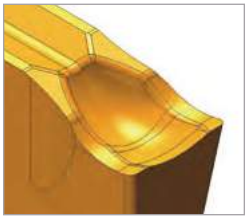
Type	Chip breaker	Cross section type	Recommended workpiece					Recommended cutting											
								External					Internal				Facing		Special
			P	M	K	N	S	Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
KGMN	L		◎	○				◎	○				○				○		
	TL		○	○			◎	◎	○	○			○	○			◎	○	
	T		◎	○	○			◎	○	◎			○	○			◎	◎	
	R		◎	○	◎			◎	○				○				○		
KGGN	B		◎		○			◎											◎
	A					◎		◎	○	○			○						
	R		◎	○	◎			◎	○				○				○		
KGMI	T		◎	○	○								◎	◎					
KGMR/L	LP		◎	○					◎										
	RP		◎		○				◎										
KRMN	C		◎	○	○						◎	◎			○	○			
KRGN	A					◎					◎	◎			○	○			
	CM		○	○			◎				◎	◎			○	○			
KRMI	C		◎	○	○										◎	◎			

◎: 1st recommendation ○: 2nd recommendation

Features of Chip breaker

◎: 1st recommendation ○: 2nd recommendation

L Light grooving

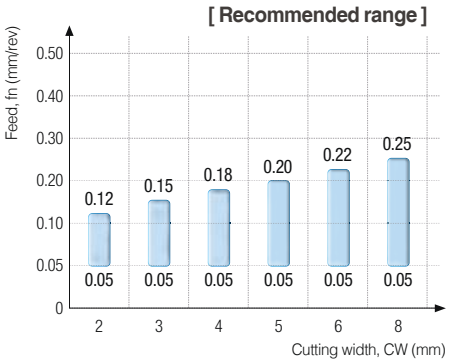


- For Grooving, Cutting and Parting
- Concave cutting edge
- Concave bump
- For HRSA cutting
- Good chip control

Recommended cutting

External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	○				○				○		

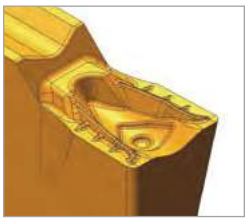
[Recommended range]



Recommended workpiece

P	M	K	N	S
○	○			◎

TL Turning and grooving in Low feed

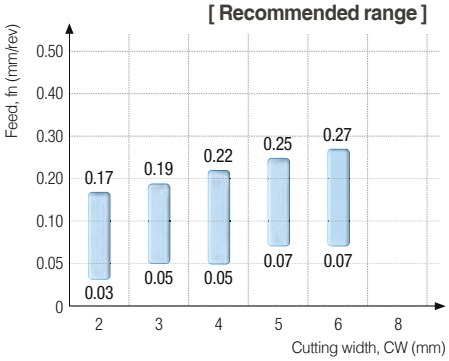


- For Grooving and Parting
- Concave cutting edge
- Concave rake surface
- Low hardness workpiece
- Small diameter part cutting

Recommended cutting

External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	○	○			○	○			◎	○	

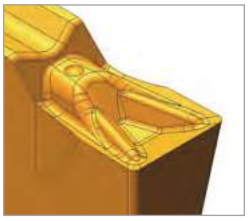
[Recommended range]



Recommended workpiece

P	M	K	N	S
◎	○			

T Turning and grooving

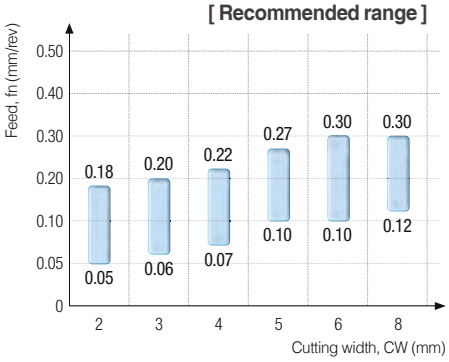


- For Grooving, Cutting and Parting
- Straight cutting edge
- Concave bump
- For various workpiece cutting
- Good chip control

Recommended cutting

External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	○	◎			○	○			◎	◎	

[Recommended range]



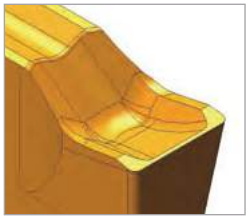
Recommended workpiece

P	M	K	N	S
◎	○	○		

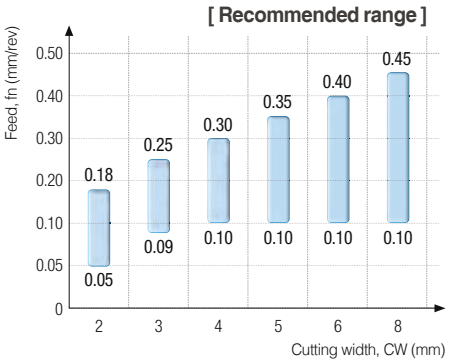
Features of Chip breaker

◎: 1st recommendation ○: 2nd recommendation

R Rough grooving



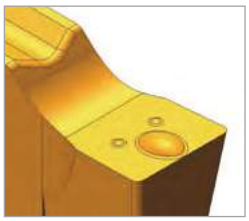
- For Grooving and Parting
- Straight cutting edge
- Hard cutting edge
- High hardness workpiece
- For high feed cutting



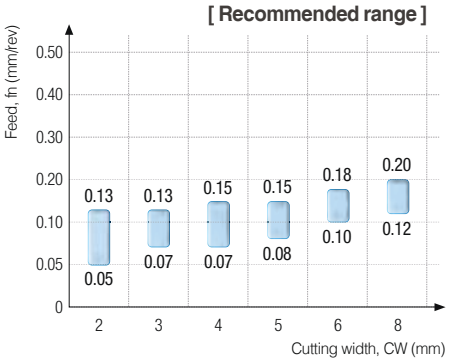
Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	○				○				○		

Recommended workpiece				
P	M	K	N	S
◎	○	◎		

B Blank for precision grooving



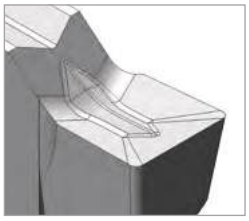
- For Grooving
- Straight cutting edge
- Special shape
- Good surface finish of workpiece



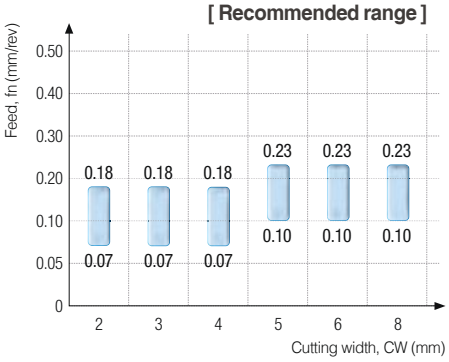
Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎											◎

Recommended workpiece				
P	M	K	N	S
◎		○		

A Aluminum grooving



- For Grooving, Parting and Turning
- Straight cutting edge
- Aluminum workpiece
- Good surface finish of workpiece



Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	○	○			○						

Recommended workpiece				
P	M	K	N	S
			◎	

Features of Chip breaker

◎: 1st recommendation ○: 2nd recommendation

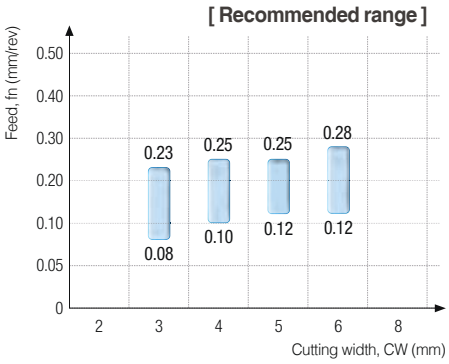
CM Copying and relief in Medium feed

- For Copying and Relief
- Round cutting edge
- Bump on rake surface
- For HRSA cutting
- Good surface finish of workpiece

Recommended cutting

External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
			◎	◎			○	○			

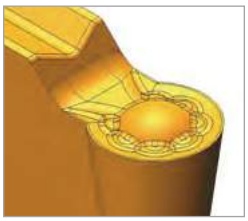
[Recommended range]



Recommended workpiece

P	M	K	N	S
○	○			◎

C Copying and relief

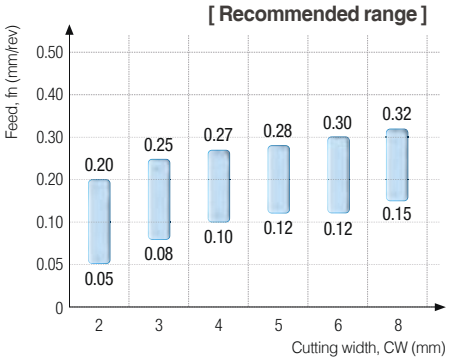


- For Copying and Relief
- Round cutting edge
- Bump on rake surface
- Good surface finish of workpiece

Recommended cutting

External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
			◎	◎			○	○			

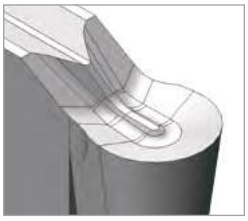
[Recommended range]



Recommended workpiece

P	M	K	N	S
◎	○	○		

A Aluminum grooving

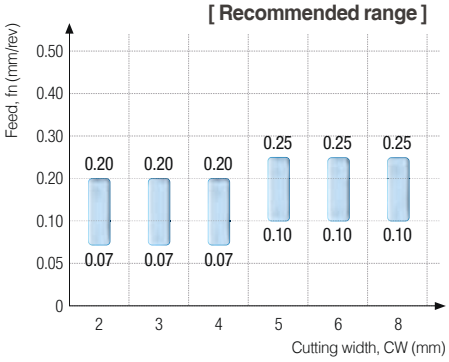


- For Copying and Relief
- Round cutting edge
- Aluminum workpiece
- Good surface finish of workpiece

Recommended cutting

External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
			◎	◎			○	○			

[Recommended range]



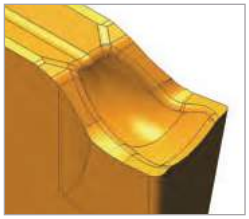
Recommended workpiece

P	M	K	N	S
			◎	

Features of Chip breaker

◎: 1st recommendation ○: 2nd recommendation

LP Light Parting

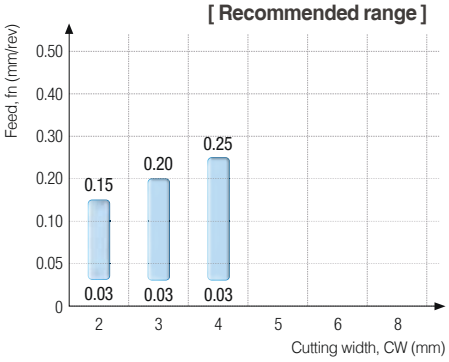


- For Parting
- Lead angle cutting edge
- Concave rake surface
- Low hardness workpiece
- Small diameter part cutting

Recommended cutting

External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
	◎										

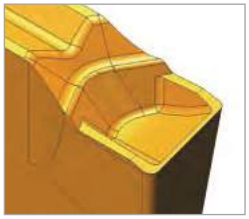
[Recommended range]



Recommended workpiece

P	M	K	N	S
◎	○			

RP Rough Parting

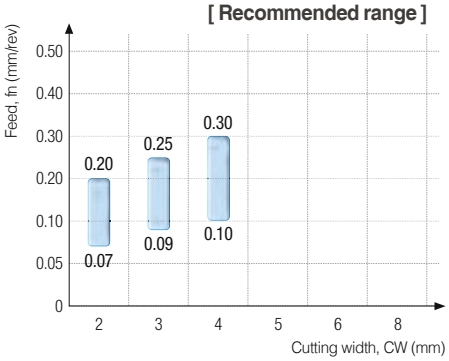


- For Parting
- Lead angle cutting edge
- Hard cutting edge
- High hardness workpiece
- Good for high feed cutting

Recommended cutting

External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
	◎										

[Recommended range]



Recommended workpiece

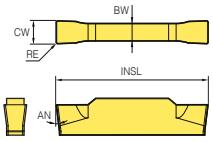
P	M	K	N	S
◎		○		

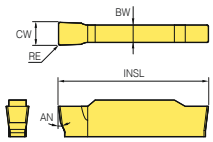
Recommended cutting conditions

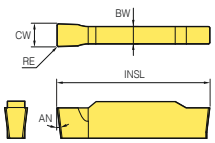
Workpiece						Grade						Chip breaker									
						CVD			PVD			Grooving						Turning			
ISO	Workpiece material		KS	ISO	Brinell hardness (HB)	NC3225	NC5330	NC6315	PC3035	PC5300	PC9030	L	TL	T	R	C	CM	TL	T	C	CM
						vc (m/min)						fn (mm/rev)						fn (mm/rev)			
P	Carbon	C = 0.10 ~0.25%	SM25C	C25	125	210	160	-	100	110	-	0.15	0.12	0.15	0.25	0.20	0.16	0.19	0.20	0.25	0.23
						230	**170**	**-**	**140**	**140**	**-**	**0.10**	**0.10**	**0.11**	**0.17**	**0.15**	**0.13**	**0.17**	**0.16**	**0.20**	**0.18**
						240	190	-	180	170	-	0.05	0.08	0.07	0.09	0.10	0.10	0.15	0.12	0.15	0.13
		C = 0.25 ~0.55%	SM35C	C35	160	200	140	-	95	100	-	0.15	0.12	0.15	0.25	0.20	0.16	0.19	0.20	0.25	0.23
						210	**160**	**-**	**130**	**130**	**-**	**0.10**	**0.10**	**0.11**	**0.17**	**0.15**	**0.13**	**0.17**	**0.16**	**0.20**	**0.18**
						220	170	-	180	160	-	0.05	0.08	0.07	0.09	0.10	0.10	0.15	0.12	0.15	0.13
		C = 0.55 ~0.80%	SM55C	C55	229	180	130	-	90	90	-	0.15	0.12	0.15	0.25	0.20	0.16	0.19	0.2	0.25	0.23
						200	**150**	**-**	**130**	**120**	**-**	**0.10**	**0.10**	**0.11**	**0.17**	**0.15**	**0.13**	**0.17**	**0.16**	**0.20**	**0.18**
						210	160	-	170	150	-	0.05	0.08	0.07	0.09	0.10	0.10	0.15	0.12	0.15	0.13
	Low alloy steel ≤ 5%	Nonhardened	SCM440	42CrMo4	180	150	110	-	60	70	-	0.13	0.11	0.13	0.21	0.18	0.14	0.17	0.18	0.23	0.20
						160	**120**	**-**	**100**	**100**	**-**	**0.09**	**0.09**	**0.10**	**0.15**	**0.13**	**0.11**	**0.15**	**0.14**	**0.18**	**0.15**
						170	130	-	140	130	-	0.05	0.07	0.07	0.09	0.08	0.08	0.13	0.10	0.13	0.10
		Hardened and tempered	SCM445	-	350	85	60	-	40	50	-	0.13	0.11	0.13	0.21	0.18	0.14	0.17	0.18	0.23	0.20
						90	**70**	**-**	**65**	**60**	**-**	**0.09**	**0.09**	**0.10**	**0.15**	**0.13**	**0.11**	**0.15**	**0.14**	**0.18**	**0.15**
						100	80	-	90	70	-	0.05	0.07	0.07	0.09	0.08	0.08	0.13	0.10	0.13	0.10
	High alloy steel > 5%	Annealed	STD11	-	200	110	80	-	50	55	-	0.13	0.11	0.13	0.21	0.18	0.14	0.17	0.18	0.23	0.20
						120	**90**	**-**	**80**	**75**	**-**	**0.09**	**0.09**	**0.10**	**0.15**	**0.13**	**0.11**	**0.15**	**0.14**	**0.18**	**0.15**
						130	100	-	120	95	-	0.05	0.07	0.07	0.09	0.08	0.08	0.13	0.10	0.13	0.10
		Hardened tool steel	STD61	X40CrMoV5-1	352	90	65	-	40	40	-	0.13	0.11	0.13	0.21	0.18	0.14	0.17	0.18	0.23	0.20
						100	**70**	**-**	**65**	**60**	**-**	**0.09**	**0.09**	**0.10**	**0.15**	**0.13**	**0.11**	**0.15**	**0.14**	**0.18**	**0.15**
						110	80	-	90	80	-	0.05	0.07	0.07	0.09	0.08	0.08	0.13	0.10	0.13	0.10
M	Austenite series		STS304	X5CrNi18-9	160 ~ 180	-	85	-	-	60	50	0.13	0.11	0.13	0.21	0.18	0.14	0.17	0.18	0.23	0.20
						-	**90**	**-**	**-**	**80**	**70**	**0.09**	**0.09**	**0.10**	**0.15**	**0.13**	**0.11**	**0.15**	**0.14**	**0.18**	**0.15**
						-	100	-	-	100	90	0.05	0.07	0.07	0.09	0.08	0.08	0.13	0.10	0.13	0.10
			STS316	X5CrNiMo17-12-2	160 ~ 180	-	85	-	-	60	50	0.13	0.11	0.13	0.21	0.18	0.14	0.17	0.18	0.23	0.20
						-	**90**	**-**	**-**	**80**	**70**	**0.09**	**0.09**	**0.10**	**0.15**	**0.13**	**0.11**	**0.15**	**0.14**	**0.18**	**0.15**
						-	100	-	-	100	90	0.05	0.07	0.07	0.09	0.08	0.08	0.13	0.10	0.13	0.10
K	Gray cast iron	Low tensile strength	GC150	150	≤ 212	-	105	150	-	80	-	-	-	0.13	0.21	0.18	-	0.17	0.18	0.23	0.20
						-	**110**	**160**	**-**	**100**	**-**	**-**	**-**	**0.10**	**0.15**	**0.13**	**-**	**0.15**	**0.14**	**0.18**	**0.15**
						-	120	170	-	120	-	-	-	0.07	0.09	0.08	-	0.13	0.10	0.13	0.10
		High tensile strength	GC250 GC350	250 350	≤ 248 ≤ 277	-	85	120	-	80	-	-	-	0.13	0.21	0.18	-	0.17	0.18	0.23	0.20
						-	**90**	**130**	**-**	**100**	**-**	**-**	**-**	**0.10**	**0.15**	**0.13**	**-**	**0.15**	**0.14**	**0.18**	**0.15**
						-	100	140	-	120	-	-	-	0.07	0.09	0.08	-	0.13	0.10	0.13	0.10
	Ductile cast iron		GCD500-7	500-7	170 ~ 241	-	65	95	-	70	-	-	-	0.15	0.25	0.20	-	0.19	0.20	0.25	0.23
						-	**70**	**100**	**-**	**85**	**-**	**-**	**-**	**0.11**	**0.17**	**0.15**	**-**	**0.17**	**0.16**	**0.20**	**0.18**
						-	80	110	-	100	-	-	-	0.07	0.09	0.10	-	0.15	0.12	0.15	0.13
			GCD600-3	600-3	192 ~ 269	-	55	85	-	70	-	-	-	0.15	0.25	0.20	-	0.19	0.20	0.25	0.23
						-	**60**	**90**	**-**	**85**	**-**	**-**	**-**	**0.11**	**0.17**	**0.15**	**-**	**0.17**	**0.16**	**0.20**	**0.18**
						-	70	100	-	100	-	-	-	0.07	0.09	0.10	-	0.15	0.12	0.15	0.13
			GCD700-2	700-2	229 ~ 302	-	55	85	-	70	-	-	-	0.15	0.25	0.20	-	0.19	0.20	0.25	0.23
						-	**60**	**90**	**-**	**85**	**-**	**-**	**-**	**0.11**	**0.17**	**0.15**	**-**	**0.17**	**0.16**	**0.20**	**0.18**
						-	70	100	-	100	-	-	-	0.07	0.09	0.10	-	0.15	0.12	0.15	0.13
S	Inconel		Inconel909	-	200	-	-	-	-	30	-	-	0.09	0.10	-	0.12	0.10	0.15	0.13	0.16	0.14
						-	**-**	**-**	**-**	**40**	**-**	**-**	**0.07**	**0.08**	**-**	**0.10**	**0.08**	**0.13**	**0.11**	**0.14**	**0.12**
						-	-	-	-	50	-	-	0.05	0.06	-	0.08	0.06	0.11	0.09	0.12	0.10
			Inconel718	-	350	-	-	-	-	20	-	-	0.09	0.10	-	0.12	0.10	0.15	0.13	0.16	0.14
						-	**-**	**-**	**-**	**30**	**-**	**-**	**0.07**	**0.08**	**-**	**0.10**	**0.08**	**0.13**	**0.11**	**0.14**	**0.12**
						-	-	-	-	40	-	-	0.05	0.06	-	0.08	0.06	0.11	0.09	0.12	0.10
	Titanium alloy		Pure titanium	-	70	-	-	-	-	40	-	-	0.11	0.13	-	0.18	0.14	0.17	0.18	0.20	0.20
						-	**-**	**-**	**-**	**50**	**-**	**-**	**0.09**	**0.10**	**-**	**0.13**	**0.11**	**0.15**	**0.14**	**0.18**	**0.15**
						-	-	-	-	60	-	-	0.07	0.07	-	0.08	0.08	0.13	0.10	0.16	0.10
			Ti-6Al-4V	-	334	-	-	-	-	40	-	-	0.11	0.13	-	0.18	0.14	0.17	0.18	0.20	0.20
						-	**-**	**-**	**-**	**50**	**-**	**-**	**0.09**	**0.10**	**-**	**0.13**	**0.11**	**0.15**	**0.14**	**0.18**	**0.15**
						-	-	-	-	60	-	-	0.07	0.07	-	0.08	0.08	0.13	0.10	0.16	0.10

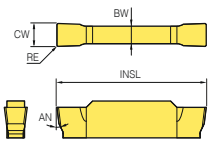
Applicable inserts

Application	Picture	Designation		Coated						Uncoated		Dimensions (mm)							Configuration
				NC3225	NC5330	NC6315	PC3035	PC5300	PC9030	H01	H05	SSC	CW	RE	BW	INSL	AN	HAND	
Grooving	KGMN-L	KGMN	200-02-L	●	●		●	●	●			20	2	0.2	1.7	20	7	N	
			300-02-L	●	●		●	●	●			30	3	0.2	2.3	20	7	N	
			400-02-L	●	●		●	●	●			40	4	0.2	3.3	20	7	N	
			500-03-L	●	●		●	●				50	5	0.3	4.1	25	7	N	
			600-03-L					●				60	6	0.3	5.1	25	7	N	
Grooving · Turning	KGMN-TL	KGMN	300-02-TL									30	3	0.2	2.3	20	7	N	
			300-04-TL									30	3	0.4	2.3	20	7	N	
			400-04-TL									40	4	0.4	3.3	20	7	N	
			500-04-TL									50	5	0.4	4.1	25	7	N	
			500-08-TL									50	5	0.8	4.1	25	7	N	
			600-08-TL									60	6	0.8	5.1	25	7	N	
Grooving · Turning	KGMN-T	KGMN	150-015-T	●	●			●				15	1.5	0.15	1.2	16	7	N	
			200-02-T	●	●	●	●	●	●			20	2	0.2	1.7	20	7	N	
			250-02-T	●	●			●				25	2.5	0.2	2	20	7	N	
			300-02-T	●	●	●	●	●	●			0	3	0.2	2.3	20	7	N	
			300-04-T	●	●	●	●	●	●			30	3	0.4	2.3	20	7	N	
			400-04-T	●	●	●	●	●	●			40	4	0.4	3.3	20	7	N	
			400-08-T	●	●	●	●	●	●			40	4	0.8	3.3	20	7	N	
			500-04-T	●	●	●	●	●	●			50	5	0.4	4.1	25	7	N	
			500-08-T	●	●	●	●	●	●			50	5	0.8	4.1	25	7	N	
			600-04-T	●	●	●	●	●	●			60	6	0.4	5.1	25	7	N	
			600-08-T	●	●	●	●	●				60	6	0.8	5.1	25	7	N	
			800-08-T	●		●	●	●				80	8	0.8	6.1	30	7	N	
Rough Grooving	KGMN-R	KGMN	150-015-R	●	●			●				15	1.5	0.15	1.2	16	7	N	
			200-02-R	●	●		●	●	●			20	2	0.2	1.7	20	7	N	
			300-02-R	●	●		●	●	●			30	3	0.2	2.3	20	7	N	
			400-03-R	●	●		●	●	●			40	4	0.3	3.3	20	7	N	
			500-03-R		●			●				50	5	0.3	4.1	25	7	N	
			600-03-R		●			●				60	6	0.3	3.4	25	7	N	
			800-04-R		●			●				80	8	0.4	6.1	30	7	N	
Aluminum Grooving (Single insert)	KGGN-A	KGGN	200S-02-A									20	2	0.2	1.7	20	7	N	
			300S-02-A									30	3	0.2	2.3	20	7	N	
			400S-04-A									40	4	0.4	3.3	20	7	N	
			500S-04-A									50	5	0.4	4.1	25	7	N	
			600S-04-A									60	6	0.4	5.1	25	7	N	
Grooving · Parting off (Single insert)	KGGN-R	KGGN	200S-02-R									20	2	0.2	1.7	20	7	N	
			300S-02-R					●				30	3	0.2	2.3	20	7	N	
			400S-02-R					●				40	4	0.3	3.3	20	7	N	
			500S-02-R					●				50	5	0.3	4.1	25	7	N	
			600S-02-R					●				60	6	0.3	5.1	25	7	N	
			800S-04-R					●				80	8	0.4	6.1	30	7	N	
Aluminum Grooving	KGGN-R	KGGN	200-02-A							●		20	2	0.2	1.7	20	7	N	
			300-02-A							●		30	3	0.2	2.3	20	7	N	
			400-04-A							●		40	4	0.4	3.3	20	7	N	
			500-04-A							●		50	5	0.4	4.1	25	7	N	
			600-04-A							●		60	6	0.4	5.1	25	7	N	



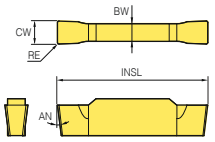
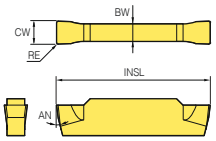
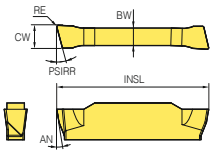
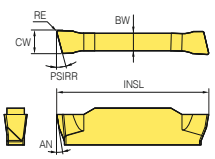






● : Stock item

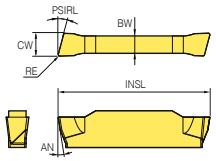
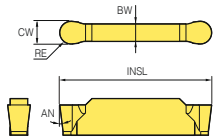
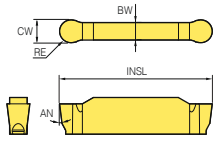
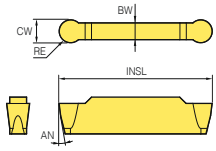
Applicable inserts

Application	Picture	Designation		Coated						Uncoated		Dimensions (mm)									Configuration
				NC3225	NC5330	NC6315	PC3035	PC5300	PC9030	H01	H05	SSC	CW	PSIRR	PSIRL	RE	BW	INSL	AN	HAND	
Grooving (Ground insert)	KGGN-B	KGGN	265-015-B									30	2.65	-	-	0.15	2.3	20	7	N	
			300-020-B									30	3	-	-	0.2	2.3	20	7	N	
			300-040-B									30	3	-	-	0.4	2.3	20	7	N	
			315-015-B									30	3.15	-	-	0.15	2.3	20	7	N	
			400-040-B									40	4	-	-	0.4	3.3	20	7	N	
			400-080-B									40	4	-	-	0.8	3.3	20	7	N	
			415-015-B									40	4.15	-	-	0.15	3.3	20	7	N	
			478-055-B									50	4.78	-	-	0.55	4.1	25	7	N	
			500-080-B									50	5	-	-	0.8	4.1	25	7	N	
			515-015-B									50	5.15	-	-	0.15	4.1	25	7	N	
			600-080-B									60	6	-	-	0.8	5.1	25	7	N	
			600-120-B									60	6	-	-	1.2	5.1	25	7	N	
			800-080-B									80	8	-	-	0.8	6.1	30	7	N	
			800-120-B									80	8	-	-	1.2	6.1	30	7	N	
Grooving · Parting off	KGGN-R	KGGN	200-02-R									20	2	-	-	0.2	1.7	20	7	N	
			300-02-R									30	3	-	-	0.2	2.3	20	7	N	
			400-03-R									40	4	-	-	0.3	3.3	20	7	N	
			500-03-R									50	5	-	-	0.3	4.1	25	7	N	
			600-03-R									60	6	-	-	0.3	5.1	25	7	N	
			800-04-R									80	8	-	-	0.4	6.1	30	7	N	
Grooving · Internal	KGMI-T	KGMI	200-02-T					●				20	2	-	-	0.2	1.7	20	7	N	
			300-04-T					●				30	3	-	-	0.4	2.3	20	7	N	
			400-04-T					●				40	4	-	-	0.4	3.3	20	7	N	
Light parting	KGMR-LP	KGMR	200-6D-LP		●			●				20	2	-	6	0.2	1.7	20	7	R	
			200-8D-LP									20	2	-	8	0.2	1.7	20	7	R	
			200-15D-LP		●			●				20	2	-	15	0.2	1.7	20	7	R	
			300-6D-LP		●			●				30	3	-	6	0.2	2.3	20	7	R	
			300-15D-LP		●			●				30	3	-	15	0.2	2.3	20	7	R	
			400-4D-LP		●			●				40	4	-	4	0.3	3.3	20	7	R	
			400-15D-LP									40	4	-	15	0.3	3.3	20	7	R	
			500-4D-LP									50	5	-	4	0.3	4.1	25	7	R	
Rough parting	KGMR-RP	KGMR	200-6D-RP		●			●				20	2	6	-	0.2	1.7	20	7	R	
			200-8D-RP									20	2	8	-	0.2	1.7	20	7	R	
			200-15D-RP		●			●				20	2	15	-	0.2	1.7	20	7	R	
			300-6D-RP		●			●				30	3	6	-	0.2	2.3	20	7	R	
			300-15D-RP		●			●				30	3	15	-	0.2	2.3	20	7	R	
			400-4D-RP		●			●				40	4	4	-	0.3	3.3	20	7	R	
			400-15D-RP		●			●				40	4	15	-	0.3	3.3	20	7	R	
			500-4D-RP									50	5	4	-	0.3	4.1	25	7	R	

• You can grind the chip breaker, 'B' as any shape you want. If you want any special shape of chip breaker, please contact your distributor.

● : Stock item

Applicable inserts

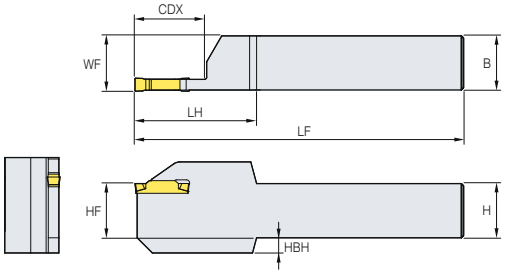
Application	Picture	Designation		Coated						Uncoated		Dimensions (mm)									Configuration
				NC3225	NC5330	NC6315	PC3035	PC5300	PC9030	H01	H05	SSC	CW	PSIRR	PSIRL	RE	BW	INSL	AN	HAND	
Light parting	KGML-LP	KGML	200-6D-LP									20	2	-	6	0.2	1.7	20	7	L	
			200-15D-LP									20	2	-	15	0.2	1.7	20	7	L	
			300-6D-LP									30	3	-	6	0.2	2.3	20	7	L	
			300-15D-LP									30	3	-	15	0.2	2.3	20	7	L	
			400-4D-LP									40	4	-	4	0.3	3.3	20	7	L	
			400-15D-LP									40	4	-	15	0.3	3.3	20	7	L	
Rough parting	KGML-RP	KGML	200-6D-RP									20	2	6	-	0.2	1.7	20	7	L	
			200-15D-RP									20	2	15	-	0.2	1.7	20	7	L	
			300-6D-RP									30	3	6	-	0.2	2.3	20	7	L	
			300-15D-RP									30	3	15	-	0.2	2.3	20	7	L	
			400-4D-RP									40	4	4	-	0.3	3.3	20	7	L	
			400-15D-RP									40	4	15	-	0.3	3.3	20	7	L	
Relief Profiling	KRMN-C	KRMN	200-C	●	●	●	●	●				20	2	-	-	1	1.7	20	5	N	
			300-C	●	●		●	●				30	3	-	-	1.5	2.2	20	7	N	
			400-C	●	●	●	●	●				40	4	-	-	2	3.3	20	7	N	
			500-C	●	●	●	●	●				50	5	-	-	2.5	4.1	25	7	N	
			600-C	●	●	●	●	●				60	6	-	-	3	5	25	7	N	
			800-C	●	●	●		●				80	8	-	-	4	6	25	7	N	
Aluminum Grooving	KRGN-A	KRGN	300-A							●		30	3	-	-	1.5	2.3	20	7	N	
			400-A							●		40	4	-	-	2	3.3	20	7	N	
			500-A							●		50	5	-	-	2.5	4.1	25	7	N	
			600-A							●		60	6	-	-	3	5.1	25	7	N	
			800-A									80	8	-	-	4	6.1	30	7	N	
Relief Profiling	KRGN-CM	KRGN	300-CM									30	3	-	-	1.5	2.2	20	7	N	
			400-CM									40	4	-	-	2	3.3	20	7	N	
			500-CM									50	5	-	-	2.5	4.1	25	7	N	
Profiling	KRMI-C	KRMI	200-C									20	2	-	-	1	1.7	20	7	N	
			300-C									30	3	-	-	1.5	2.2	20	7	N	
			400-C									40	4	-	-	2	3.2	20	7	N	

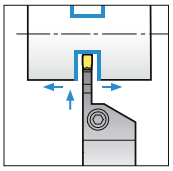
● : Stock item

KGEHR/L

For grooving, turning, parting off, and relief machining

KGGN KGMN
KGMR/L KRMN
KRGN





• R type holder

(mm)

Designation		Stock R	Stock L	CDX	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
KGEHR/L	1616-1.5-T14	●		14	33	100	16.2	16	-	16	16	R/L			
	2020-1.5-T14	●		14	33	125	20.2	20	-	20	20	R/L	KGMN150-□-□	MHA0512	HW40L
	2525-1.5-T14	●		14	33	150	25.2	25	-	25	25	R/L			
	1212-2-T08	●		8	33	100	12.2	12	-	12	12	R/L			
	1616-2-T08	●	●	8	33	100	16.2	16	-	16	16	R/L			
	2020-2-T08	●	●	8	33	125	20.2	20	-	20	20	R/L			
	2525-2-T08	●	●	8	33	150	25.2	25	-	25	25	R/L	KGMN200-□-□		
	1616-2-T12	●	●	12	33	100	16.2	16	-	16	16	R/L	KGMR/L200-□-□		
	2020-2-T12	●	●	12	33	125	20.2	20	-	20	20	R/L	KRMN200-C	MHA0512	HW40L
	2525-2-T12	●	●	12	36	150	25.2	25	-	25	25	R/L	KGGN200-□-□		
	1616-2-T17	●	●	17	38	100	16.2	16	-	16	16	R/L			
	2020-2-T17	●	●	17	38	125	20.2	20	-	20	20	R/L			
	2525-2-T17	●	●	17	38	150	25.2	25	-	25	25	R/L			
	1616-2.5-T17	●		17	38	100	16.3	16	-	16	16	R/L			
	2020-2.5-T17	●		17	38	125	20.3	20	-	20	20	R/L	KGMN250-□-□	MHA0512	HW40L
	2525-2.5-T17	●		17	38	150	25.3	25	-	25	25	R/L			
	1616-3-T10	●	●	10	33	100	16.4	16	-	16	16	R/L			
	2020-3-T10	●	●	10	33	125	20.4	20	-	20	20	R/L			
	2525-3-T10	●	●	10	33	150	25.4	25	-	25	25	R/L			
	3232-3-T10	●		10	33	170	32.4	32	-	32	32	R/L			
	1616-3-T13	●	●	13	33	100	16.4	16	-	16	16	R/L	KGMN300-□-□		
	2020-3-T13	●	●	13	33	125	20.4	20	-	20	20	R/L	KGMR/L300-□-□		
	2525-3-T13	●	●	13	33	150	25.4	25	-	25	25	R/L	KRMN300-C	MHA0512	HW40L
	1616-3-T20	●	●	20	41	100	16.4	16	-	16	16	R/L	KGGN300-□-□		
	2020-3-T20	●	●	20	41	125	20.4	20	-	20	20	R/L	KRGN300-□		
	2525-3-T20	●	●	20	41	150	25.4	25	-	25	25	R/L			
	3232-3-T20	●		20	41	170	32.4	32	-	32	32	R/L			
	2525-3-T25	●	●	25	46	150	25.4	25	-	25	25	R/L			
	1616-4-T10	●	●	10	33	100	16.4	16	-	16	16	R/L			
	2020-4-T10	●	●	10	33	125	20.4	20	-	20	20	R/L			
	2525-4-T10	●	●	10	33	150	25.4	25	-	25	25	R/L			
	3232-4-T10	●		10	33	170	32.4	32	-	32	32	R/L			
	1616-4-T15	●	●	15	36	100	16.4	16	-	16	16	R/L			
	2020-4-T15	●	●	15	36	125	20.4	20	-	20	20	R/L	KGMN400-□-□		
	2525-4-T15	●	●	15	36	150	25.4	25	-	25	25	R/L	KGMR/L400-□-□		
	1616-4-T20	●	●	20	41	100	16.4	16	-	16	16	R/L	KRMN400-C	BHA0616	HW50L
	2020-4-T20	●	●	20	41	125	20.4	20	-	20	20	R/L	KGGN400-□-□		
	2525-4-T20	●	●	20	41	150	25.4	25	-	25	25	R/L	KRGN400-□		
	3232-4-T20	●	●	20	41	170	32.4	32	-	32	32	R/L			
	1616-4-T25	●	●	25	46	100	16.4	16	-	16	16	R/L			
	2020-4-T25	●	●	25	46	125	20.4	20	-	20	20	R/L			
	2525-4-T25	●	●	25	46	150	25.4	25	-	25	25	R/L			

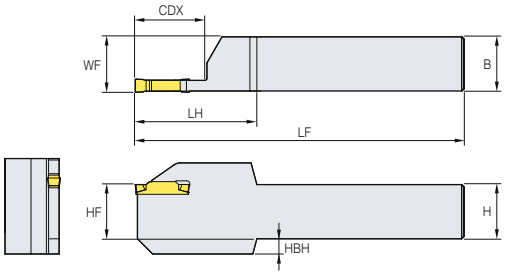
Applicable inserts **C28 ~ C30**

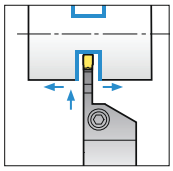
● : Stock item

KGEHR/L

For grooving, turning, parting off, and relief machining

KGGN KGMN
KGMR/L KRMN
KRGN





• R type holder

(mm)

Designation		Stock R	Stock L	CDX	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
KGEHR/L	2020-5-T12	●	●	12	37	125	20.5	20	-	20	20	R/L	KGMN500-□-□ KRMN500-C KGGN500-□-□ KRGN500-□	BHA0616	HW50L
	2525-5-T12	●	●	12	37	150	25.55	25	-	25	25	R/L			
	2020-5-T15	●		15	40	125	20.55	20	-	20	20	R/L			
	2525-5-T15	●		15	40	150	25.55	25	-	25	25	R/L			
	3232-5-T15	●		15	40	170	32.55	32	-	32	32	R/L			
	2020-5-T20	●	●	20	41	125	20.55	20	-	20	20	R/L			
	2525-5-T20	●	●	20	41.2	150	25.55	25	-	25	25	R/L			
	3232-5-T20	●	●	20	41	170	32.55	32	7	32	32	R/L		BHA0620	HW50L
	2525-5-T32	●	●	32	53	150	25.55	25	-	25	25	R/L			
	2020-6-T12	●	●	12	37	125	20.55	20	-	20	20	R/L	KGMN600-□-□ KRMN600-C KGGN600-□-□ KRGN600-□	BHA0616	HW50L
	2525-6-T12	●	●	12	37	150	25.55	25	-	25	25	R/L			
	2525-6-T15	●		15	40	150	25.55	25	-	25	25	R/L			
	3232-6-T15	●		15	40	170	32.55	32	-	32	32	R/L			
	2020-6-T20	●	●	20	41	125	20.55	20	-	20	20	R/L			
	2525-6-T20	●	●	20	41	150	25.55	25	7	25	25	R/L			
	3232-6-T20	●		20	41	170	32.55	32	-	32	32	R/L		BHA0620	HW50L
	2525-6-T32	●		32	53	150	25.55	25	-	25	25	R/L			
	2525-8-T16	●	●	16	46	150	26.05	25	-	25	25	R/L	KGMN800-□-□ KRMN800-C KGGN800-□-□ KRGN800-□	BHA0616	HW50L
	3232-8-T16	●		16	40	170	33.05	32	-	32	32	R/L			
	2525-8-T25	●	●	25	46	150	26.05	25	-	25	25	R/L			
	3232-8-T25	●		25	46	170	33.05	32	7	32	32	R/L		BHA0620	HW50L
	2525-8-T36	●		36	58	150	26.05	25	-	25	25	R/L			
	3232-8-T36	●	●	36	58	170	33.05	32	-	32	32	R/L			

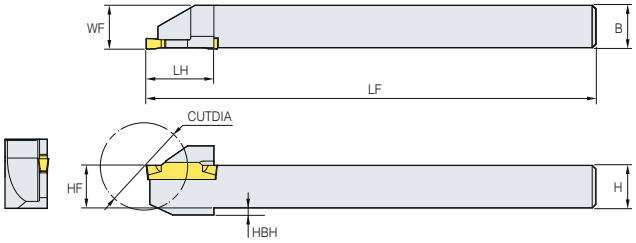
Applicable inserts **C28 ~ C30**

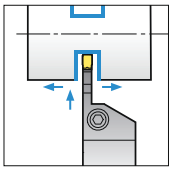
● : Stock item

KGEHR/L-D00A (Auto Tool)

For grooving, turning, parting off machining

KGMN KGGN
KRMN KRGN
KGMR/L





• R type holder

(mm)

Designation		Stock R	Stock L	CUTDIA	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
KGEHR/L	1010-2-D20A	●	●	20	19	125	10.2	10	2	10	10	R/L	KGMN200-□-□ KGMR/L200-□-□ KRMN200-C KGGN200-□-□	ETNA0412	TW15L
	1212-2-D25A	●	●	25	19	125	12.2	12	2	12	12	R/L			
	1414-2-D25A	●	●	25	19	125	14.2	14	-	14	14	R/L			
	1616-2-D32A	●	●	32	25	125	16.2	16	-	16	16	R/L			
	1212-3-D25A	●	●	25	19	125	12.4	12	2	12	12	R/L	KGMN300-□-□ KGMR/L300-□-□ KRMN300-C KGGN300-□-□		
	1616-3-D32A	●	●	32	25	125	16.4	16	-	16	16	R/L			

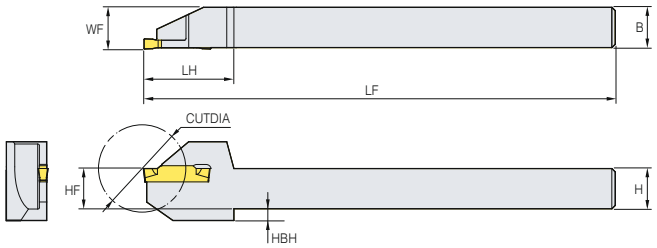
Applicable inserts **C28 ~ C30**

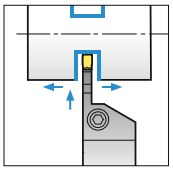
● : Stock item

KGEHR/L-D00B (Auto Tool)

For grooving, turning, parting off machining

KGMN KGGN
KRMN KRGN
KGMR/L





• R type holder

(mm)

Designation		Stock R	Stock L	CUTDIA	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
KGEHR/L	1010-2-D30B	●	●	30	29.6	140	10.2	10	6.6	10	10	R/L	KGMN200-□-□ KGMR/L200-□-□ KRMN200-C KGGN200-□-□	MHA0512	HW40L
	1212-2-D25B	●	●	25	27.1	140	12.2	12	3.5	12	12	R/L			
	1212-2-D30B	●	●	30	29.6	140	12.2	12	3.5	12	12	R/L			
	1616-2-D25B			25	27.1	140	16.2	16	-	16	16	R/L			
	1616-2-D32B	●	●	32	30.6	140	16.2	16	-	16	16	R/L			
	1212-3-D25B	●	●	25	27.1	140	12.4	12	3.5	12	12	R/L	KGMN300-□-□ KGMR/L300-□-□ KRMN300-C KGGN300-□-□		
	1212-3-D32B	●	●	32	30.6	140	12.4	12	3.5	12	12	R/L			
	1616-3-D25B			25	26.96	140	16.4	16	-	16	16	R/L			
	1616-3-D32B	●	●	32	27.1	140	16.4	16	-	16	16	R/L			

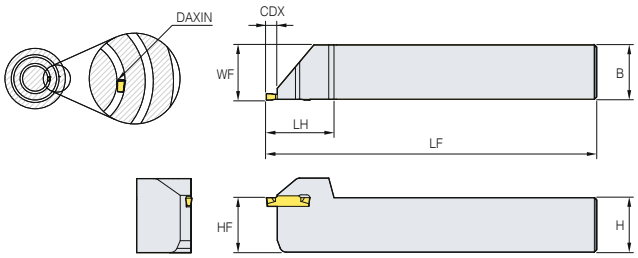
Applicable inserts **C28 ~ C30**

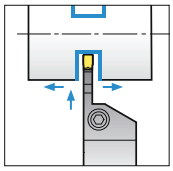
● : Stock item

KGEHR/L-T00

For grooving, turning, face grooving machining

KGMN KRMN
KGGN KRGN





• R type holder

(mm)

Designation		Stock R	Stock L	CDX	LH	LF	WF	HF	HBH	B	H	DAXIN	HAND	Applicable insert	Screw	Wrench
KGEHR/L	1616-3-T00			4.8	31	100	16.4	16	-	16	16	80	R/L	KGMN300-□-□ KRMN300-C KGGN300-□-□ KRGN300-□	MHA0512	HW40L
	2020-3-T00			4.8	31	125	20.4	20	-	20	20	80	R/L			
	2525-3-T00	●	●	4.8	31	150	25.4	25	-	25	25	80	R/L			
	1616-4-T00	●		4.8	31	100	16.4	16	-	16	16	80	R/L	KGMN400-□-□ KRMN400-C KGGN400-□-□ KRGN400-□	BHA0616	HW50L
	2020-4-T00	●		4.8	31	125	20.4	20	-	20	20	80	R/L			
	2525-4-T00	●	●	4.8	31	150	25.4	25	-	25	25	80	R/L			
	2020-6-T00	●		6	36	125	20.55	20	-	20	20	80	R/L	KGMN600-□-□ KRMN600-C KGGN600-□-□ KRGN600-□	BHA0616	HW50L
	2525-6-T00	●		6	36.5	150	25.55	25	-	25	25	80	R/L			

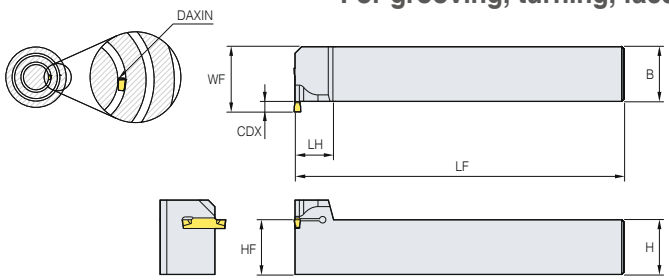
Applicable inserts **C28 ~ C30**

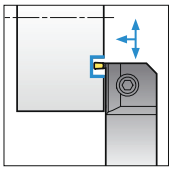
● : Stock item

KGEVR/L-T00

For grooving, turning, face grooving machining

KGMN KRMN
KRGN KGGN





• R type holder

(mm)

Designation		Stock R	Stock L	CDX	LH	LF	WF	HF	B	H	DAXIN	HAND	Applicable insert	Screw	Wrench
KGEVR/L	2020-1.5 -T00	●		3	18	125	24	20	20	20	120	R/L	KGMN150-□-□	MHA0512	HW40L
	2525-1.5 -T00	●		3	18	150	29	25	25	25	120	R/L			
	3232-1.5 -T00	●		3	22	170	36	32	32	32	120	R/L			
	2020-2 -T00	●		3	17.75	125	24	20	20	20	120	R/L	KGMN200-□-□ KRMN200-C KGGN200-□-□-□	MHA0512	HW40L
	2525-2 -T00			3	17.75	150	29	25	25	25	120	R/L			
	3232-2 -T00			3	21.75	170	36	32	32	32	120	R/L			
	2020-2.5 -T00	●		4	18	125	25	20	20	20	80	R/L	KGMN250-□□	MHA0512	HW40L
	2525-2.5 -T00	●		4	18	150	30	25	25	25	80	R/L			
	3232-2.5 -T00	●		4	21.75	170	37	32	32	32	80	R/L			
	2020-3-T00	●		4.8	18	125	25	20	20	20	80	R/L	KGMN300-□-□ KRMN300-C KGGN300-□-□ KRGN300-□	MHA0512	HW40L
	2525-3-T00	●		4.8	18	150	30	25	25	25	80	R/L			
	3232-3 -T00	●		4.8	22	170	37	32	32	32	80	R/L			
	2020-4-T00	●		4.8	19.6	125	25	20	20	20	80	R/L	KGMN400-□-□ KRMN400-C KGGN400-□-□ KRGN400-□	BHA0616	HW50L
	2525-4-T00	●		4.8	19.6	150	30	25	25	25	80	R/L			
	3232-4 -T00	●		4.8	22	170	37	32	32	32	80	R/L			
	2020-5 -T00	●		6	20	125	29.5	20	20	20	60	R/L	KGMN500-□-□ KRMN500-C KGGN500-□-□ KRGN500-□	BHA0616	HW50L
	2525-5 -T00	●		6	20	150	31.5	25	25	25	60	R/L			
	3232-5 -T00	●		6	24	170	38.5	32	32	32	60	R/L			
	2020-6 -T00	●		6	22	125	26.5	20	20	20	60	R/L	KGMN600-□-□ KRMN600-C KGGN600-□-□ KRGN600-□	BHA0616	HW50L
	2525-6-T00	●		6	22	150	31.5	25	25	25	80	R/L			
	3232-6 -T00	●		6	22	170	38.5	32	32	32	60	R/L			
	2525-8 -T00	●		8	24	150	33.5	25	25	25	50	R/L	KGMN800-□-□ KRMN800-C KGGN800-□-□ KRGN800-□	BHA0616	HW50L
	3232-8 -T00	●		8	24	170	40.5	32	32	32	50	R/L			

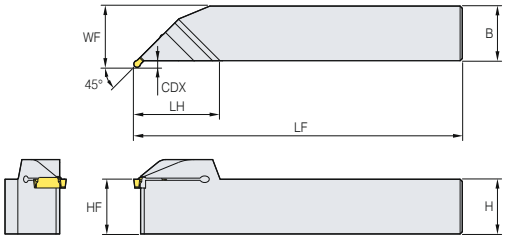
Applicable inserts **C28 ~ C30**

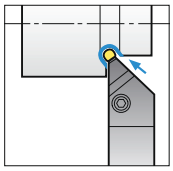
● : Stock item

KGEUR/L

For relief machining

KRMN
KRGN





45°
• R type holder

(mm)

Designation		Stock R	Stock L	CDX	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
KGEUR/L	1616-3			2.8	40	100	19	16	16	16	R/L	KRMN300-C KRGN300-□	MHA0512	HW40L
	2020-3	●		2.8	40	125	23	20	20	20	R/L			
	2525-3	●		2.8	40	150	28	25	25	25	R/L			
	3232-3	●		2.8	40	170	35	32	32	32	R/L			
	1616-4			2.8	40	100	19	16	16	16	R/L	KRMN400-C KRGN400-□	BHA0616	HW50L
	2020-4			2.8	40	125	23	20	20	20	R/L			
	2525-4	●		2.8	40	150	28	25	25	25	R/L			
	3232-4	●		2.8	40	170	35	32	32	32	R/L			
	2020-5			3.3	50	125	23.5	20	20	20	R/L	KRMN500-C KRGN500-□	BHA0616	HW50L
	2525-5	●		3.3	50	150	28.5	25	25	25	R/L			
	3232-5			3.3	50	170	35.5	32	32	32	R/L			
	2020-6	●		3.3	50	125	23.5	20	20	20	R/L	KRMN600-C KRGN600-□	BHA0616	HW50L
	2525-6	●		3.3	50	150	28.5	25	25	25	R/L			
	3232-6	●		3.3	50	170	35.5	32	32	32	R/L			
	2525-8	●		3.3	65	150	30	25	25	25	R/L	KRMN800-C KRGN800-□	BHA0616	HW50L
	3232-8	●		3.3	65	170	37	32	32	32	R/L			

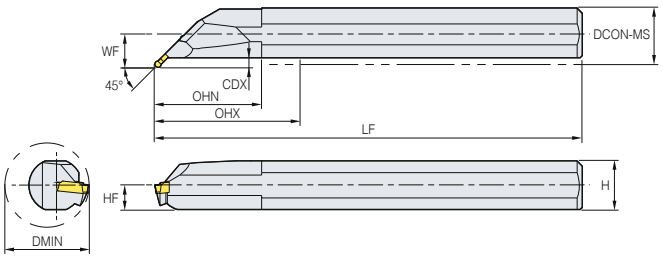
Applicable inserts **C28 ~ C30**

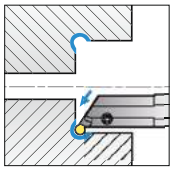
● : Stock item

KGIUR/L

For relief machining

KRMN
KRGN





45°
• R type holder

(mm)

Designation		Stock R	Stock L	CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
KGIUR/L	3520-3			3.5	35	45	150	13	18	20	R/L	KRMN300-C KRGN300-□	MHA0512	HW40L
	4025-3	●		3.5	40	50	200	15.5	23	25	R/L			
	5032-3	●		3.5	50	65	250	19	30	32	R/L			
	3520-4			3.5	35	45	150	13	18	20	R/L	KRMN400-C KRGN400-□	MHA0512	HW40L
	4025-4			3.5	40	50	200	15.5	23	25	R/L			
	5032-4	●		3.5	50	65	250	19	30	32	R/L			
	4025-5	●		3.5	40	50	200	15.5	23	25	R/L	KRMN500-C KRGN500-□	MHA0512	HW40L
	5032-5	●		3.5	50	65	250	19	30	32	R/L			
	4025-6	●		3.5	40	50	200	15.5	23	25	R/L	KRMN600-C KRGN600-□	MHA0512	HW40L
	5032-6	●		3.5	50	65	250	19	30	32	R/L			
	4025-8			6.5	40	50	200	18.5	23	25	R/L	KRMN800-C KRGN800-□	MHA0512	HW40L
	5032-8	●		6.5	50	65	250	22	30	32	R/L			

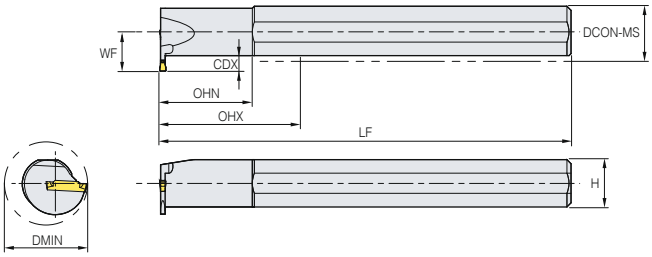
Applicable inserts **C28 ~ C30**

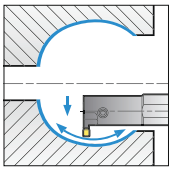
● : Stock item

KGIVR/L

For face grooving machining

KGMI KGMN
KGGN KRMI
KRMN





• R type holder

(mm)

Designation		Stock R	Stock L	CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
KGIVR/L	2016-1.5	●		4	20	35	125	12	15	16	R/L	KGMN150-□-□	MHB0410	HW30L
	2520-1.5	●		6	25	45	150	15.5	18	20	R/L		MHB0410	
	3225-1.5	●		7	32	45	200	19	23	25	R/L		MHA0512	HW40L
	2516-2	●		6.5	25	35	125	14	15	16	R/L	KGMI200-□-T KRMI200-C	MHB0410	HW30L
	2520-2	●		6.5	25	45	150	15	18	20	R/L			
	3225-2	●		7	32	45	200	19	23	25	R/L		MHB0512	HW40L
	2516-2.5	●		6.5	25	35	125	14	15	16	R/L	KGMN250-□-□	MHB0410	HW30L
	2520-2.5	●		6.5	25	45	150	15.5	18	20	R/L			
	3225-2.5	●		7	32	45	200	19	23	25	R/L		MHA0512	HW40L
	2520-3	●		6.5	25	45	150	15.5	18	20	R/L	KGMI300-□-T KRMI300-C	MHB0410	HW30L
	3225-3	●		6.5	32	45	200	19	23	25	R/L		MHA0512	HW40L
	4032-3	●		7	40	55	250	22.5	30	32	R/L		BHA0616	HW50L
	2520-4	●		6.5	25	45	150	15.5	18	20	R/L	KGMI400-□-T KRMI400-C	MHB0410	HW30L
	3225-4	●		7.5	32	45	200	19	23	25	R/L		MHA0512	HW40L
	4032-4	●		7.5	40	55	250	22.5	30	32	R/L		BHA0616	HW50L
	3225-5	●		7.5	32	45	200	19.5	23	25	R/L	KGMN500-□-□ KRMN500-C KGGN500-□-R KGGN500-□-A	MHA0512	HW40L
	4032-5	●		8.5	40	55	250	23.5	30	32	R/L		BHA0616	HW50L
	3225-6	●		7.5	32	45	200	19.5	23	25	R/L	KGMN600-□-□ KRMN600-C KGGN600-□-R KGGN600-□-A	MHA0512	HW40L
	4032-6	●		8.5	40	55	250	23.5	30	32	R/L		BHA0616	HW50L
	4032-8	●		8.5	40	55	250	23.5	30	32	R/L	KGMN800-□-□ KRMN800-C KGGN800-□-R	BHA0616	HW50L
	4540-8	●		8.5	45	70	300	26.5	37	40	R/L		BHA0616	HW50L

Applicable inserts **C28 ~ C30**

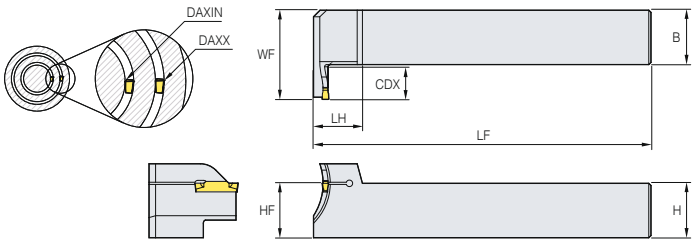
• In case of using external insert instead of internal insert, please check the available insert for each item.

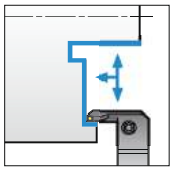
● : Stock item

KGFVR/L

For face grooving machining

KGMN KRMN
KGGN KRGN





• R type holder

(mm)

Designation			Stock R	Stock L	CDX	DAXIN	DAXX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
KGFVR/L	325-	34/50-T10	●		10	34	50	150	36	25	25	25	R/L	KGMN300-□-□ KRMN300-C KGGN300-□-□ KRGN300-□	MHA0512	HW40L
		44/60-T15	●		15	44	60	150	41	25	25	25	R/L			
		54/85-T15	●		15	54	85	150	41	25	25	25	R/L			
	425-	32/50-T15	●		15	32	50	150	41	25	25	25	R/L	KGMN400-□-□ KRMN400-C KGGN400-□-□ KRGN400-□	BHA0616	HW50L
		42/60-T15	●		15	42	60	150	41	25	25	25	R/L			
		44/70-T20	●		20	44	70	150	46	25	25	25	R/L			
		52/85-T15	●		15	52	85	150	41	25	25	25	R/L			
		60/120-T20	●		20	60	120	150	46	25	25	25	R/L			
		112/200-T20	●		20	112	200	150	46	25	25	25	R/L			
	525-	50/80-T20	●		20	50	80	150	46	25	25	25	R/L	KGMN500-□-□ KRMN500-C KGGN500-□-□ KRGN500-□	BHA0616	HW50L
		70/110-T20	●		20	70	110	150	46	25	25	25	R/L			
		100/150-T20	●		20	100	150	150	46	25	25	25	R/L			
		140/200-T20	●		20	140	200	150	46	25	25	25	R/L			
		200-T20	●		20	200	-	150	46	25	25	25	R/L			
	625-	48/85-T20			20	48	85	150	46	25	25	25	R/L	KGMN600-□-□ KRMN600-C KGGN600-□-□ KRGN600-□	BHA0616	HW50L
		73/150-T20	●		20	73	150	150	46	25	25	25	R/L			
		138/250-T20	●		20	138	250	150	46	25	25	25	R/L			
		250-T20	●		20	250	-	150	46	25	25	25	R/L			

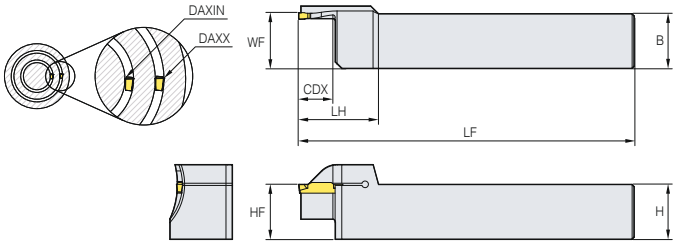
Applicable inserts **C28 ~ C30**

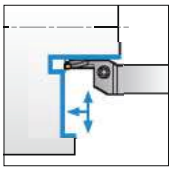
● : Stock item

KGFHR/L

For face grooving machining

KGMN KRMN
KGGN KRGN





• R type holder

(mm)

Designation			Stock R	Stock L	CDX	DAXIN	DAXX	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
KGFHR/L	320-	34/50-T10	●		10	34	50	33	150	20.5	20	20	20	R/L	KGMN300-□-□ KRMN300-C KGGN300-□-□ KRGN300-□	MHA0512	HW40L
		44/70-T15	●		15	44	70	36	150	20.5	20	20	20	R/L			
		64/100-T15	●		15	64	100	36	150	20.5	20	20	20	R/L			
	325-	34/50-T10	●		10	34	50	33	150	25.6	25	25	25	R/L			
		44/70-T15	●		15	44	70	36	150	25.6	25	25	25	R/L			
		64/100-T15	●		15	64	100	36	150	25.6	25	25	25	R/L			
	420-	34/50-T16	●		16	34	50	40	150	20.5	20	20	20	R/L	KGMN400-□-□ KRMN400-C KGGN400-□-□ KRGN400-□	BHA0616	HW50L
		42/70-T16	●		16	42	70	40	150	20.5	20	20	20	R/L			
		62/120-T16	●		16	62	120	40	150	20.5	20	20	20	R/L			
		112/200-T16	●		16	112	200	40	150	20.5	20	20	20	R/L			
	425-	34/50-T20	●		20	34	50	41	150	25.6	25	25	25	R/L			
		40/60-T10	●		10	40	60	33	150	25.6	25	25	25	R/L			
		44/70-T20	●		20	44	70	39	150	25.6	25	25	25	R/L			
		84/92-T20	●		20	84	92	39	150	25.6	25	25	25	R/L			
		60/120-T20	●		20	60	120	39	150	25.6	25	25	25	R/L			
		112/200-T20	●		20	112	200	39	150	25.6	25	25	25	R/L			
		200-T20	●		20	200	-	41	150	25.6	25	25	25	R/L			
	525-	50/80-T15	●		15	50	80	38	150	25.6	25	25	25	R/L	KGMN500-□-□ KRMN500-C KGGN500-□-□ KRGN500-□	BHA0616	HW50L
		50/80-T25	●		25	50	80	44	150	25.6	25	25	25	R/L			
		70/110-T15	●		15	70	110	38	150	25.6	25	25	25	R/L			
		70/110-T25	●		25	70	110	44	150	25.6	25	25	25	R/L			
		100/150-T25	●		25	100	150	44	150	25.6	25	25	25	R/L			
		140/200-T25	●		25	140	200	44	150	25.6	25	25	25	R/L			
		190/220-T10	●		25	190	220	37	150	25.6	25	25	25	R/L			
		200-T25	●		25	200	-	44	150	25.6	25	25	25	R/L			
	625-	170/190-T10	●		3.3	170	190	37	150	25	150	25	25	R/L	KGMN600-□-□ KRMN600-C KGGN600-□-□ KRGN600-□	BHA0616	HW50L
		190/220-T10	●		10	190	220	37	150	25.6	25	25	25	R/L			

Applicable inserts **C28 ~ C30**

● : Stock item

KGT Blades for Parting off

- Parting application with the use of existing KGT inserts
- Economical machining with a double sided insert
- Specially designed slot for strong and stable clamping
- Easy insert change with the use of an exclusive wrench

Code system

KGTB	30	32	(S)
KGTB system	Cutting edge width	Blade height	S: Single pocket

How to clamp insert

① Insert the pin of wrench into the hole of blade.

② Clamp the insert on its seat after turning the handle to 45˚~160˚ for loosening the seat.

③ Finish clamp by removing the wrench after moving it back to its original state.

KGTB

KGMN
KGGN

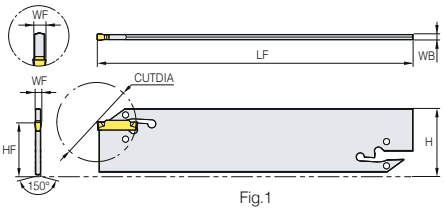


Fig.1

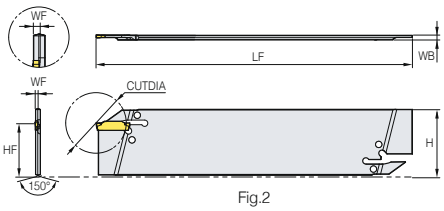


Fig.2

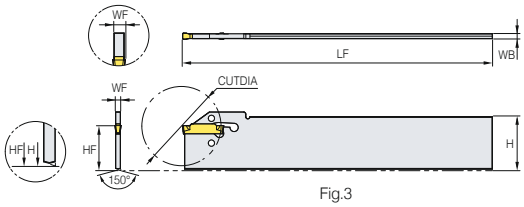


Fig.3

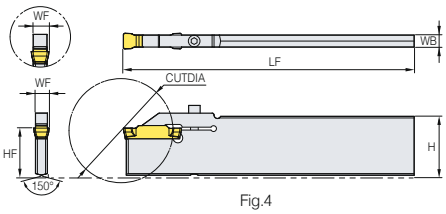


Fig.4

(mm)

Designation		Stock	LF	WF	WB	HF	H	HAND	ØD CUTDIA(2)	ØD CUTDIA(3)	Applicable insert	Wrench	Fig.
KGTB	1526S		151	1.3	2.4	21	26	N	-	26	KG□□150-□-□	EW1203 (Separately ordered)	4
	1532	●	151	1.3	2.4	25	32	N	-	26	KG□□150-□-□		1
	2026S		151	1.9	2.4	21	26	N	50	39	KG□□200-□-□ KG□□200S-□-R(4)		4
	2032	●	151	1.9	2.4	25	32	N	50	39	KG□□200-□-□ KG□□200S-□-R(4)		1
	3026S	●	151	2.7	2.4	21	26	N	100	39	KG□□300-□-□ KG□□300S-□-R(4)		4
	3032	●	151	2.7	2.4	25	32	N	100	39	KG□□300-□-□ KG□□300S-□-R(4)		2
	4026S		151	3.6	3.2	21	26	N	100	39	KG□□400-□-□ KG□□400S-□-R(4)		4
	4032	●	151	3.6	3.2	25	32	N	100	39	KG□□400-□-□ KG□□400S-□-R(4)		2
	5032	●	151	4.5	4	25	32	N	120	49	KG□□500-□-□ KG□□500S-□-R(4)		2
	6032	●	151	5.6	5.2	25	32	N	120	49	KG□□600-□-□ KG□□600S-□-R(4)		2
	8032S(1)	●	151.5	7.1	6.2	25	32	N	80	59	KG□□800-□-□ KG□□800S-□-R(4)	HW30L	3

Applicable inserts **C28 ~ C30**

(1) Screw clamping (2) 1 corner use (3) 2 corner use (4) 1 corner insert ● : Stock item

Universal tools for Grooving / Parting Off / Turning

MGT Plus /MGT

- High chipping resistance and fracture resistance
- Excellent chip control
- Additional edge treatment for its consistency
- Applicable for various MGT holders

Code system

• Insert

PG	M	N	300	-	04	-	MM
・MGT Plus Grooving ・MGT Grooving	**Tolerance** M : Pressed class	**Hand** N : Neutral	**Width of cutting edge** 200 : 2.00 mm 300 : 3.00 mm 400 : 4.00 mm		**Nose R** 04 : 0.4 mm		**Chip Breaker** MM / GM

• Insert (Round)

PR	M	N	300	-	RM
・MGT Plus Grooving Round ・MGT Grooving Round	**Tolerance** M : Pressed class	**Hand** N: Neutral	**Width of cutting edge** 200 : 2.00 mm 300 : 3.00 mm 400 : 4.00 mm		**Chip Breaker** RM

• Shank (External)

MG	E	H	R	25	25	-	3	-	T20
・MGT Grooving	**Use** E : External	**Holder Type** H : Horizontal V : Vertical U : Under cut	**Hand** R : Right-handed L : Left-handed	**Shank height** 25 : 25 mm 32 : 32 mm	**Shank width** 25 : 25 mm 32 : 32 mm		**Width of insert cutting edge** 3 : 3.00 mm		**Max. depth of cut** T20 : 20 mm

• Shank (Internal)

MG	I	V	R	25	20	-	3
・MGT Grooving	**Use** I : Internal	**Holder Type** V : Vertical U : Under cut	**Hand** R : Right-handed L : Left-handed	**Min. cutting dia.** 25 : 25 mm	**Shank dia.** 20 : 20 mm 25 : 25 mm		**Width of insert cutting edge** 3 : 3.00 mm

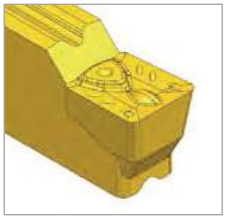
• Shank (Facing)

MG	F	H	R	3	25	-	44	/	70	-	T20
・MGT Grooving	**Use** F : Facing	**Holder Type** H : Horizontal V : Vertical	**Hand** R : Right-handed L : Left-handed	**Width of insert cutting edge** 3 : 3.00 mm	**Shank height, Shank width** 25 : 25 mm 32 : 32 mm		**Min. cutting dia.** 44 : 44 mm		**Max. cutting dia.** 70 : 70 mm		**Max. depth of cut** T15 : 15 mm

Features of Chip breaker

◎: 1st recommendation ○: 2nd recommendation

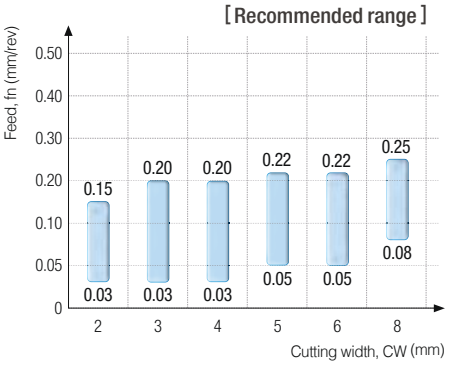
MM Multi Medium



- For grooving, parting and turning
- Bumps on the rake surface
- Straight cutting edge
- Various workpieces

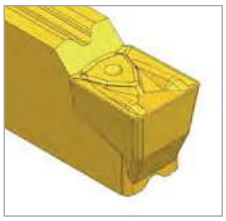
Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	○	◎			○	○			○	○	

[Recommended range]



Recommended workpiece				
P	M	K	N	S
◎	○	○		○

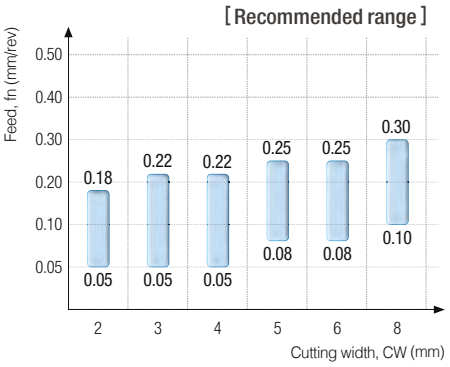
GM Groove Medium



- For grooving and parting
- Straight cutting edge
- Bumps on the rake surface
- Various workpieces
- High depth of cut machining
- For Hard-to-cut material Cutting

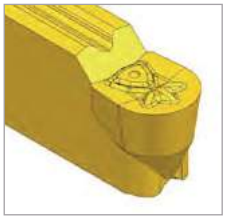
Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
◎	◎				○				○		

[Recommended range]



Recommended workpiece				
P	M	K	N	S
◎	◎	○		○

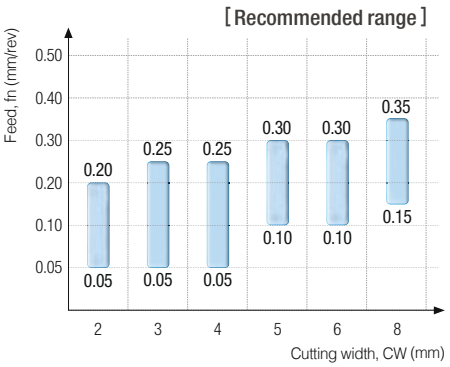
RM Relief Medium



- For copying and relief cutting
- Round cutting edge
- Bumps on the rake surface
- Excellent surface finish

Recommended cutting											
External					Internal				Facing		Special
Grooving	Parting	Turning	Copying	Relief	Grooving	Turning	Copying	Relief	Grooving	Turning	
○			◎	◎			◎	◎			

[Recommended range]

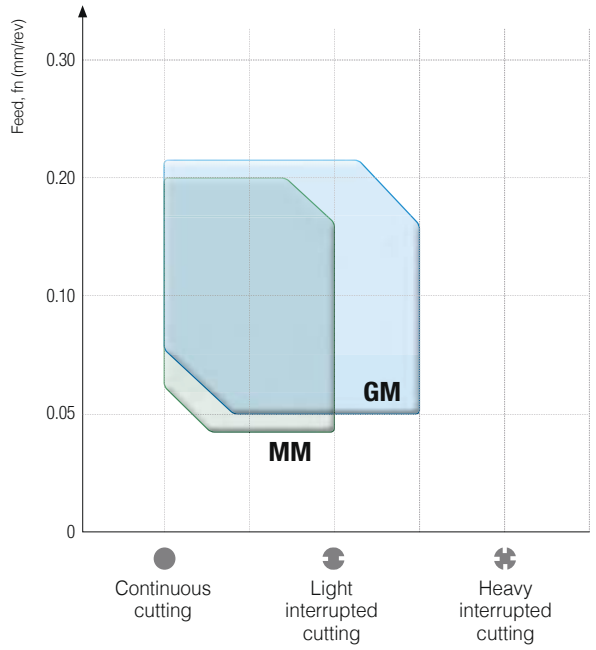


Recommended workpiece				
P	M	K	N	S
◎	○	○		○

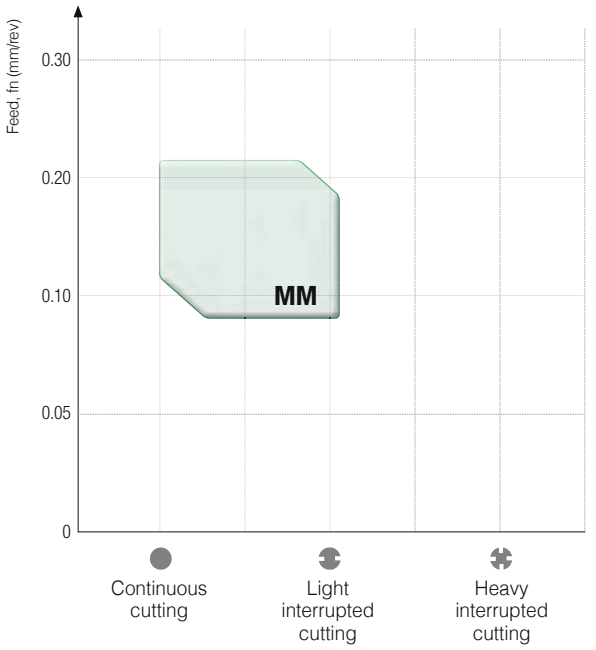
Cutting range

Cutting width (mm) = Based on 3

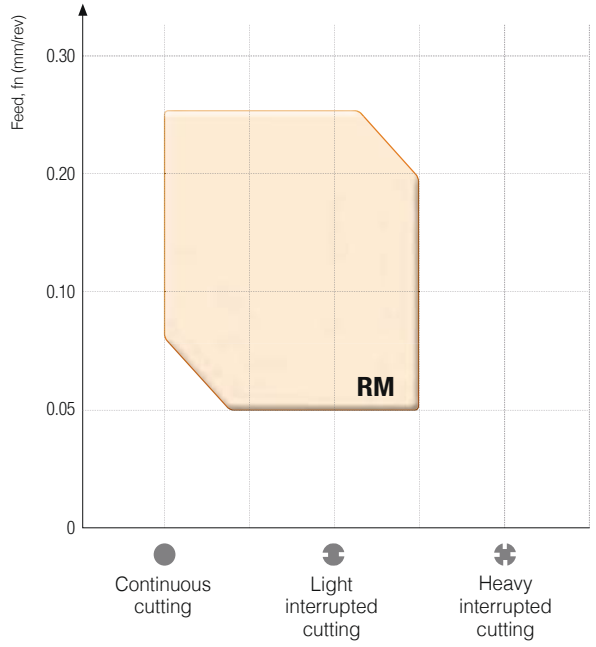
Grooving



Turning



Profile



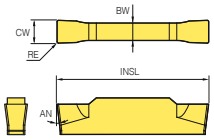
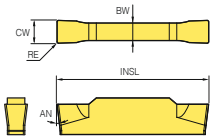
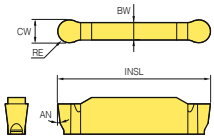
Recommended cutting conditions

Cutting width (mm) = Based on 3

Workpiece						Grade					Chip breaker				
						CVD		PVD			Grooving			Turning	
ISO	Workpiece material		ISO	AISI	Brinell hardness (HB)	NC3225	NC3235	PC3035	PC5300	PC9030	MM	GM	RM	MM	RM
						vc (m/min)					fn (mm/rev)			fn (mm/rev)	
P	Carbon steel	C = 0.25%	C25	1025	125	180	140	110	110	110	0.20	0.22	0.25	0.20	0.25
						275	**215**	**170**	**170**	**170**	**0.12**	**0.14**	**0.15**	**0.16**	**0.20**
						370	290	230	230	230	0.03	0.05	0.05	0.12	0.15
		C = 0.35%	C35	1035	160	170	130	100	100	100	0.20	0.22	0.25	0.20	0.25
						255	**200**	**155**	**155**	**155**	**0.12**	**0.14**	**0.15**	**0.16**	**0.20**
						340	270	210	210	210	0.03	0.05	0.05	0.12	0.15
		C = 0.45%	C45	1045	170	150	120	90	90	90	0.20	0.22	0.25	0.20	0.25
						235	**185**	**145**	**145**	**145**	**0.12**	**0.14**	**0.15**	**0.16**	**0.20**
						320	250	200	200	200	0.03	0.05	0.05	0.12	0.15
	Low alloy steel ≤ 5%	Non-hardened	42CrMo4	4140	180	130	100	80	80	80	0.20	0.22	0.25	0.18	0.23
						195	**155**	**120**	**120**	**120**	**0.12**	**0.14**	**0.15**	**0.14**	**0.18**
						260	210	160	160	160	0.03	0.05	0.05	0.10	0.13
		Hardened and tempered	-	4145	350	80	60	50	50	50	0.20	0.22	0.25	0.18	0.23
						115	**90**	**75**	**75**	**75**	**0.12**	**0.14**	**0.15**	**0.14**	**0.18**
						150	120	100	100	100	0.03	0.05	0.05	0.10	0.13
	High alloy steel < 5%	Annealed	-	D2	200	100	80	60	60	60	0.20	0.22	0.20	0.18	0.23
						150	**120**	**90**	**90**	**90**	**0.12**	**0.14**	**0.12**	**0.14**	**0.18**
						200	160	120	120	120	0.03	0.05	0.03	0.10	0.13
		Hardened tool steel	X40CrMoV5-1	H13	352	80	60	50	50	50	0.20	0.22	0.20	0.18	0.23
						120	**95**	**75**	**75**	**75**	**0.12**	**0.14**	**0.12**	**0.14**	**0.18**
						160	130	100	100	100	0.03	0.05	0.03	0.10	0.13
M	Austenite series		X5CrNi18-9	304	160 ~ 180	-	100	-	80	80	0.15	0.15	0.18	0.18	0.23
						-	**145**	-	**115**	**115**	**0.09**	**0.09**	**0.13**	**0.14**	**0.18**
						-	190	-	150	150	0.03	0.03	0.08	0.10	0.13
			X5CrNiMo17-12-2	316	160 ~ 180	-	100	-	80	80	0.15	0.15	0.18	0.18	0.23
						-	**145**	-	**115**	**115**	**0.09**	**0.09**	**0.13**	**0.14**	**0.18**
						-	190	-	150	150	0.03	0.03	0.08	0.10	0.13
K	Gray cast iron	Low tensile strength	150	No25B	≤ 212	-	-	-	100	-	0.25	0.25	0.25	0.18	0.23
						-	-	-	**150**	-	**0.17**	**0.17**	**0.15**	**0.14**	**0.18**
						-	-	-	200	-	0.09	0.09	0.05	0.10	0.13
		High tensile strength	250 350	No35B No50B	≤ 248 ≤ 277	-	-	-	80	-	0.25	0.25	0.25	0.18	0.23
						-	-	-	**125**	-	**0.17**	**0.17**	**0.15**	**0.14**	**0.18**
						-	-	-	170	-	0.09	0.09	0.05	0.10	0.13
	Ductile cast iron	Ferritic	500-7	65-45-12	170 ~ 241	-	-	-	70	-	0.25	0.25	0.25	0.20	0.25
						-	-	-	**105**	-	**0.17**	**0.17**	**0.15**	**0.16**	**0.20**
						-	-	-	140	-	0.09	0.09	0.05	0.12	0.15
		Pearlitic	600-3	80-55-06	192 ~ 269	-	-	-	50	-	0.25	0.25	0.25	0.20	0.25
						-	-	-	**80**	-	**0.17**	**0.17**	**0.15**	**0.16**	**0.20**
						-	-	-	110	-	0.09	0.09	0.05	0.12	0.15
		Martensitic	700-2	100-70-03	229 ~ 302	-	-	-	50	-	0.20	0.22	0.20	0.20	0.25
						-	-	-	**80**	-	**0.12**	**0.14**	**0.12**	**0.16**	**0.20**
						-	-	-	110	-	0.03	0.05	0.03	0.12	0.15
S	Inconel		-	-	200	-	-	-	20	-	0.10	0.10	0.12	0.13	0.16
						-	-	-	**35**	-	**0.06**	**0.06**	**0.10**	**0.11**	**0.14**
						-	-	-	50	-	0.03	0.03	0.08	0.09	0.12
			-	-	250 350	-	-	-	20	-	0.10	0.10	0.12	0.13	0.16
						-	-	-	**35**	-	**0.06**	**0.06**	**0.10**	**0.11**	**0.14**
						-	-	-	50	-	0.03	0.03	0.08	0.09	0.12
	Titanium alloy		-	-	3400	-	-	-	60	-	0.10	0.10	0.18	0.18	0.20
						-	-	-	**80**	-	**0.06**	**0.06**	**0.13**	**0.14**	**0.18**
						-	-	-	100	-	0.03	0.03	0.08	0.10	0.16
			-	-	950	-	-	-	30	-	0.10	0.10	0.18	0.18	0.20
						-	-	-	**45**	-	**0.06**	**0.06**	**0.13**	**0.14**	**0.18**
						-	-	-	60	-	0.03	0.03	0.08	0.10	0.16

MGT Plus / MGT Applicable inserts

※ AN = 7°

Application	Picture	Designation		Coated					Dimension (mm)				Geometry
				NC3225	NC3235	PC3035	PC5300	PC9030	CW	RE	INSL	BW	
Grooving · Turning	PGMN-MM	PGMN	200-02-MM	●	●	●	●	●	2.00	0.2	16	1.6	
			300-04-MM	●	●	●	●	●	3.00	0.4	21	2.35	
			400-04-MM	●	●	●	●	●	4.00	0.4	21	3.3	
			500-08-MM	●	●		●	●	5.00	0.8	26	4.1	
			600-08-MM	●	●		●	●	6.00	0.8	26	5.0	
			800-08-MM	●	●		●	●	8.00	0.8	31	6.0	
Grooving	PGMN-GM	PGMN	150-015-GM	●	●	●	●	●	1.50	0.15	16	1.2	
			200-02-GM	●	●	●	●	●	2.00	0.2	16	1.6	
			250-02-GM	●	●	●	●	●	2.50	0.2	18.5	2.0	
			300-03-GM	●	●	●	●	●	3.00	0.3	21	2.35	
			400-03-GM	●	●	●	●	●	4.00	0.3	21	3.3	
Reliefing Profiling	PRMN-RM	PRMN	200-RM	●	●	●	●	●	2.00	1.0	16	1.6	
			300-RM	●	●	●	●	●	3.00	1.5	21	2.35	
			400-RM	●	●	●	●	●	4.00	2.0	21	3.3	
			500-RM	●	●		●	●	5.00	2.5	26	4.1	
			600-RM	●	●				6.00	3.0	26	5.0	
			800-RM	●	●				8.00	4.0	31	6.0	

●: Stock item

Geometry of chip breaker

MGM(G)N-M

- Specially designed chip breaker allows a smoother chip flow versus conventional flat-top geometries through the use of a central chip breaker
- Specially placed convex dots assists with chip control in external machining, for a smoother chip flow
- Chip breaker designed for turning & grooving applications

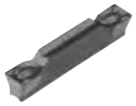
MGMN-G

- Specially designed chip breaker allows narrower chips to promote better chip flow
- Specifically designed for grooving applications

MRMN-M

- Full radius geometry for applications that require profiling
- Available for relief machining

MFMN300



- Specially designed chip breaker allows narrower chips to promote better chip flow
- Chip breaker specially designed for face grooving

MRGN-A

- Specially designed high positive geometry, ideal for machining aluminum
- The chip breaker's super buffed, high rake angle allows optimal chip flow of aluminum

MGMR-PS

- Sharply designed cutting edge.
- Recommended in machining low carbon steel and stainless steel
- Specially designed chip breaker allows narrower chips to promote better chip flow.
- Able to machine Feed rates and small diameter cutting

MGMR-PT

- Stronger cutting edge with a negative land for tougher applications
- Able to machine at high feed rate and bar stock
- Chip breaker design helps narrows chips for better flow

MGMN-L

- Sharp cutting edge
- Low cutting resistance
- For auto CNC machine
- For small diameter

MGMN-R

- Strong cutting edge
- For high feed rate machining

MGMN-T

- For turning & grooving
- Reduced chip width & smooth chip control by dot designed on the top corner

MGGN-A

- Smooth chip flow
- Prevent built-up edge face grooving

Parting off (MGMN / MGMR/L)

Workpiece	Cutting Speed (vc = m/min)								Feed (fn = mm/rev)				
	CVD				PVD			Uncoated	Cutting width (mm)				
	NC3120	NC3030	NCM325	NC5330	PC8110	PC5300	PC6510	ST30A	2	3	4	5	6
SM□□C	80~180			80~180		80~180			0.02~0.15	0.03~0.20	0.08~0.30	0.10~0.40	0.12~0.50
SCM	70~150	70~150	70~150	70~150		70~150			0.02~0.15	0.03~0.20	0.08~0.30	0.10~0.40	0.12~0.50
GC/GCD				50~100			50~100	50~100	0.05~0.12	0.10~0.25	0.10~0.30	0.10~0.35	0.10~0.40
STS			50~120	50~120	50~120	60~140			0.02~0.10	0.03~0.15	0.08~0.25	0.10~0.35	0.12~0.40
Non-ferrous metal (Al, Copper)								200~450	0.05~0.10	0.05~0.20	0.05~0.25	0.05~0.30	0.05~0.35

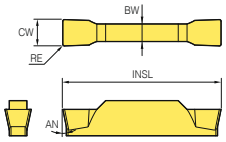
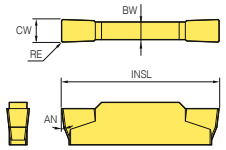
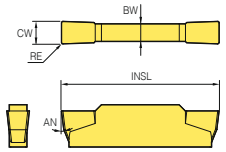
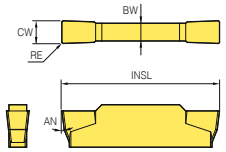
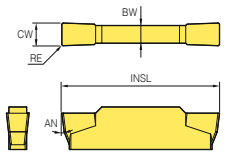
Facing (FGD / FGM / FMM / MFMN / MGMN)

Workpiece	Cutting Speed (vc = m/min)							Feed (fn = mm/rev)		
	CVD				PVD		Uncoated	Cutting width (mm)		
	NC6310	NC3030	NC5330	NC3120	PC215K	PC8110 / PC5300	H01	3	4	5
SM□□C			100~160	100~160				0.05~0.10	0.05~0.12	0.05~0.15
SCM		50~130	50~130	50~130				0.05~0.10	0.05~0.12	0.05~0.15
GC/GCD	120~150		120~150		120~150			0.05~0.10	0.05~0.12	0.05~0.15
STS			60~150			60~150		0.05~0.10	0.05~0.12	0.05~0.15
Non-ferrous metal (Al, Copper)							200~800	0.05~0.15	0.08~0.15	0.08~0.15

Grooving, Turning (MGMN / MRMN)

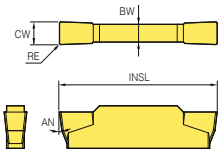
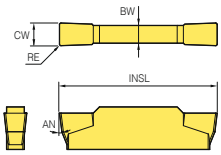
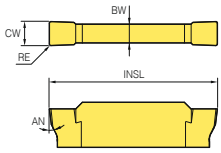
Workpiece	Cutting Speed (vc = m/min)								Feed (fn = mm/rev)					
	CVD			PVD		Cermet	Uncoated		Cutting width (mm)					
	NC3120	NC3030	NC5330	PC215K	PC5300	CN2500	ST30A	ST20	0.5~1.0	1.0~2.0	2~3	3~4	4~5	6~8
SM□□C	80~200		80~200		80~180	80~120		80~120	0.03~0.08	0.04~0.09	0.05~0.1	0.05~0.12	0.05~0.15	0.05~0.2
SCM	80~180	80~180	80~180		80~160	80~120	80~120	80~120	0.03~0.07	0.04~0.08	0.05~0.08	0.05~0.1	0.05~0.12	0.05~0.15
GC/GCD			60~130		60~130				0.03~0.07	0.04~0.08	0.05~0.08	0.05~0.1	0.05~0.10	0.05~0.12
STS			60~100	60~100			60~100		0.03~0.08	0.04~0.09	0.05~0.10	0.05~0.12	0.05~0.12	0.05~0.15
Non-ferrous metal (Al, Copper)				150~300			150~400		0.05~0.12	0.05~0.15	0.05~0.15	0.08~0.15	0.08~0.15	0.10~0.20

Applicable insert

Application	Picture	Designation		Coated							Uncoated	Dimensions (mm)							Configuration
				NC3120	NC3225	NC3030	NC5330	NC6315	PC5300	PC8110	PC9030	H01	SSC	CW	RE	BW	INSL	AN	HAND	
Face Grooving	MFMN	MFMN	300				●						30	3	0.2	2	18	12	N	
Grooving · Turning	MGGN-M		300-02-M										30	3	0.2	2.35	21	7	N	
			300-04-M										30	3	0.4	2.35	21	7	N	
			300-08-M										30	3	0.8	2.35	21	7	N	
			400-02-M										40	4	0.2	3.3	21	7	N	
			400-04-M										40	4	0.4	2.35	21	7	N	
			400-08-M										40	4	0.8	2.35	21	7	N	
			500-02-M										50	5	0.2	4.1	26	7	N	
			500-04-M										50	5	0.4	2.35	26	7	N	
			500-08-M										50	5	0.8	2.35	26	7	N	
			600-02-M										60	6	0.2	5	26	7	N	
			600-04-M										60	6	0.4	2.35	26	7	N	
			600-08-M										60	6	0.8	2.35	26	7	N	
Grooving	MGMN-G	MGMN	150-G		●	●			●	●	●		15	1.5	0.15	1.2	16	7	N	
			200-G	●	●	●			●	●	●		20	2	0.2	1.6	16	7	N	
			250-G			●			●	●			25	2.5	0.2	2	18.5	7	N	
			300-G	●	●	●	●		●	●			30	3	0.3	2.35	21	7	N	
			400-G	●		●			●	●			40	4	0.3	3.3	21	7	N	
			500-G										50	5	0.5	4.1	26	7	N	
			600-G										60	6	0.8	5	26	7	N	
Grooving · Turning	MGMN-M	MGMN	200-M	●	●	●	●		●	●	●		20	2	0.2	1.6	16	7	N	
			250-M	●	●	●			●	●			25	2.5	0.2	2	18.5	7	N	
			300-02-M				●						30	3	0.2	2.35	21	7	N	
			300-M	●	●	●	●	●	●	●	●		30	3	0.4	2.35	21	7	N	
			350-03-M										40	4	0.3	2.9	21	7	N	
			400-02-M										40	4	0.2	3.3	21	7	N	
			400-M	●	●	●	●	●	●	●	●		40	4	0.4	3.3	21	7	N	
			500-04-M			●							50	5	0.4	4.1	26	7	N	
			500-M	●	●	●	●	●			●		50	5	0.8	4.1	26	7	N	
			600-M	●	●	●	●	●					60	6	0.8	5	26	7	N	
			800-M			●	●						80	8	0.8	6	31	7	N	
Grooving	MGMN-L	MGMN	200-02-L										20	2	0.2	1.6	16	7	N	
			200-04-L										20	2	0.4	1.6	16	7	N	
			250-02-L										25	2.5	0.2	2	18.5	7	N	
			300-02-L						●				30	3	0.2	2.35	21	7	N	
			300-04-L										30	3	0.4	2.35	21	7	N	
			400-02-L						●				40	4	0.2	3.3	21	7	N	
			400-04-L										40	4	0.4	3.3	21	7	N	
			500-03-L										50	5	0.3	4.1	26	7	N	
			500-04-L						●				50	5	0.4	4.1	26	7	N	

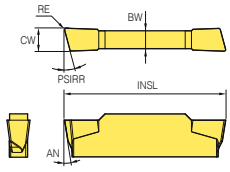
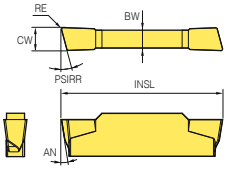
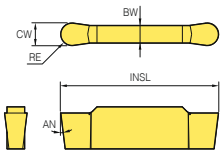
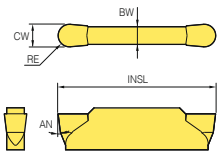
● : Stock item

Applicable insert

Application	Picture	Designation		Coated							Uncoated		Dimensions (mm)							Configuration
				NC3120	NC3225	NC3030	NC5330	NC6315	PC5300	PC8100	PC9030	H01	H05	SSC	CW	RE	BW	INSL	AN	HAND	
Grooving · Parting off	MGMN-R	MGMN	150-015-R											15	1.5	0.15	1.2	16	7	N	
			200-02-R											20	2	0.2	1.6	16	7	N	
			200-04-R											20	2	0.4	1.6	16	7	N	
			250-02-R											25	2.5	0.2	2	18.5	7	N	
			300-02-R			●			●					30	3	0.2	2.35	21	7	N	
			300-04-R											30	3	0.4	2.35	21	7	N	
			400-02-R			●			●					40	4	0.2	3.3	21	7	N	
			400-04-R											40	4	0.4	3.3	21	7	N	
			500-04-R			●			●					50	5	0.4	4.1	26	7	N	
			500-08-R											50	5	0.8	4.1	26	7	N	
			600-04-R											60	6	0.4	5	26	7	N	
			600-08-R											60	6	0.8	5	26	7	N	
Grooving · Turning	MGMN-T	MGMN	150-015-T											15	1.5	0.15	1.2	16	7	N	
			200-T											20	2	0.2	1.6	16	7	N	
			300-T			●			●					30	3	0.4	2.35	21	7	N	
			400-T			●			●					40	4	0.4	3.3	21	7	N	
			500-04-T											50	5	0.4	4.1	26	7	N	
			500-T						●					50	5	0.8	4.1	26	7	N	
			600-08-T											60	6	0.8	5	26	7	N	
Grooving	MGGN-A	MGGN	300-02-A											30	3	0.2	2.35	21	7	N	
			300-04-A											30	3	0.4	2.35	21	7	N	
			300-08-A											30	3	0.8	2.35	21	7	N	
			400-02-A											40	4	0.2	3.3	21	7	N	
			400-04-A											40	4	0.4	3.3	21	7	N	
			400-08-A											40	4	0.8	3.3	21	7	N	
			500-02-A											50	5	0.2	4.1	26	7	N	
			500-04-A											50	5	0.4	4.1	26	7	N	
			500-08-A											50	5	0.8	4.1	26	7	N	

● : Stock item

Applicable insert

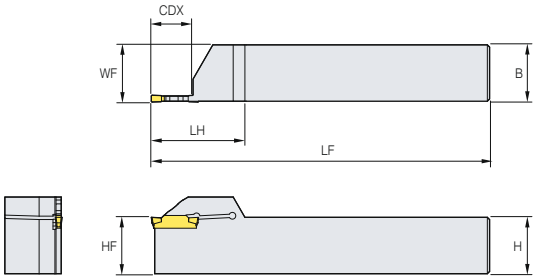
Application	Picture	Designation	Coated						Uncoated		Dimensions (mm)								Configuration
			NC3120	NC3225	NC3030	NC5330	NC6315	PC5300	PC8100	PC9030	H01	H05	SSC	CW	PSIRL	PSIRR	RE	INSL	BW	AN	HAND	
Parting off	MGMR-PS	MGMR 300-6D-PS											30	3	-	6	0.2	21.2	2.35	7	R	
		300-8D-PS											30	3	-	8	0.2	21.2	2.35	7	R	
		300-15D-PS											30	3	-	15	0.2	21.2	2.35	7	R	
		400-4D-PS											40	4	-	4	0.3	21.2	3.3	7	R	
		500-4D-PS											50	5	-	4	0.3	26.2	4.1	7	R	
	MGML-PS	MGML 300-6D-PS											30	3	6	-	0.2	21.2	2.35	7	L	
		300-8D-PS											30	3	8	-	0.2	21.2	2.35	7	L	
		300-15D-PS											30	3	15	-	0.2	21.2	2.35	7	L	
		400-4D-PS											40	4	4	-	0.3	21.2	3.3	7	L	
		500-4D-PS											50	5	4	-	0.3	26.2	4.1	7	L	
Parting off	MGMR-PT	MGMR 200-6D-PT						●					20	2	-	6	0.2	16.2	1.6	7	R	
		300-6D-PT											30	3	-	6	0.2	21.2	2.35	7	R	
		300-8D-PT	●										30	3	-	8	0.2	21.2	2.35	7	R	
		300-15D-PT											30	3	-	15	0.2	21.2	2.35	7	R	
		400-4D-PT											40	4	-	4	0.3	21.2	3.3	7	R	
		500-4D-PT											50	5	-	4	0.3	26.2	4.1	7	R	
	MGML-PT	MGML 200-6D-PT											20	2	6	-	0.2	16.2	1.6	7	L	
		300-6D-PT				●							30	3	6	-	0.2	21.2	2.35	7	L	
		300-8D-PT											30	3	8	-	0.2	21.2	2.35	7	L	
		300-15D-PT											30	3	15	-	0.2	21.2	2.35	7	L	
		400-4D-PT											40	4	4	-	0.3	21.2	3.3	7	L	
		500-4D-PT											50	5	4	-	0.3	26.2	4.1	7	L	
Aluminum	MRGN-A	MRGN 300-A											30	3	-	-	1.5	21	2.35	7	N	
		400-A									●		40	4	-	-	2	21	3.3	7	N	
		500-A											50	5	-	-	2.5	26	4.1	7	N	
		600-A									●		60	6	-	-	3	26	5	12	N	
		800-A									●		80	8	-	-	4	31	6	12	N	
Reliefing Profiling	MRMN-M	MRMN 200-M	●	●	●					●			20	2	-	-	1	16	1.6	7	N	
		300-M	●	●	●	●		●		●			30	3	-	-	1.5	21	2.35	7	N	
		400-M	●	●	●	●				●			40	4	-	-	2	21	3.3	7	N	
		500-M			●			●					50	5	-	-	2.5	26	4.1	7	N	
		600-M		●	●	●							60	6	-	-	3	26	5	7	N	
		800-M			●	●							80	8	-	-	4	31	6	7	N	

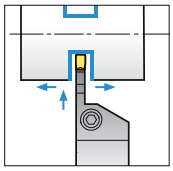
● : Stock item

MGEHR/L

For grooving, turning, parting off, relief, Profiling machining

PGMN PRMN MGMN MGGN MRGN MGMR MRMN





• R type holder

(mm)

Designation		Stock R	Stock L	CDX	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
MGEHR/L	1616-1.5	●	●	14	36.5	100	16.2	16	-	16	16	R/L	PGMN150-□-□ MGMN150-G	LTX0514	TW20L
	2020-1.5	●	●	14	36.5	125	20.2	20	-	20	20	R/L			
	2525-1.5	●	●	14	36.5	150	25.2	25	-	25	25	R/L			
	1212-2	●		14	32	100	12.25	12	-	12	12	R/L	PGMN200-□-□ PRMN200-□ MGMN200-G MGMN200-M MGMR200-□□-□□	MHA0512	HW40L
	1616-2	●	●	14	36.5	100	16.25	16	-	16	16	R/L			
	2020-2	●	●	14	36.5	125	20.25	20	-	20	20	R/L			
	2525-2	●	●	14	36.5	150	25.25	25	-	25	25	R/L			
	1616-2.5	●	●	16	39	100	16.3	16	-	16	16	R/L	PGMN250-□-□ MGMN250-G MGMN250-M	MHA0512	HW40L
	2020-2.5	●	●	16	39	125	20.3	20	-	20	20	R/L			
	2525-2.5	●	●	16	39	150	25.3	25	-	25	25	R/L			
	1616-3	●	●	18	41.5	100	16.35	16	-	16	16	R/L	PGMN300-□-□ PRMN300-□ MGMN300-M/T MGGN300-□□-M MRMN300-M MGMR300-□□-□□ MGMN300-□□-L/R	BHA0616	HW50L
	2020-3-T10	●		10	41.5	125	20.35	20	-	20	20	R/L			
	2020-3	●	●	18	41.5	125	20.35	20	-	20	20	R/L			
	2525-3-T10	●	●	10	41.5	150	25.4	25	-	25	25	R/L			
	2525-3	●	●	18	41.5	150	25.35	25	-	25	25	R/L			
	3232-3-T10			10	41.5	170	32.35	32	-	32	32	R/L			
	3232-3	●	●	18	41.5	170	32.4	32	-	32	32	R/L			
	2020-4-T10	●		10	41.5	125	20.4	20	-	20	20	R/L	PGMN400-□-□ PRMN400-□ MGMN400-M/T MGGN400-□□-M MRMN400-M MGMR400-□□-□□ MGMN400-□□-L/R		
	2020-4	●	●	18	41.5	125	20.4	20	-	20	20	R/L			
	2525-4-T10	●	●	10	41.5	150	25.4	25	-	25	25	R/L			
	2525-4	●	●	18	41.5	150	25.4	25	-	25	25	R/L			
	3232-4-T10			10	41.5	170	32.4	32	-	32	32	R/L			
	3232-4	●	●	18	41.5	170	32.4	32	-	32	32	R/L			
	2020-5-T15			15	46.5	150	20.5	20	-	20	20	R/L	PGMN500-□-□ PRMN500-□ MGMN500-M/T MGGN500-□□-M MRMN500-M MGMR500-□□-□□ MGMN500-□□-L/R		
	2020-5	●	●	23	46.5	150	20.5	20	-	20	20	R/L			
	2525-5-T15			15	40.5	150	25.5	25	-	25	25	R/L			
	2525-5	●	●	23	46.5	150	25.5	25	-	25	25	R/L			
	3232-5-T15			15	46.5	150	32.5	32	-	32	32	R/L			
	3232-5	●	●	23	46.5	170	32.5	32	-	32	32	R/L			
	2020-6-T15			15	46.5	125	20.55	20	-	20	20	R/L	PGMN600-□-□ PRMN600-□ MGMN600-M MGGN600-□□-M MRMN600-M		
	2020-6	●	●	23	46.5	125	20.6	20	-	20	20	R/L			
	2525-6-T15			15	46.5	150	25.55	25	-	25	25	R/L			
	2525-6	●	●	23	46.5	150	25.55	25	-	25	25	R/L			
	3232-6-T15			15	46.5	150	32.55	32	-	32	32	R/L			
	3232-6	●	●	23	46.5	170	32.6	32	-	32	32	R/L			
	2525-8-T15	●		15	51.5	150	26.1	25	-	25	25	R/L	PGMN800-□-□ PRMN800-□ MRMN800-M MGMN800-M		
	2525-8	●	●	28	51.5	150	26.1	25	-	25	25	R/L			
	3232-8-T15			16	51.5	170	33.1	32	-	32	32	R/L			
	3232-8	●	●	28	51.5	170	33.1	32	-	32	32	R/L			
	2525-6A-T15			15	46.5	150	25.55	25	-	25	25	R/L	MRGN600-A		
	2525-6A	●		23	46.5	150	25.55	25	-	25	25	R/L			
	3232-6A-T15			15	46.5	170	32.55	32	-	32	32	R/L			
	3232-6A			23	46.5	170	32.55	32	-	32	32	R/L			
	2525-8A-T15		●	16	51.5	150	26.1	25	-	25	25	R/L	MRGN800-A		
	2525-8A	●	●	28	51.5	150	26.1	25	-	25	25	R/L			
	3232-8A-T15			15	51.5	170	33.1	32	-	32	32	R/L			
	3232-8A			28	51.5	170	33.1	32	-	32	32	R/L			

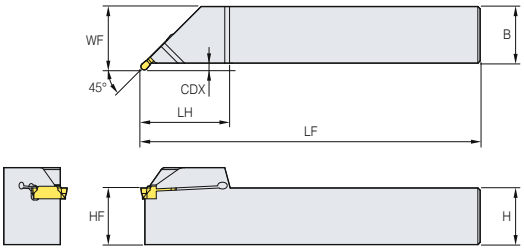
Applicable inserts **C45 ~ C49**

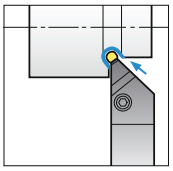
● : Stock item

MGEUR/L

For relief, Profiling machining

PRMN MGMN MGGN





45°

• R type holder

(mm)

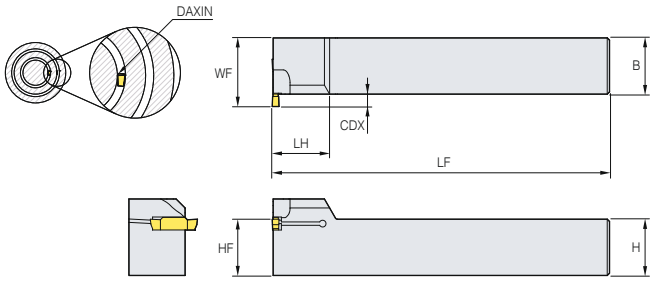
Designation		Stock R	Stock L	CDX	LH	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
MGEUR/L	2020-3	●		3	39.5	125	23	20	20	20	R/L	PRMN300-□ MRMN300-M	BHA0616	HW50L
	2525-3	●		3	39.5	150	28	25	25	25	R/L			
	3232-3			3	39.5	170	35	32	32	32	R/L			
	2020-4			3	39.5	125	23	20	20	20	R/L	PRMN400-□ MRMN400-M		
	2525-4	●		3	39.5	150	28	25	25	25	R/L			
	3232-4			3	39.5	170	35	32	32	32	R/L			
	2020-5			4	40	125	24	20	20	20	R/L	PRMN500-□ MRMN500-M		
	2525-5	●	●	4	41	150	29	25	25	25	R/L			
	3232-5			4	40	170	36	32	32	32	R/L			
	2020-6			4	40	125	24	20	20	20	R/L	PRMN600-□ MRMN600-M		
	2525-6	●		4	40	150	29	25	25	25	R/L			
	3232-6	●	●	4	40	170	36	32	32	32	R/L			
	2525-8			5	39.5	150	30	25	25	25	R/L	PRMN800-□ MRMN800-M		
	3232-8			5	45	170	37	32	32	32	R/L			
	2525-6A			4	40	150	29	25	25	25	R/L	MRGN600-A		
	3232-6A			4	40	170	36	32	32	32	R/L			
	2525-8A			5	45	150	30	25	25	25	R/L	MRGN800-A		
	3232-8A			5	45	170	37	32	32	32	R/L			

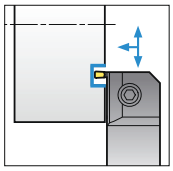
Applicable inserts **C45 ~ C49**

● : Stock item

MGEVR/L

For grooving, turning, Profiling machining





• R type holder

PGMN MGMN MGGN
PRMN MRMN MRGN

(mm)

Designation		Stock R	Stock L	CDX	LH	LF	WF	HF	HBH	B	H	DAXIN	HAND	Applicable insert	Screw	Wrench
MGEVR/L	2020-1.5	●		3	28	125	23.5	20	-	20	20	85	R/L	PGMN150-□-□ MGMN150-G	LTX0514	TW20L
	2525-1.5			3	28	150	28.5	25	-	25	25	85	R/L			
	3232-1.5			3	28	170	35	32	-	32	32	85	R/L			
	2020-2	●		3.5	28	125	23.5	20	-	20	20	65	R/L	PGMN200-□-□ PRMN200-□ MGMN200-M MGMN200-G		
	2525-2			3.5	28	150	28.5	25	-	25	25	65	R/L			
	3232-2			3.5	28	170	35.5	32	-	32	32	65	R/L			
	2020-2.5			4	28	125	24.8	20	-	20	20	65	R/L	PGMN250-□-□ MGMN250-M MGMN250-G		
	2525-2.5			4	28	150	29.8	25	-	25	25	65	R/L			
	3232-2.5			4	28	170	36.8	32	-	32	32	65	R/L			
	2020-3	●	●	5	28	125	25.5	20	-	20	20	75	R/L	PGMN300-□-□ PRMN300-□ MGMN300-M/T MGGN300-□-M MRMN300-M MGMN300-□□-L/R		
	2525-3	●	●	5	28	150	30.5	25	-	25	25	75	R/L			
	3232-3			5	28	170	37.5	32	-	32	32	75	R/L			
	2020-4	●		5	28	125	25.5	20	-	20	20	70	R/L	PGMN400-□-□ PRMN400-□ MGMN400-M/T MGGN400-□□-M MRMN400-M MGMN400-□□-L/R		
	2525-4	●		5	28	150	30.5	25	-	25	25	70	R/L			
	3232-4			5	28	170	37.5	32	-	32	32	70	R/L			
	2020-5			7	30	125	27	20	-	20	20	75	R/L	PGMN500-□-□ PRMN500-□ MGMN500-M/T MGGN500-□□-M MRMN500-M MGMN500-□□-L/R	BHA0616	HW50L
	2525-5			7	30.5	150	32	25	-	25	25	75	R/L			
	3232-5			7	30	170	39	32	-	32	32	75	R/L			
	2020-6			7	30.5	150	30.5	20	-	20	20	70	R/L	PGMN600-□-□ PRMN600-□ MGMN600-M MGGN600-□□-M MRMN600-M		
	2525-6			7	30	150	32	25	-	25	25	70	R/L			
	3232-6			7	30.5	170	39	32	-	32	32	70	R/L			
	2525-8			9	31	150	34	25	-	25	25	50	R/L	PGMN800-□-□ PRMN800-□ MRMN800-M MGMN800-M		
	3232-8			9	31	170	41	32	-	32	32	50	R/L			
	2525-6A			7	30	150	32	25	-	25	25	70	R/L	MRGN600-A		
	3232-6A			7	30	170	39	32	-	32	32	70	R/L			
	2525-8A			9	30	150	34	25	-	25	25	45	R/L	MRGN800-A		
	3232-8A			9	30	170	41	32	-	32	32	45	R/L			

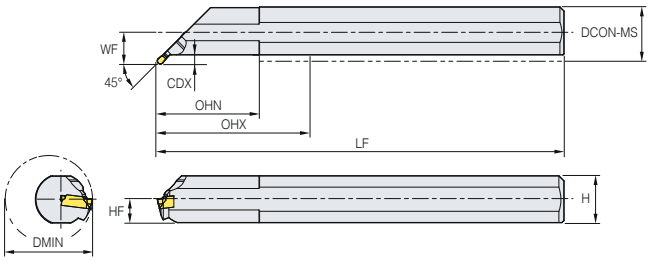
Applicable inserts **C45 ~ C49**

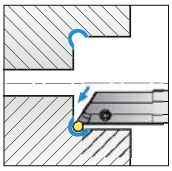
● : Stock item

MGIUR/L

For relief, Profiling machining

PRMN MRMN MRGN





45°

• R type holder

(mm)

Designation		Stock R	Stock L	CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
MGIUR/L	3520-3			3.5	35	45	150	13	18	20	R/L	PRMN300-□ MRMN300-M	MHA0512	HW40L
	4025-3	●		3.5	40	45	200	15.5	23	25	R/L			
	5032-3			3.5	50	65	250	19	30	32	R/L			
	3520-4			3.5	35	45	150	13	18	20	R/L	PRMN400-□ MRMN400-M		
	4025-4	●		3.5	40	45	200	15.5	23	25	R/L			
	5032-4	●		3.5	50	65	250	19	30	32	R/L			
	4025-5			3.5	40	45	200	15.5	23	25	R/L	PRMN500-□ MRMN500-M	BHA0616 BHA0620	HW50L
	5032-5	●		3.5	50	65	250	19	30	32	R/L			
	4025-6			3.5	40	45	200	15.5	23	25	R/L	PRMN600-□ MRMN600-M	BHA0616 BHA0620	
	5032-6	●		3.5	50	65	250	19	30	32	R/L			
	4025-8			6.5	40	45	200	15.5	23	25	R/L	PRMN800-□ MRMN800-M	BHA0616 BHA0620	
	5032-8	●		6.5	50	65	250	22	30	32	R/L			
	4025-6A			4.5	40	45	200	15.5	23	25	R/L	MRGN600-A	BHA0616 BHA0620	
	5032-6A			5.25	50	65	250	19	30	32	R/L			
	4025-8A			7.5	40	45	200	18.5	23	25	R/L	MRGN800-A	BHA0616 BHA0620	
	5032-8A			8	50	65	250	22	30	32	R/L			

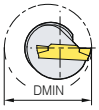
Applicable inserts **C45 ~ C49**

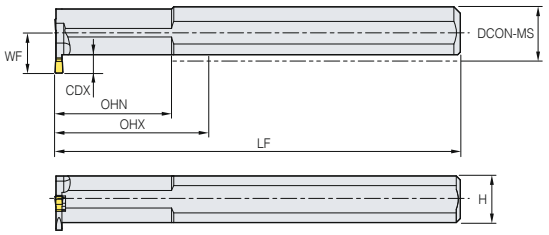
● : Stock item

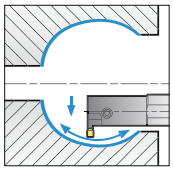
MGIVR/L

For grooving, turning, Profiling machining

PGMN MGMN MRMN
PRMN MGGN MRGN







• R type holder

(mm)

Designation		Stock R	Stock L	CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
MGIVR/L	2016-1.5			3.5	20	35	125	11.3	15	16	R/L	PGMN150-□-□ MGMN150-G	MHB0310	HW25L
	2520-1.5			3.5	25	45	150	13.1	18	20	R/L		MHA0512	HW40L
	2925-1.5			3.5	29	45	200	16.2	23	25	R/L			
	2016-2	●	●	4.5	20	35	125	11.95	15	16	R/L	PGMN200-□-□ PRMN200-□-□ MGMN200-G MGMN200-M MRMN200-M	MHB0310	HW25L
	2520-2	●	●	4.5	25	45	150	14	18	20	R/L		MHA0512	HW40L
	2925-2	●	●	4.5	29	45	200	16.5	23	25	R/L			
	2016-2.5	●		4.5	20	35	125	12.5	15	16	R/L	PGMN250-□-□ MGMN250-G MGMN250-M	MHB0310	HW25L
	2520-2.5			4.5	25	45	150	15.1	18	20	R/L		MHA0512	HW40L
	2925-2.5			4.5	29	45	200	17.25	23	25	R/L			
	2520-3	●	●	5	25	45	150	15.6	18	20	R/L	PGMN300-□-□ PRMN300-□-□ MGMN300-M/G/T MGGN300-□□-M MRMN300-M MGMN300-□□-L/R	MHA0512	HW40L
	2520-3-T7	●		7	25	49.3	150	16.5	18	20	R/L			
	3125-3	●	●	6	31	45	200	18.9	23	25	R/L			
	3125-3-T10	●		10	31	45	200	18.9	23	25	R/L			
	3732-3	●	●	6	37	65	250	21.5	30	32	R/L			
	3732-3-T12	●		12	37	65	250	21.5	30	32	R/L			
	2520-4	●	●	6	25	45	150	15.6	18	20	R/L	PGMN400-□-□ PRMN400-□-□ MGMN400-M/G/T MGGN400-□□-M MRMN400-M MGMN400-□□-L/R		
	2520-4-T7	●		7	25	45	150	15.6	18	20	R/L			
	3125-4	●		6	31	45	200	18.9	23	25	R/L			
	3125-4-T10	●		10	31	45	200	19	23	25	R/L			
	3732-4	●		6	37	65	250	21.5	30	32	R/L			
	3732-4-T12	●		12	37	65	250	21.5	30	32	R/L			
	3125-5	●		8	31	45	200	19.4	23	25	R/L	PGMN500-□-□ PRMN500-□-□ MGMN500-M/G/T MGGN500-□□-M MRMN500-M MGMN500-□□-L/R	BHA0616	HW50L
	3732-5	●		8	37	65	250	21.5	30	32	R/L		BHA0620	
	3125-6	●	●	8	31	45	200	19.4	23	25	R/L	PGMN600-□-□ PRMN600-□-□ MGMN600-MG MGGN600-□□-M MRMN600-M	BHA0616	
	3732-6	●		8	37	65	250	21.5	30	32	R/L		BHA0620	
	3732-8	●		10	37	65	250	23.4	30	32	R/L	PGMN800-□-□ PRMN800-□-□ MRMN800-M MGMN800-M		
	4540-8	●		10	45	70	300	27.2	37	40	R/L			
	3125-6A			8.4	31	45	200	19.4	23	25	R/L	MRGN600-A	BHA0616	
	3732-6A			8.5	37	65	250	21.5	30	32	R/L		BHA0620	
	3732-8A			10.4	37	65	250	23.4	30	32	R/L	MRGN800-A		
	4540-8A			10.2	45	70	300	27.2	37	40	R/L			

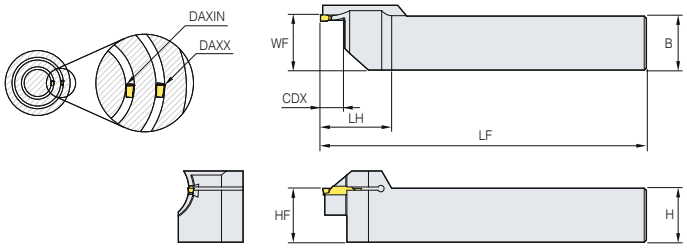
Applicable inserts **C45 ~ C49**

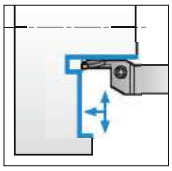
● : Stock item

MGFHR/L

For face grooving machining

PGMN MFMN
PRMN MGMN





• R type holder

(mm)

Designation	Stock R	Stock L	CDX	DAXIN	DAXX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
MGFHR/L 325-24/35-T10	●		10	24	35	150	25.6	25	25	25	R/L	PGMN300-□-□ PRMN300-□ MFMN300	BHA0616	HW50L
29/40-T10	●		10	29	40	150	25.6	25	25	25	R/L			
34/50-T10	●		10	34	50	150	25.6	25	25	25	R/L			
44/70-T10	●		10	44	70	150	25.6	25	25	25	R/L			
64/99-T10	●		10	64	99	150	25.6	25	25	25	R/L			
425-42/63-T15	●		15	42	63	150	25.6	25	25	25	R/L			
62/120-T15	●		15	62	120	150	25.6	25	25	25	R/L	PGMN400-□-□ PRMN400-□ MGMN400-M/T MGMN400-□□-L/R		
112/200-T15	●		15	112	200	150	25.6	25	25	25	R/L			

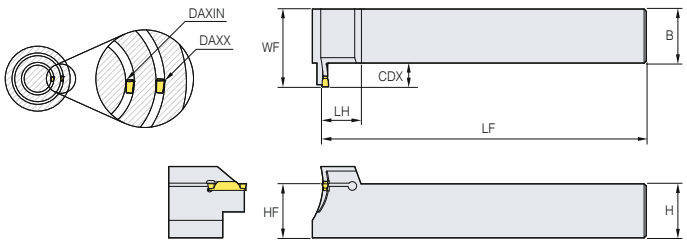
Applicable inserts **C45 ~ C49**

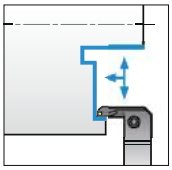
● : Stock item

MGFVR/L

For face grooving machining

PGMN MFMN
PRMN MGMN





• R type holder

(mm)

Designation	Stock R	Stock L	CDX	DAXIN	DAXX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
MGFVR/L 325-24/35-T10	●		10	24	35	150	36	25	25	25	R/L	PGMN300-□-□ PRMN300-□ MFMN300	MHA0512	HW40L
29/40-T10	●		10	29	40	150	36	25	25	25	R/L			
34/50-T10	●		10	34	50	150	36	25	25	25	R/L			
44/70-T10	●		10	44	70	150	36	25	25	25	R/L			
64/99-T10	●		10	64	99	150	36	25	25	25	R/L			
425-44/60-T15	●		15	44	60	150	41	25	25	25	R/L	PGMN400-□-□ PRMN400-□ MGMN400-M/T MGMN400-□□-L/R	BHA0616	HW50L
60/120-T15	●		15	60	120	150	41	25	25	25	R/L			
112/200-T15	●		15	112	200	150	41	25	25	25	R/L			

Applicable inserts **C45 ~ C49**

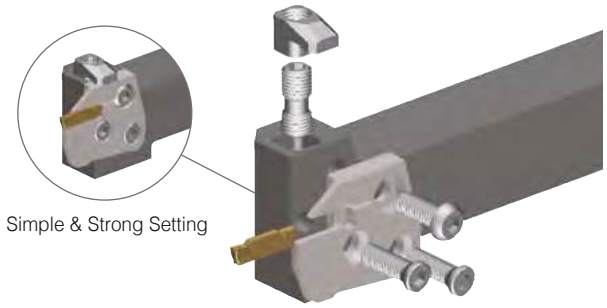
● : Stock item

KGT/MGT Cartridges

Features

- Compatible and economical due to divided cartridge & exclusive holder system from existing single body system
- Interchangeable cartridge
  - Various assembly depends on working style
  - Reduce cutting tool costs by over 30%
  - Setting with upper clamp & side screw
- Strong & stable setting force
  - Simultaneous assembly of insert & cartridge
  - Easy assembly & tool exchange
- Stable assembly system
  - Simple & superior setting force

Stable Assembly thanks to double screw & clamp



Code system

• Holder

KC	H	R/L	25	25
System Code	Holder Style	Hand	Height (mm)	Width (mm)

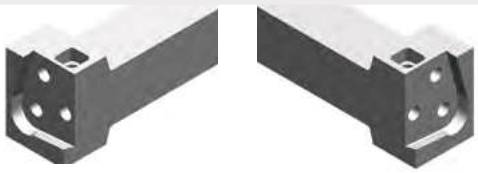
KC: KGT-Cartridge System
MC: MGT-Cartridge System

H : Horizontal
V : Vertical

Horizontal type

MCHR	MCHL
• External process: KCER/MCER • Facing process: KCFL/MCFL	• External process: KCEL/MCEL • Facing process: KCFR/MCFR

Vertical type



MCVR	MCVL
• External process: KCEL/MCEL • Facing process: KCFR/MCFR	• External process: KCER/MCER • Facing process: KCFL/MCFL

Available cartridge »

• Cartridge

KC	F	R/L	3	24/35	T16
System Code	Working Style	Hand	Cutting Width (mm)	Facing Dia (min/max)	Maximum Depth (mm)

KC : KGT-Cartridge System
MC : MGT-Cartridge System

E : External Process
F : Facing Process

External Process

KCER / MCER | KCER / MCER

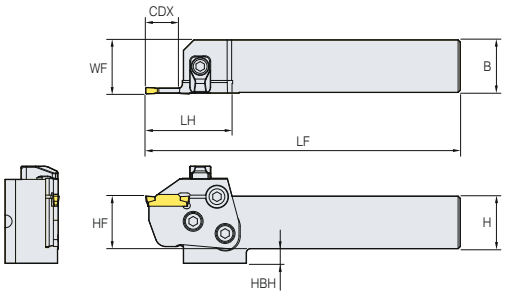
Facing Process

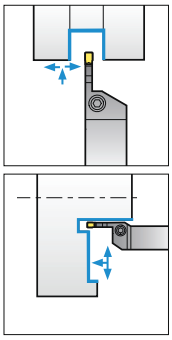
KCFR / MCFR | KCFL / MCFL

MCHR/L (Holder)

For grooving, turning, parting off, relief, Profiling machining

KCER/L MCER/L MGMN
KCFR/L MCFR/ MFMN





• R type holder

(mm)

Designation		Stock R	Stock L	LF	WF	HF	B	H	HBH	HAND	Applicable Cartridge	Clamp	Clamp Screw	Hinge Screw	Clamping Screw	Wrench
MCHR/L	2020	●	●	150	20.7	20	20	20	12	R/L	KCER/L KCFR/L MCER/L MCFR/L	CXH8N	DHA0818F	RHA0613	FHGA0618	HW40L
	2525	●	●	150	25.7	25	25	25	7	R/L						
	3232	●	●	170	32.7	32	32	32	0	R/L						

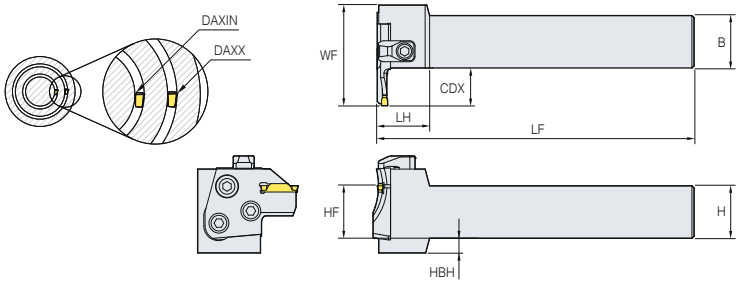
Applicable cartridge **C58 ~ C59**

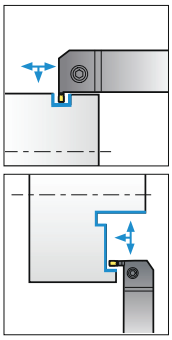
●: Stock item

MCVR/L (Holder)

For face grooving, turning machining

KCER/L MCER/L
KCFR/L MCFR/L





• R type holder

(mm)

Designation		Stock R	Stock L	LF	WF	HF	B	H	HBH	HAND	Applicable Cartridge	Clamp	Clamp Screw	Hinge Screw	Clamping Screw	Wrench
MCVR/L	2020	●	●	150	38	20	20	20	12	R/L	KCER/L KCFR/L MCER/L MCFR/L	CXH8N	DHA0818F	RHA0613	FHGA0618	HW40L
	2525	●	●	150	43	25	25	25	7	R/L						
	3232	●	●	170	50	32	32	32	0	R/L						

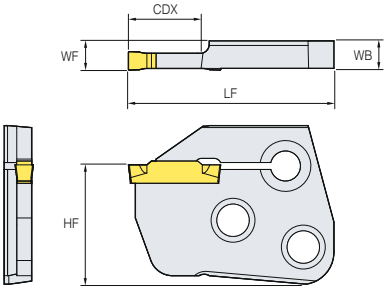
Applicable cartridge **C58 ~ C59**

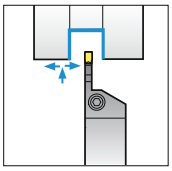
●: Stock item

KCER/L (Cartridge)

For grooving, turning, parting off, relief, Profilingmachining

KGMN KGMR/L
KGGN KRMN





• R type holder

(mm)

Designation		Stock R	Stock L	CDX	LF	WF	WB	HF	HAND	Applicable insert Width	Applicable insert Designation	Holder
KCER/L	3-T16	●	●	16	44.5	6.35	5.97	25.83	R/L	3	KGMN KGMR/L KGGN KRMN	MCVR/L MCHR/L
	4-T16	●		16	44.5	6.35	5.97	25.83	R/L	4		
	5-T20	●	●	20	48.5	6.35	5.97	25.83	R/L	5		
	6-T20	●	●	20	48.5	6.35	5.82	25.83	R/L	6		

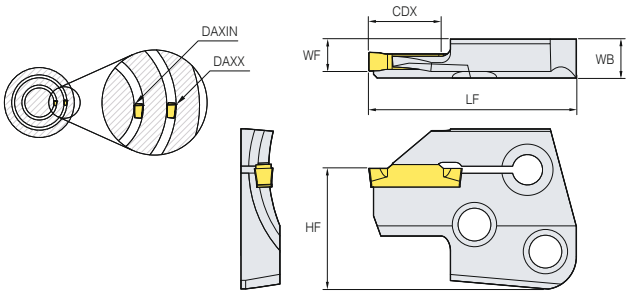
Applicable inserts **C28 ~ C30**

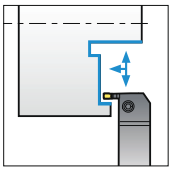
● : Stock item

KCFR/L (Cartridge)

For face grooving, turning machining

KGMN
KGMI





• R type holder

(mm)

Designation		Stock R	Stock L	CDX	DAXIN	DAXX	LF	WF	WB	HF	HAND	Applicable insert Width	Applicable insert Designation	Holder
KCFR/L	3-34/50-T16	●	●	16	34	50	44.5	6.35	8.35	25.83	R/L	3	KGMN KRMN KGGN	MCVR/L MCHR/L
	44/70-T16	●	●	16	44	70	44.5	6.35	8.35	25.83	R/L	3		
	64/99-T16	●	●	16	64	99	44.5	6.35	8.35	25.83	R/L	3		
	4-44/60-T16	●	●	16	44	60	44.5	6.35	8.35	25.83	R/L	4		
	60/120-T16	●	●	16	60	120	44.5	6.35	8.35	25.83	R/L	4		
	112/200-T16	●	●	16	112	200	44.5	6.35	8.35	25.83	R/L	4		

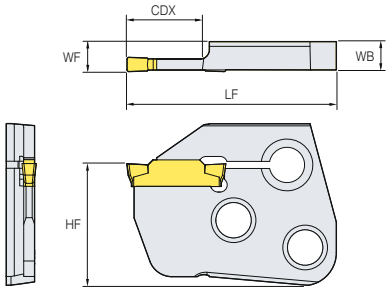
Applicable inserts **C28 ~ C30**

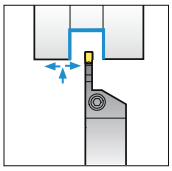
● : Stock item

MCER/L (Cartridge)

For grooving, turning, parting off, relief, Profiling machining

PGMN MGMN MGMR
PRMN MGGN MRMN





• R type holder

(mm)

Designation		Stock		CDX	LF	WF	WB	HF	HAND	Applicable insert		Holder
		R	L							Width	Designation	
MCER/L	3-T16	●	●	16	44.5	6.35	6	25.83	R/L	3	PGMN PRMN MGMN MGMR/L MGGN MRMN	MCVR/L MCHR/L
	4-T16	●	●	16	44.5	6.35	5.97	25.83	R/L	4		
	5-T20	●	●	20	48.5	6.35	5.87	25.83	R/L	5		
	6-T20			20	48.5	6.35	5.82	25.83	R/L	6		

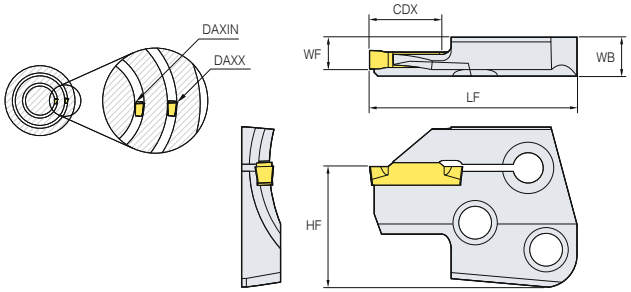
Applicable inserts **C45 ~ C49**

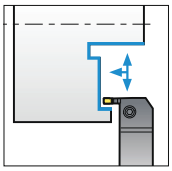
● : Stock item

MCFR/L (Cartridge)

For face grooving, turning machining

PGMN MFNM
PRMN MGMN





• R type holder

(mm)

Designation		Stock		CDX	DAXIN	DAXX	LF	WF	WB	HF	HAND	Applicable insert		Holder
		R	L									Width	Designation	
MCFR/L	3-24/35-T16	●		16	24	35	44.5	6.35	8	25.83	R/L	3	MFMN300	MCVR/L MCHR/L
	29/40-T16			16	29	40	44.5	6.35	8	25.83	R/L	3		
	34/50-T16			16	34	50	44.5	6.35	8	25.83	R/L	3		
	44/70-T16			16	44	70	44.5	6.35	8	25.83	R/L	3		
	64/99-T16			16	64	99	44.5	6.35	8	25.83	R/L	3		
	4-44/60-T16			16	44	60	44.5	6.35	7.97	25.83	R/L	4	PGMN400-□-□	
	60/120-T16	●	●	16	60	120	44.5	6.35	7.97	25.83	R/L	4	PRMN400-□	
	112/200-T16	●		16	112	200	44.5	6.35	7.97	25.83	R/L	4	MGMN400	

Applicable inserts **C45 ~ C49**

● : Stock item

MGT for Aluminum Wheel

Features

- Optimally designed inserts for aluminum wheel machining
- Longer tool life when matched with the best grade for application
- Unique clamping mechanism places a strong clamp over the insert
- A variety of insert types for multi application functions

Code system

• Insert

MR	G	N	6	-	A
System Code	**Tolerance**	**Hand**	**Cutting Edge Width**		**Chip Breaker**
MR : Multi Grooving Round shape MV : Multi Grooving V shape	G: Ground	N : Neutral	6 mm, 8 mm		A / AM / AP / A5

• Holder

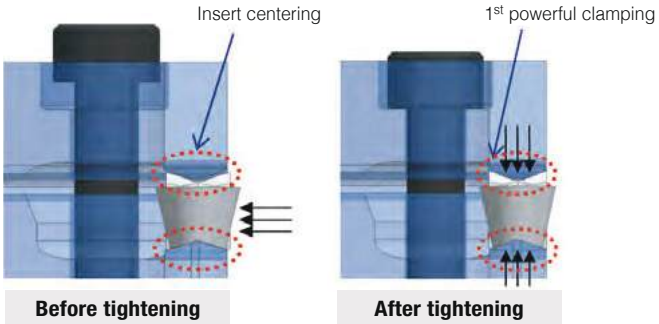
MG	E	H	R/L	25N	-	8	A	-	MR
System Code	**Application**	**Holder Type**	**Hand**	**Shank Size**		**Cutting Width**	**Chip Breaker**		**Insert Type**
MG : Multi Grooving	E : External machining I : Internal machining	H : Horizontal V : Vertical U : Undercut X : Special	R : Right-handed L : Left-handed	Height : 25 mm Width : 25 mm (For internal machining: Minimum diameter)		1.5~8.0 mm	A / AM / AP / A5		MR : Round MV : V

Various insert types

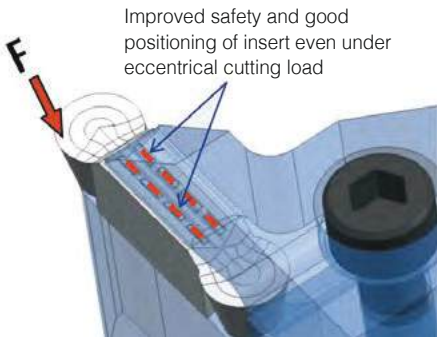
MRGN type : Full "Round" geometry

MRGN-A (For general)	MRGN-A5 (For copying)	MRGN-AM (Medium finishing)	MRGN-AP (PCD)	MVGN-A (For fine finishing)
High rake angle, Sharp cutting edge	Reinforced clamping force	For ductile cast iron	Improved chip control	High rake and relief angle

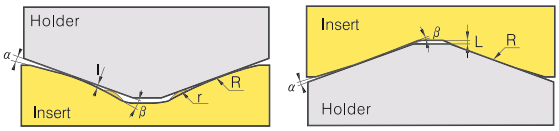
New clamping system



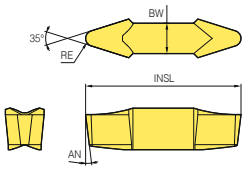
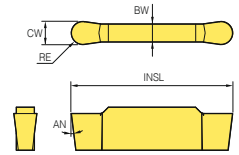
* Reinforcing the clamping force due to radius designed on the top & bottom side of insert and convex "DOT" on the top of insert



PATENT



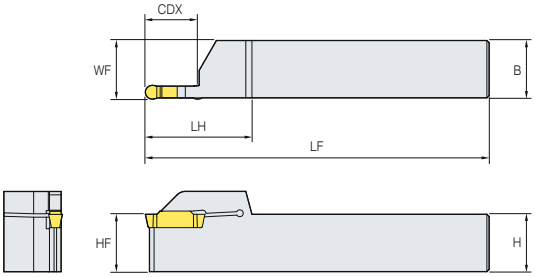
Applicable inserts

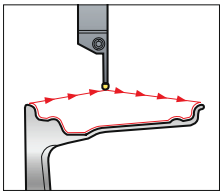
Application	Picture	Designation		Coated DP150	Uncoated G10	Dimensions (mm) SSC	CW	RE	BW	INSL	AN	HAND	Configuration	Page
For Aluminum Wheel	MVGN	MVGN	8N-A-R1.2			80	8	1.2	6	30	7	N		C46
			8N-A-R1.6			80	8	1.6	6	30	7	N		
	MRGN-A	MRGN	6N-A		●	60	6	3	5	26	12	N		C45 C46
			6N-AM			60	6	3	5	26	12	N		
			6N-AP			60	6	3	5	26	12	N		
			6N-A5		●	60	6	3	5	26	17	N		
			8N-A			80	8	4	6	30	12	N		
			8N-AM			80	8	4	6	30	12	N		
			8N-AP			80	8	4	6	30	12	N		
			8N-A5		●	80	8	4	6	30	17	N		

● : Stock item

MGEHR/L

MRGN





• R type holder

(mm)

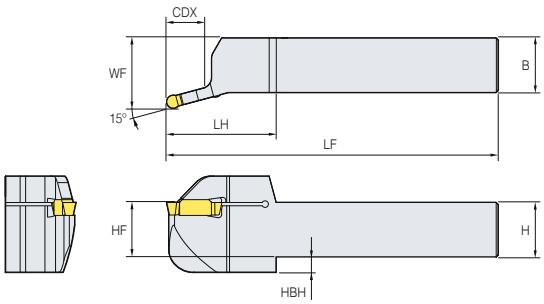
Designation		Stock R	Stock L	CDX	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
MGEHR/L	25N-6A	●		23.5	44.65	150	25.55	25	7	25	25	R/L	MRGN6N-A/AP/AM	BHA0620	HW50L
	32N-6A			27	51.8	170	32.55	32	8	32	32	R/L			
	25N-8A	●		23.5	51.8	150	26.05	25	7	25	25	R/L	MRGN8N-A/AP/AM		
	32N-8A			27	50	170	33.05	32	8	32	32	R/L			
	25N-6A5	●		23.5	44.65	150	25.55	25	7	25	25	R/L	MRGN6N-A5		
	32N-6A5			27	50	170	32.55	32	8	32	32	R/L			
	25N-8A5			23.5	50	150	26.05	25	7	25	25	R/L	MRGN8N-A5		
	32N-8A5			27	50	170	33.05	32	8	32	32	R/L			

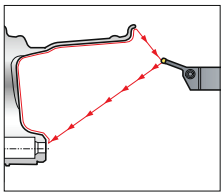
Applicable inserts **C61**

● : Stock item

MGEHR/L-15

MRGN





• R type holder

(mm)

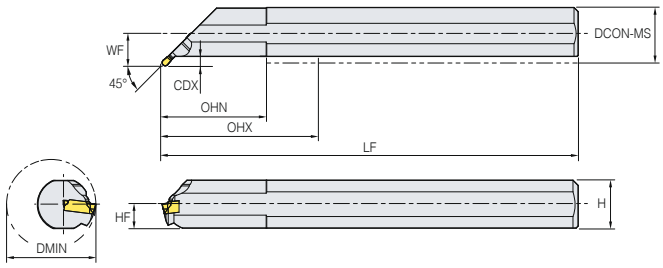
Designation		Stock R	Stock L	CDX	LH	LF	WF	HF	HBH	B	H	HAND	Applicable insert	Screw	Wrench
MGEHR/L	25N-6A-15	●		20	50	150	32.2	25	7	25	25	R/L	MRGN6N-A/AP/AM	BHA0620	HW50L
	32N-6A-15			25	50	150	39.2	32	8	32	32	R/L			
	25N-8A-15			20	55	150	32.2	25	7	25	25	R/L	MRGN8N-A/AP/AM		
	32N-8A-15			25.5	55	170	39.2	32	8	32	32	R/L			
	25N-6A5-15	●		20	55	150	32.2	25	7	25	25	R/L	MRGN6N-A5		
	32N-6A5-15			25	55	170	39.2	32	8	32	32	R/L			
	25N-8A5-15	●		20	60	150	32.2	25	7	25	25	R/L	MRGN8N-A5		
	32N-8A5-15			25.5	60	170	39.2	32	8	32	32	R/L			

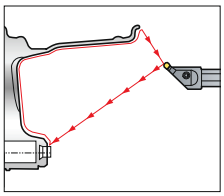
Applicable inserts **C61**

● : Stock item

MGIUR/L-MR

MRGN





45°

• R type holder

(mm)

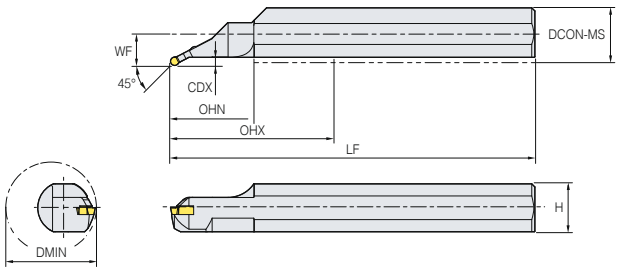
Designation		Stock R	Stock L	CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
MGIUR/L	6832-8A-MR			8	68	65	170	26	30	32	R/L	MRGN8N-A/AM/AP	BHA0620	HW50L
	6832-8A5-MR			8	68	65	170	26	30	32	R/L	MRGN8N-A5		

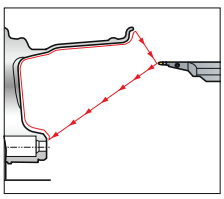
Applicable inserts **C61**

● : Stock item

MGIXR/L-MR

MRGN





45°

• R type holder

(mm)

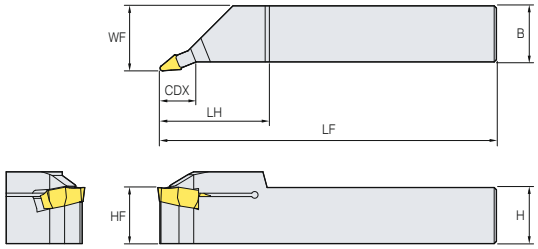
Designation		Stock R	Stock L	CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
MGIXR/L	7050-8A-MR	●		7.7	70	80	350	30.2	46	50	R/L	MRGN8N-A/AM/AP	BHA0620	HW50L
	7050-8A5-MR			7.7	70	80	350	30.2	46	50	R/L	MRGN8N-A5		

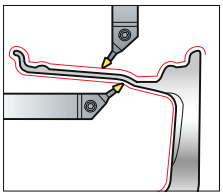
Applicable inserts **C61**

● : Stock item

MGEXR/L

MVGN





• R type holder

(mm)

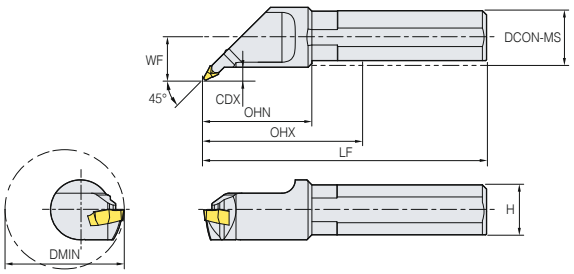
Designation	Stock R	Stock L	CDX	DMIN	OHN	LF	WF	H	B	HAND	Applicable insert	Screw	Wrench
MGEXR/L 25N-8A-5V	●		23.5	48.75	150	29	25	25	25	R/L	MVGN8N-A-R1.2	BHA0620	HW50L
25N-8A-22.5V	●		27	42.65	150	35	25	25	25	R/L	MVGN8N-A-R1.6		

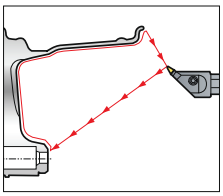
Applicable inserts **C61**

● : Stock item

MGIUR/L-MV

MVGN





45°

• R type holder

(mm)

Designation	Stock R	Stock L	CDX	DMIN	OHN	LF	WF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
MGIUR/L 6832-8A-MV			8	68	65	170	26	30	32	R/L	MVGN8N-A-R1.2 MVGN8N-A-R1.6	BHA0620	HW50L

Applicable inserts **C61**

● : Stock item

Economical 3-corner insert for high precision grooving

TB/TB-M

- Economical 3-corner insert for grooving
- Various cutting edge size ranging from 0.5~4.5 mm
- High accuracy ground insert ensures high precision machining
- Stable chip control optimized for automated grooving process

Code system

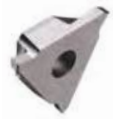
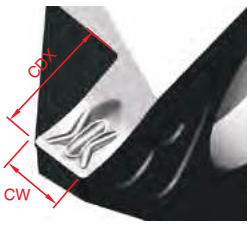
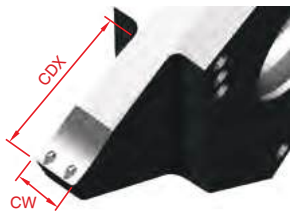
• Insert

TB	5	150	N	-	010	M
Triangle Blade	**Inscribed circle**	**Cutting edge width**	**Hand**		**Nose R**	**Chip breaker**
	3 : 9.525 mm 4 : 12.7 mm 5 : 15.875 mm	0.5~4.5 mm	N : Neutral R : Right L : Left		0.00~0.40 mm	None M

• Holder

TBH	5	25	R
Triangle Blade Holder	**Inscribed circle**	**Shank size**	**Hand**
	3 : 9.525 mm 4 : 12.7 mm 5 : 15.875 mm	10~25 mm	R : Right-handed L : Left-handed

TB/TB-M

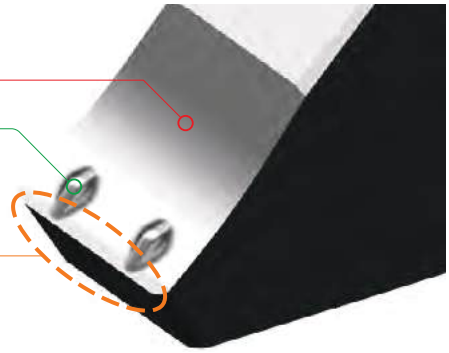
Specification		TB3000R/L, TB4000R/L	TB4000R-M	TB5000N-000-M
Designation		TB3125R/L ~ TB3430R/L (Inscribed circle of 9.525mm) TB4125R/L ~ TB4430R/L (Inscribed circle of 12.7mm)	TB4150R-M ~ TB4450R-M (Inscribed circle of 12.7mm)	TB5050N-000-M ~ TB5318-020-M (Inscribed circle of 15.875mm)
Insert shape				
Features	Chip breaker	Ground chip breaker	Pressed chip breaker	Pressed chip breaker
	Hand	Right/Left-handed	Right-handed	Neutral
	Cutting edge width(CW)	TB3000 : 1.25 ~ 4.3mm TB4000 : 1.25 ~ 4.5mm	1.5 ~ 4.5mm	0.5 ~ 3.18mm
	Depth of cut (CDX)	TB3000 : ~ 3.5mm TB4000 : ~ 5.0mm	~ 5.0mm	~ 6.5mm
	Shape	○	X	X
	Cutting edge width	○	○	○
Chip breaker shape				
Application range		P	P, M, K	P, M, K
Grade		CN2500, PC5300	CN2500, PC5300	PC5300

TB-M chip breaker

- Minimized cutting force at high speed and high feed ⟶ Smooth chip evacuation outside each groove
- High precision cutting performance ⟶ Exceptional surface finish and accurate dimensions
- Excellent chip flow and cutting results ⟶ Ideal for automated and unmanned productionw

TB5-M Chip breaker

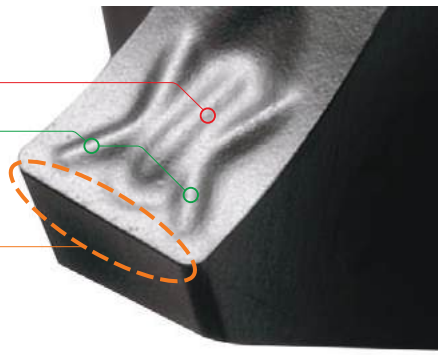
- **Lowered back area:** reduced load of chip evacuation due to minimizing chip friction
- **Beveled protruding dot:** made regular sized chip curls good chip flow out of the groove by reducing the chip width minimized load for chip evacuation in high depth of cut
- **Land:** prevented chipping and increased stability in interrupted machining
- **Use:** for grooving with T-MAX 6.5 mm below, parting and interrupted machining

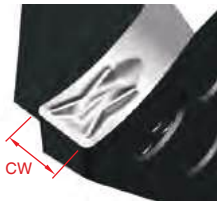


Designation	TB5050N-M ~ TB5120N-M	TB5140N-M ~ TB5178N-M	TB5196N-M ~ TB5239N-M	TB5247N-M ~ TB5287N-M	TB5300N-M ~ TB5318N-M
Shape					
Cutting edge width (CW)	0.5 ~ 1.2mm	1.40 ~ 1.78mm	1.96 ~ 2.39mm	2.47 ~ 2.87mm	3.0 ~ 3.18mm

TB4-M Chip breaker

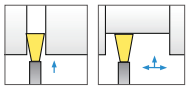
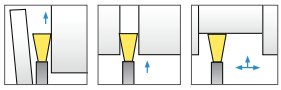
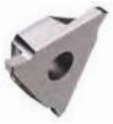
- **Second protruding dot:** stable chip curl control
- **Main protruding dot:** making regular sized chip curl good chip flow out of the groove by reducing the chip width good chip control in turning and chamfering
- **Sharp cutting edge:** increased machinability
- **Use:** for grooving with T-MAX 4.5 mm below and turning



Designation	TB4150R-M ~TB4185R-M	TB4200R-M ~TB4228R-M	TB4300R-M ~TB4350R-M	TB4400R-M ~TB4450R-M
Shape				
Cutting edge width (CW)	1.5 ~ 1.85mm	2.0 ~ 2.8mm	3.0 ~ 3.5mm	4.0 ~ 4.5mm

Guide for TB

(mm)

TB				TB3 / TB4	TB4-M	TB5-M
Recommended machining method						
Cutting edge width (CW)	Depth of cut CDX			Recommended feed rate (mm/rev)			
	TB3/TB4	TB4-M	TB5-M				
0.50	-	-	2.5	0.05(0.03~0.1)	–	–	●
0.80	-	-	1.6		–	–	●
1.00	-	-	3.5		–	–	●
1.04	-	-	2.0		–	–	●
1.20	-	-	2.0		–	–	●
1.25	2.0	-	2.0		●	–	●
1.40	2.0	-	6.5	0.10(0.03~0.15)	●	–	●
1.45	2.0	-	-		●	–	–
1.47	-	-	6.5		–	–	●
1.50	3.5	3.5	6.5		●	●	●
1.57	-	-	6.5		–	–	●
1.70	-	-	6.5		–	–	●
1.75	3.5	3.5	-		●	●	–
1.78	-	-	6.5		–	–	●
1.85	3.5	3.5	-		●	●	–
1.96	-	-	6.5		–	–	●
2.00	3.5	3.5	6.5		●	●	●
2.15	3.5	3.5	-	0.12(0.03~0.2)	●	●	–
2.22	6.5	-	6.5		–	–	●
2.30	3.5	3.5	6.5		●	●	●
2.39	-	-	6.5		–	–	●
2.47	-	-	6.5		–	–	●
2.50	4.0	4.0	6.5		●	●	●
2.65	4.0	4.0	6.5		●	●	●
2.70	-	-	6.5		–	–	●
2.80	4.0	4.0	-		●	●	–
2.87	-	-	6.5		–	–	●
3.00	4.0	4.0	6.5		●	●	●
3.15	-	-	6.5	0.15(0.05~0.2)	–	–	●
3.18	-	-	6.5		–	–	●
3.30	4.0	-	-		●	–	–
3.50	5.0	5.0	-		●	●	–
4.00	5.0	5.0	-		●	●	–
4.30	5.0	5.0	-		●	●	–
4.50	5.0	5.0	-		●	●	–

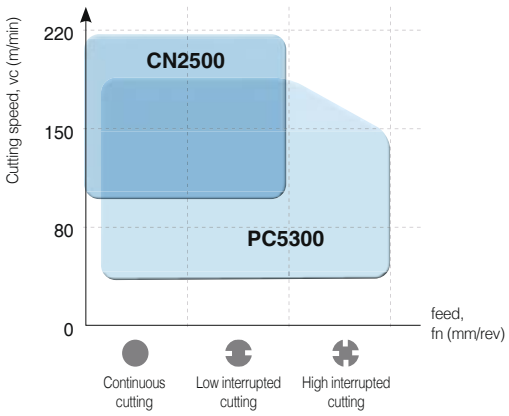
● : Stock item

Recommended cutting conditions

Workpiece		CN2500 (Cermet)			PC5300 (Coated)		
		Min	Recommended	Max.	Min	Recommended	Max.
P	SM□□C	100	**160**	220	80	**140**	200
	SCM	100	**150**	200	80	**130**	180
M	STS	-	-	-	40	**80**	150
K	GC, GCD	-	-	-	80	**130**	180

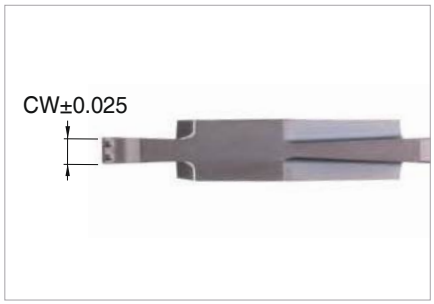
Recommended cutting speed, vc (m/min)

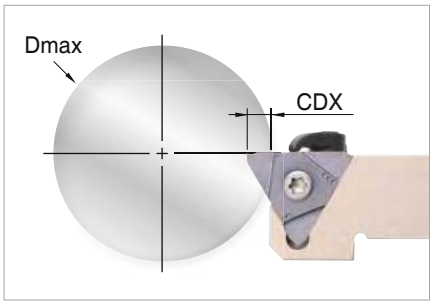
Recommended cutting range

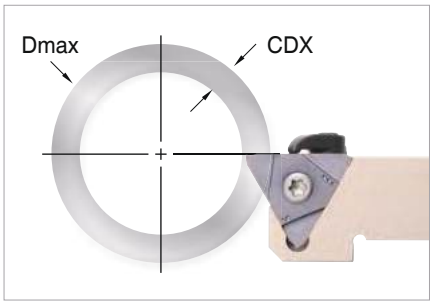


TB5-M machining range

- There is a limit to cutting diameters of TB5-M when depth of cuts are over 5 mm
  (e.g. When cutting with a TB5200N-020-M insert at the depth of 6.2 mm, Ø60 D-Max is available)
- N.L = No limit



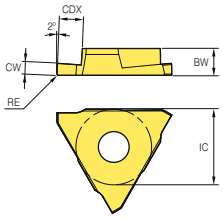




(mm)

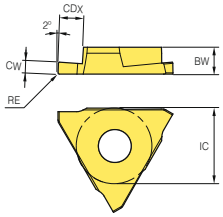
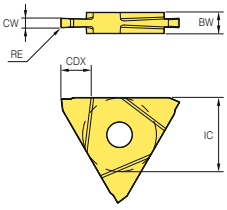
Designation		CW	RE	CDX	ØDmax								
					T≤3.0	T≤3.5	T≤4.0	T≤4.5	T≤5.0	T≤5.5	T≤6.0	T≤6.4	T≤6.5
TB	5050N- 000-M	0.50	0.00	1.0	-	-	-	-	-	-	-	-	-
	004-M	0.50	0.04	2.5	-	-	-	-	-	-	-	-	-
	5080N- 000-M	0.80	0.00	1.6	-	-	-	-	-	-	-	-	-
	5100N- 006-M	1.00	0.06	3.5	-	-	-	-	-	-	-	-	-
	5104N- 000-M	1.04	0.00	2.0	-	-	-	-	-	-	-	-	-
	5120N- 000-M	1.20	0.00	2.0	-	-	-	-	-	-	-	-	-
	5140N- 000-M	1.40	0.00	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5147N- 000-M	1.47	0.00	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5150N- 010-M	1.50	0.10	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	015-M	1.50	0.15	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5157N- 015-M	1.57	0.15	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5170N- 010-M	1.70	0.10	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5178N- 018-M	1.78	0.18	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5196N- 015-M	1.96	0.15	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5200N- 020-M	2.00	0.20	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5222N- 015-M	2.22	0.15	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5230N- 020-M	2.30	0.20	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5239N- 015-M	2.39	0.15	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5247N- 020-M	2.47	0.20	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5250N- 020-M	2.50	0.20	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5270N- 010-M	2.70	0.10	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5287N- 020-M	2.87	0.20	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5300N- 000-M	3.00	0.00	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5300N- 020-M	3.00	0.20	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	040-M	3.00	0.40	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5315N- 015-M	3.15	0.15	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40
	5318N- 020-M	3.18	0.20	6.5	N.L	N.L	N.L	N.L	N.L	Ø300	Ø170	Ø60	Ø40

TB Insert

Picture	Designation		Cermet	Coated	Dimensions (mm)								Configuration
			CN2500	PC5300	SSC	IC	CDX	CW	RE	BW	AN	HAND	
	TB (Right-handed)	3125R			30	9.525	1.5	1.25	0.2	4.76	5	R	
		3145R			30	9.525	1.5	1.45	0.2	4.76	5	R	
		3175R			30	9.525	2.5	1.75	0.2	4.76	5	R	
		3185R			30	9.525	2.5	1.85	0.2	4.76	5	R	
		3200R		●	30	9.525	2.5	2	0.2	4.76	5	R	
		3230R			30	9.525	3.5	2.3	0.3	4.76	5	R	
		3280R			30	9.525	3.5	2.8	0.3	4.76	5	R	
		3330R			30	9.525	3.5	3.3	0.3	4.76	5	R	
		3430R			30	9.525	3.5	4.3	0.4	4.76	5	R	
		4125R	●	●	40	12.7	3.5	1.25	0.2	4.76	5	R	
		4145R	●	●	40	12.7	3.5	1.45	0.2	4.76	5	R	
		4150R	●	●	40	12.7	3.5	1.5	0.2	4.76	5	R	
		4175R	●	●	40	12.7	3.5	1.75	0.2	4.76	5	R	
		4185R	●	●	40	12.7	3.5	1.85	0.2	4.76	5	R	
		4200R	●	●	40	12.7	3.5	2	0.2	4.76	5	R	
		4215R	●	●	40	12.7	3.5	2.15	0.2	4.76	5	R	
		4230R	●	●	40	12.7	3.5	2.3	0.2	4.76	5	R	
		4250R	●	●	40	12.7	4	2.5	0.3	4.76	5	R	
		4265R			40	12.7	4	2.65	0.3	4.76	5	R	
		4280R			40	12.7	4	2.8	0.3	4.76	5	R	
		4300R		●	40	12.7	4	3	0.3	4.76	5	R	
		4330R			40	12.7	4	3.3	0.3	4.76	5	R	
		4350R			40	12.7	4	3.5	0.3	4.76	5	R	
		4400R		●	40	12.7	4	4	0.4	4.76	5	R	
		4430R			40	12.7	4	4.3	0.4	4.76	5	R	
		4450R		●	40	12.7	4	4.5	0.4	4.76	5	R	
	TB (Left-handed)	3125L			30	9.525	1.5	1.25	0.2	4.76	5	L	
		3145L		●	30	9.525	1.5	1.45	0.2	4.76	5	L	
		3175L			30	9.525	2.5	1.75	0.2	4.76	5	L	
		3185L			30	9.525	2.5	1.85	0.2	4.76	5	L	
		3200L			30	9.525	2.5	2	0.2	4.76	5	L	
		3230L			30	9.525	3.5	2.3	0.3	4.76	5	L	
		3280L			30	9.525	3.5	2.8	0.3	4.76	5	L	
		3330L			30	9.525	3.5	3.3	0.3	4.76	5	L	
		3430L			30	9.525	3.5	4.3	0.4	4.76	5	L	
		4125L			40	12.7	3.5	1.25	0.2	4.76	5	L	
		4145L			40	12.7	3.5	1.45	0.2	4.76	5	L	
		4150L		●	40	12.7	3.5	1.5	0.2	4.76	5	L	
		4175L		●	40	12.7	3.5	1.75	0.2	4.76	5	L	
		4185L			40	12.7	3.5	1.85	0.2	4.76	5	L	
		4200L		●	40	12.7	3.5	2	0.2	4.76	5	L	
		4215L			40	12.7	3.5	2.15	0.2	4.76	5	L	
		4230L			40	12.7	3.5	2.3	0.2	4.76	5	L	
		4250L		●	40	12.7	4	2.5	0.3	4.76	5	L	
		4265L		●	40	12.7	4	2.65	0.3	4.76	5	L	
		4280L			40	12.7	4	2.8	0.3	4.76	5	L	
		4300L		●	40	12.7	4	3	0.3	4.76	5	L	
		4330L			40	12.7	4	3.3	0.3	4.76	5	L	
		4350L		●	40	12.7	5	3.5	0.3	4.76	5	L	
		4400L		●	40	12.7	5	4	0.4	4.76	5	L	
		4430L			40	12.7	5	4.3	0.4	4.76	5	L	
		4450L			40	12.7	5	4.5	0.4	4.76	5	L	

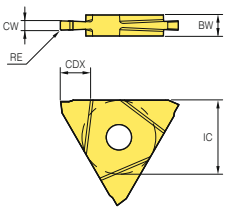
● : Stock item

TB Insert

Picture	Designation		Cermet	Coated	Dimensions (mm)								Configuration
			CN2500	PC5300	SSC	IC	CDX	CW	RE	BW	AN	HAND	
	TB (Right-handed)	**4150R-M**	●	●	40	12.7	3.5	1.5	0.2	4.76	5	R	
		4175R-M	●	●	40	12.7	3.5	1.75	0.2	4.76	5	R	
		4185R-M	●	●	40	12.7	3.5	1.85	0.2	4.76	5	R	
		4200R-M	●	●	40	12.7	3.5	2	0.2	4.76	5	R	
		4215R-M	●	●	40	12.7	3.5	2.15	0.2	4.76	5	R	
		4230R-M	●	●	40	12.7	3.5	2.3	0.2	4.76	5	R	
		4250R-M	●	●	40	12.7	4	2.5	0.3	4.76	5	R	
		4265R-M		●	40	12.7	4	2.65	0.3	4.76	5	R	
		4280R-M		●	40	12.7	4	2.8	0.3	4.76	5	R	
		4300R-M		●	40	12.7	4	3	0.3	4.76	5	R	
		4330R-M		●	40	12.7	4	3.3	0.3	4.76	5	R	
		4350R-M	●	●	40	12.7	5	3.5	0.3	4.76	5	R	
		4400R-M		●	40	12.7	5	4	0.4	4.76	5	R	
		4430R-M			40	12.7	5	4.3	0.4	4.76	5	R	
		4450R-M		●	40	12.7	5	4.5	0.4	4.76	5	R	
	TB (Neutral)	**5050N-000-M**		●	50	15.875	1	0.5	-	4.5	7	N	
		5050N-004-M		●	50	15.875	2.5	0.5	0.04	4.5	7	N	
		5080N-000-M		●	50	15.875	1.6	0.8	-	4.5	7	N	
		5100N-006-M		●	50	15.875	3.5	1	0.06	4.5	7	N	
		5104N-000-M			50	15.875	2	1.04	-	4.5	7	N	
		5120N-000-M		●	50	15.875	2	1.2	-	4.5	7	N	
		5140N-000-M		●	50	15.875	6.5	1.4	-	4.5	7	N	
		5147N-000-M		●	50	15.875	6.5	1.47	-	4.5	7	N	
		5150N-010-M		●	50	15.875	6.5	1.5	0.1	4.5	7	N	
		5150N-015-M		●	50	15.875	6.5	1.5	0.15	4.5	7	N	
		5157N-015-M		●	50	15.875	6.5	1.57	0.15	4.5	7	N	
		5170N-010-M			50	15.875	6.5	1.7	0.1	4.5	7	N	
		5178N-018-M			50	15.875	6.5	1.78	0.18	4.5	7	N	
		5196N-015-M		●	50	15.875	6.5	1.96	0.15	4.5	7	N	
		5200N-020-M		●	50	15.875	6.5	2	0.2	4.5	7	N	
		5222N-015-M		●	50	15.875	6.5	2.22	0.15	4.5	7	N	
		5230N-020-M			50	15.875	6.5	2.3	0.2	4.5	7	N	
		5239N-015-M		●	50	15.875	6.5	2.39	0.15	4.5	7	N	
		5247N-020-M		●	50	15.875	6.5	2.47	0.2	4.5	7	N	
		5250N-020-M		●	50	15.875	6.5	2.5	0.2	4.5	7	N	
		5270N-010-M		●	50	15.875	6.5	2.7	0.1	4.5	7	N	
		5287N-020-M			50	15.875	6.5	2.87	0.2	4.5	7	N	
		5300N-000-M		●	50	15.875	6.5	3	-	4.5	7	N	
		5300N-020-M		●	50	15.875	6.5	3	0.2	4.5	7	N	
		5300N-040-M			50	15.875	6.5	3	0.4	4.5	7	N	
		5315N-015-M			50	15.875	6.5	3.15	0.15	4.5	7	N	
		5318N-020-M		●	50	15.875	6.5	3.18	0.2	4.5	7	N	

● : Stock item

TB Insert

Picture	Designation		Cermet	Coated	Dimensions (mm)								Configuration
			CN2500	PC5300	SSC	IC	CDX	CW	RE	BW	AN	HAND	
	TB (Neutral)	**5050N-004-P**			50	15.875	1	0.5	0.04	4.5	7	N	
		5100N-010-P			50	15.875	3.5	1	0.1	4.5	7	N	
		5150N-010-P			50	15.875	6.5	1.5	0.1	4.5	7	N	
		020-P			50	15.875	6.5	1.5	0.2	4.5	7	N	
		5200N-010-P			50	15.875	6.5	2	0.1	4.5	7	N	
		020-P			50	15.875	6.5	2	0.2	4.5	7	N	
		5239N-015-P			50	15.875	6.5	2.39	0.15	4.5	7	N	
		5250N-020-P			50	15.875	6.5	2.5	0.2	4.5	7	N	
		5300N-020-P			50	15.875	6.5	3	0.2	4.5	7	N	
	TB (Neutral, Right-handed)	**5100N-6DR-P**		●	50	15.875	3.5	1	0.05	4.5	7	N	
		15DR-P		●	50	15.875	3.5	1	0.05	4.5	7	N	
		5150N-6DR-P		●	50	15.875	6.5	1.5	0.05	4.5	7	N	
		15DR-P		●	50	15.875	6.5	1.5	0.05	4.5	7	N	
		5200N-6DR-P		●	50	15.875	6.5	2	0.1	4.5	7	N	
		15DR-P			50	15.875	6.5	2	0.1	4.5	7	N	
	TB (Neutral, Left-handed)	**5100N-6DL-P**			50	15.875	3.5	1	0.05	4.5	7	N	
		15DL-P			50	15.875	3.5	1	0.05	4.5	7	N	
		5150N-6DL-P			50	15.875	6.5	1.5	0.05	4.5	7	N	
		15DL-P			50	15.875	6.5	1.5	0.05	4.5	7	N	
		5200N-6DL-P			50	15.875	6.5	2	0.1	4.5	7	N	
		15DL-P			50	15.875	6.5	2	0.1	4.5	7	N	
	TB (Neutral, Round shape)	**5157N-079-P**			50	15.875	6.5	1.57	0.79	4.5	7	N	
		5200N-100-P			50	15.875	6.5	2	1	4.5	7	N	
		5239N-120-P			50	15.875	6.5	2.39	1.2	4.5	7	N	
		5300N-150-P			50	15.875	6.5	3	1.5	4.5	7	N	

● : Stock item

TBH

TB3000R/L
TB4000R-M

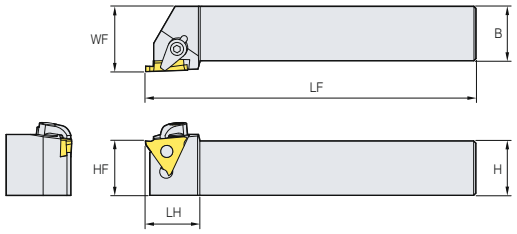
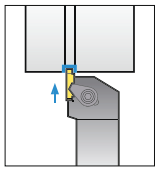


Fig. 1



• R type holder

TB5000N-□□□-M

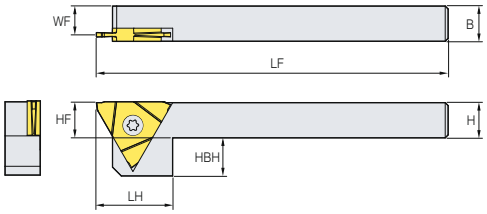


Fig. 2

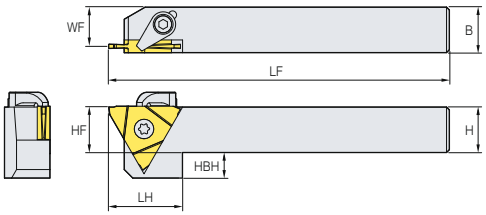


Fig. 3

(mm)

Designation		Stock R	Stock L	HF	B	H	LH	LF	WF	HBH	HAND	Applicable insert	Clamp	Clamp Screw	Screw	Wrench	Fig.
TBH	320R/L-23			20	20	20	25.5	125	25	-	R/L	TB3125~3230R/L	CS6R1	DHA0617	-	HW30L	1
	320R/L-33			20	20	20	25.5	125	25	-	R/L	TB3280~3330R/L					
	320R/L-43			20	20	20	25.5	125	25	-	R/L	TB3430R/L					
	325R/L-23	●		25	25	25	25.5	150	30	-	R/L	TB3125~3230R/L					
	325R/L-33			25	25	25	25.5	150	30	-	R/L	TB3280~3330R/L					
	325R/L-43			25	25	25	25.5	150	30	-	R/L	TB3430R/L					
	420R/L-23	●		20	20	20	25.5	125	25	-	R/L	TB4125~4230R/L					
	420R/L-33	●		20	20	20	25.5	125	25	-	R/L	TB4250~4330R/L					
	420R/L-45	●		20	20	20	25.5	150	25	-	R/L	TB4350~4450R/L					
	425R/L-23	●		20	20	20	25.5	125	25	-	R/L	TB4125~4230R/L					
	425R/L-33	●		25	25	25	25.5	150	30	-	R/L	TB4250~4330R/L					
	425R/L-45	●		25	25	25	25.5	150	30	-	R/L	TB4350~4450R/L					
TBH	510R/L	●	●	10	10	10	26	120	7.8	15	R/L	TB5050~5318N	-	-	FTNA0512	TW20L	2
	512R/L	●	●	12	12	12	26	120	9.8	13	R/L						
	516R/L	●	●	16	16	16	26	120	13.8	9	R/L		CS6R1	DHA0617	FTNA0516	HW30L, TW20L	3
	520R/L	●	●	20	20	20	26	120	17.8	5	R/L						
	525R/L	●	●	25	25	25	-	150	22.8	-	R/L						

Applicable inserts **C68 ~ C70**

● : Stock item

Grooving and Parting tool with precision 6 corners

Hexa Blade

- Grooving and Parting tool with high economical 6 corners
- Increased reliability and stability in cutting due to high qualified cutting edge

Code system

• Insert

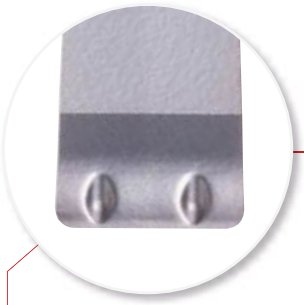
HB	27	N	200	-	020	-	M
Hexa Blade	**Inscribed circle diameter** 27 : 27.0 mm	**Hand** N : Neutral	**Cutting width** 200 : 2.00 mm		**Nose R** 020 : 0.20 mm		**Chip breaker** M

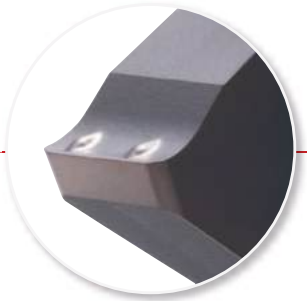
• Holder

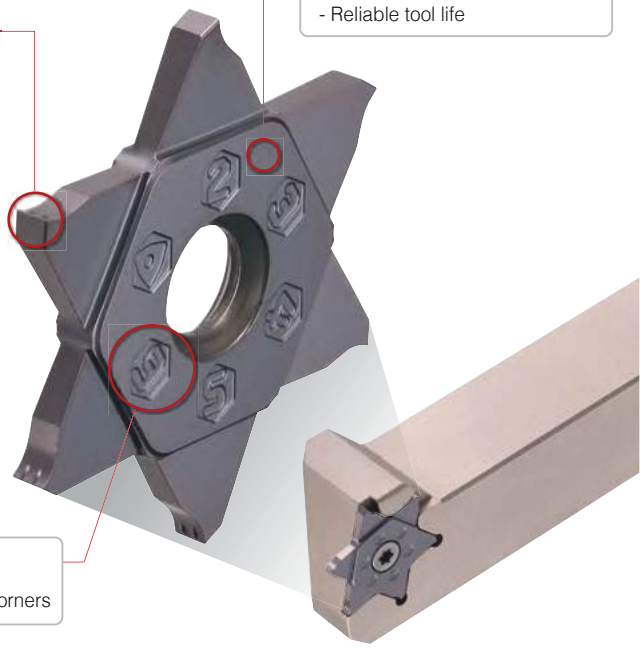
HB	E	H	R	25	25	-	27	-	2
Hexa Blade	**Application** E : External machining	**Holder type** H : Horizontal	**Hand** R : Right-handed L : Left-handed	**Shank height** 25 : 25.0 mm	**Shank width** 25 : 25.0 mm		**Inscribed circle diameter** 27 : 27.0 mm		**Insert size** 2 : BW = 2.70 mm 3 : BW = 3.70 mm 4 : BW = 4.70 mm

Features

- Dot-typed chip breaker general cutting for various workpieces
- Good chip control preventing long chip and chip curling
- Stable cutting even in high feed cutting due to strengthened cutting edge structure







• Precision insert
- Superior quality in dimensions
- Excellent corner dimension deviation management
- Equally stable performance

• Neutral hand
- Convenient use with neutral hand

• Strong cutting edge
- Increased high feed cutting performance

• Wide clamping area
- More stable clamping system
- Strengthen anti-vibration during machining
- Reliable tool life

• 6 cornered insert
- High cost efficiency from multi-corners

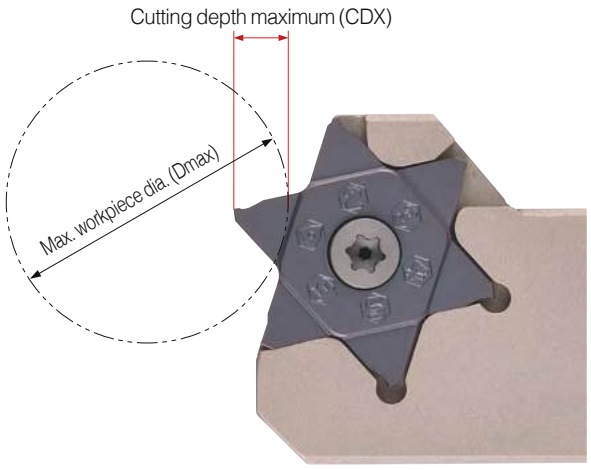
Recommended cutting conditions

Workpiece					Specific cutting force (N/mm²)	Brinell hardness (HB)	Grade	C/B	ap (mm)
ISO	Workpiece materials		KS	ISO			PC5300	M	
							vc (m/min)	fn (mm/rev)	
P	Unalloyed steel	C = 0.25~0.55%	SM35C	C35	1600	150	110	0.15	≤ 5.0
							130	**0.12**	
							150	0.10	
		C = 0.55~0.80%	SM45C	C45	1700	170	80	0.15	
							100	**0.12**	
							120	0.10	
	Low alloy steel	Non-hardened	SCM440	43CrMo4	1700	180	80	0.15	
							100	**0.12**	
							120	0.10	
		Hardened and tempered	SCM445	-	2050	350	50	0.15	
							60	**0.12**	
							70	0.10	
	High alloy steel	Annealed	STD11	-	1950	200	60	0.15	
							75	**0.12**	
							90	0.10	
M	Austenite series		STS304	X5CrNi18-9	2000	180	60	0.10	≤ 5.0
							80	**0.08**	
							100	0.06	
			STS316	X5CrNiMo17-12-2	2000	180	60	0.10	
							80	**0.08**	
							100	0.06	

Product using guide

Cutting depth maximum and max. workpiece dia. (mm)	
Cutting depth maximum (CDX)	Max. workpiece dia. (Dmax)
5.0	≤ 30
4.9	≤ 34
4.8	≤ 38
4.7	≤ 42
4.6	≤ 46
4.5	≤ 58
4.4	≤ 62
4.3	≤ 66
4.2	≤ 70
4.1	≤ 74
4.0	≤ 89
3.9	≤ 93
3.8	≤ 97
3.7	≤ 101
3.6	≤ 105
3.5	≤ 109
3.4	≤ 123
3.3	≤ 127
3.2	≤ 131
3.1	≤ 135
3.0	≤ 147
2.9	≤ 151
2.8	≤ 155
2.7	≤ 159
2.6	≤ 163
2.5	≤ 200
2.4	≤ 200
2.3	≤ 200
2.2	≤ 200
2.1	≤ 200
2.0	∞

Using guide



① Hexa Blade enables to cut with maximum 5.0 mm depth of cut. In this case, the maximum workpiece cutting diameter is 30 mm.

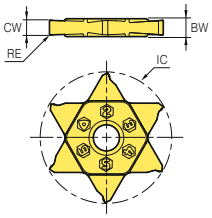
② In Hexa Blade cutting with 2.0 mm depth of cut, the size of workpiece cutting diameter doesn't matter. If cutting with more than 2.0 mm depth of cut, the applicable workpiece cutting diameter could be different depending on depth of cut.

③ If workpiece cutting diameter is bigger than 65 mm, the maximum depth of cut is 4.3 mm. In case of cutting with deeper than 4.3 mm, there could be cutting troubles because the holder touches workpieces.

④ If depth of cut is 3.5 mm, the maximum workpiece cutting diameter is 109 mm. If it is bigger than 109

※ Cutting depth maximum and max. workpiece dia. on the chart could be different up to cutting environment.

Applicable inserts

Application	Picture	Designation	Coated PC5300	SSC	IC	CDX	CW	RE	BW	AN	HAND	Configuration
Parting		HB 27N178-018-M	●	20	27	5	1.78	0.18	2.7	5	N	
		27N185-015-M	●	20	27	5	1.85	0.15	2.7	5	N	
		27N196-015-M	●	20	27	5	1.96	0.15	2.7	5	N	
		27N200-020-M	●	20	27	5	2	0.4	2.7	5	N	
		27N200-040-M	●	20	27	5	2	0.4	2.7	5	N	
		27N270-010-M	●	30	27	5	2.7	0.1	3.7	5	N	
		27N287-020-M	●	30	27	5	2.87	0.2	3.7	5	N	
		27N300-000-M	●	30	27	5	3	0	3.7	5	N	
		27N300-020-M	●	30	27	5	3	0.2	3.7	5	N	
		27N300-040-M	●	30	27	5	3	0.4	3.7	5	N	
		27N374-020-M	●	40	27	5	3.74	0.2	4.7	5	N	
		27N398-020-M	●	40	27	5	3.98	0.2	4.7	5	N	
		27N400-040-M	●	40	27	5	4	0.4	4.7	5	N	

● : Stock item

HBEHR/L

HB

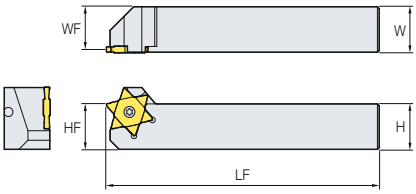


Fig. 1

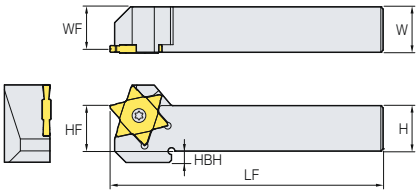
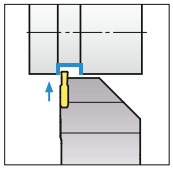


Fig. 2



• R type holder

(mm)

Designation		Stock	H	B	LF	HF	WF	HBH	LH	HAND	Screw	Wrench	Fig
HBEHR/L	1616-27-2	●	16	16	100	16	15	9	27	R/L			2
	2020-27-2	●	20	20	120	20	19	5	27	R/L			2
	2525-27-2	●	25	25	150	25	24	-	27	R/L			1
	1616-27-3	●	16	16	100	16	15	9	27	R/L			2
	2020-27-3	●	20	20	120	20	19	5	27	R/L	PTMA0512D	TW15P	2
	2525-27-3	●	25	25	150	25	24	-	27	R/L			1
	1616-27-4	●	16	16	100	16	15	9	27	R/L			2
	2020-27-4	●	20	20	120	20	19	5	27	R/L			2
	2525-27-4	●	25	25	150	25	24	-	27	R/L			1

Cutting depth maximum and max. workpiece dia. (mm)							
Cutting depth maximum (CDX)	5.0	4.5	4.0	3.5	3.0	2.5	2.0
Max. workpiece dia. (Dmax)	≤ 30	≤ 62	≤ 89	≤ 109	≤ 147	≤ 200	∞

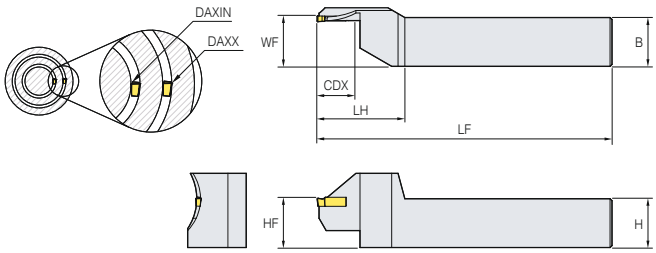
Applicable inserts **C73**

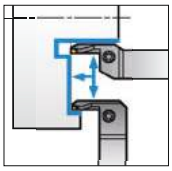
※Please refer to the Page C74 for the cutting depth maximum and max. workpiece dia. (mm)

FGHH

For face grooving, turning machining

FGD FGM FMM





• R type holder

(mm)

Designation		Stock R	Stock L	CDX	DAXIN	DAXX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
FGHH	320R - 25/30	●		12	25	30	125	20.6	20	20	20	R	FMM300R-03	BHA0616	HW50L
	30/35	●		12	30	35	125	20.6	20	20	20	R			
	35/48	●		12	35	48	125	20.6	20	20	20	R			
	48/60			22	48	60	150	20.6	20	20	20	R	FGD300R-03 FGM300R-03		
	60/75			22	60	75	150	20.6	20	20	20	R			
	75/100			22	75	100	150	20.6	20	20	20	R			
	100/140			22	100	140	150	20.6	20	20	20	R			
	325R - 25/30	●		12	25	30	150	25.6	25	25	25	R	FMM300R-03		
	30/35	●		12	30	35	150	25.6	25	25	25	R			
	35/48	●		12	35	48	150	25.6	25	25	25	R			
	48/60	●		22	48	60	150	25.6	25	25	25	R	FGD300R-03 FGM300R-03		
	60/75	●		22	60	75	150	25.6	25	25	25	R			
	75/100	●		22	75	100	150	25.6	25	25	25	R			
	100/140	●		22	100	140	150	25.6	25	25	25	R			
	420R - 25/30	●		12	25	30	125	20.6	20	20	20	R	FMM400R-04		
	30/35	●		12	30	35	125	20.6	20	20	20	R			
	35/48			12	35	48	125	20.6	20	20	20	R			
	48/60			25	48	60	150	20.6	20	20	20	R	FGD400R-04 FGM400R-04		
	60/75			25	60	75	150	20.6	20	20	20	R			
	75/100			25	75	100	150	20.6	20	20	20	R			
	100/140			25	100	140	150	20.6	20	20	20	R			
	425R - 25/30			12	25	30	150	25.6	25	25	25	R	FMM400R-04		
	30/35	●		12	30	35	150	25.6	25	25	25	R			
	35/48	●		12	35	48	150	25.6	25	25	25	R			
	48/60	●		25	48	60	150	25.6	25	25	25	R	FGD400R-04 FGM400R-04		
	60/75	●		25	60	75	150	25.6	25	25	25	R			
	75/100	●		25	75	100	150	25.6	25	25	25	R			
	100/140	●		25	100	140	150	25.6	25	25	25	R			
	520R - 25/30			12	25	30	125	20.6	20	20	20	R	FMM500R-04		
	30/35			12	30	35	125	20.6	20	20	20	R			
	35/40			20	35	40	125	20.6	20	20	20	R			
	40/48			20	40	48	125	20.6	20	20	20	R			
	48/60			25	48	60	150	20.6	20	20	20	R	FGD500R-04 FGM500R-04		
	60/75			25	60	75	150	20.6	20	20	20	R			
	75/100			25	75	100	150	20.6	20	20	20	R			
	100/140			25	100	140	150	20.6	20	20	20	R			
	525R - 25/30			12	25	30	150	25.6	25	25	25	R	FMM500R-04		
	30/35			12	30	35	150	25.6	25	25	25	R			
	35/40	●		20	35	40	150	25.6	25	25	25	R			
	40/48			20	40	48	150	25.6	25	25	25	R			
	48/60	●		25	48	60	150	25.6	25	25	25	R	FGD500R-04 FGM500R-04		
	60/75	●		25	60	75	150	25.6	25	25	25	R			
	75/100	●		25	75	100	150	25.6	25	25	25	R			
	100/140	●		25	100	140	150	25.6	25	25	25	R			

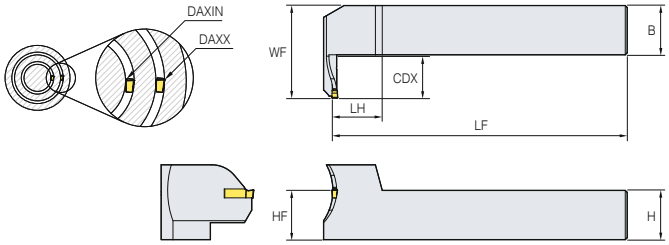
Applicable inserts C77

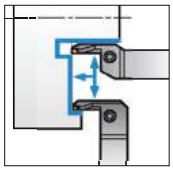
● : Stock item

FGVH

For face grooving, turning machining

FGD FGM FMM





• R type holder

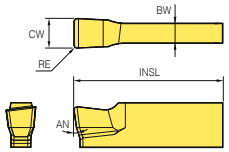
(mm)

Designation		Stock R	Stock L	CDX	DAXIN	DAXX	LF	WF	HF	B	H	HAND	Applicable insert	Screw	Wrench
FGVH	320R - 25/30	●		12	25	30	125	40	20	20	20	R			
	30/35	●		12	30	35	125	40	20	20	20	R	FMM300R-03		
	35/48	●		12	35	48	125	40	20	20	20	R			
	48/60			22	48	60	150	42	20	20	20	R			
	60/75			22	60	75	125	42	20	20	20	R	FGD300R-03		
	75/100			22	75	100	125	42	20	20	20	R	FGM300R-03		
	100/140			22	100	140	150	42	20	20	20	R			
	325R - 25/30	●		12	25	30	150	25.6	25	25	25	R			
	30/35	●		12	30	35	150	45	25	25	25	R	FMM300R-03		
	35/48	●		12	35	48	150	25.6	25	25	25	R			
	48/60	●		22	48	60	150	47	25	25	25	R			
	60/75	●		22	60	75	150	47	25	25	25	R	FGD300R-03		
	75/100	●		22	75	100	150	47	25	25	25	R	FGM300R-03		
	100/140	●		22	100	140	150	47	25	25	25	R			
	420R - 25/30			12	25	30	125	40	20	20	20	R			
	30/35			12	30	35	125	40	20	20	20	R	FMM400R-04		
	35/48	●		12	35	48	125	40	20	20	20	R			
	48/60			25	48	60	150	45	20	20	20	R			
	60/75			25	60	75	150	45	20	20	20	R	FGD400R-04		
	75/100			25	75	100	150	45	20	20	20	R	FGM400R-04		
	100/140			25	100	140	150	45	20	20	20	R			
	425R - 25/30	●		12	25	30	150	45	25	25	25	R		BHA0616	HW50L
	30/35			12	30	35	150	45	25	25	25	R	FMM400R-04		
	35/48			12	35	48	150	45	25	25	25	R			
	48/60	●		25	48	60	150	50	25	25	25	R			
	60/75	●		25	60	75	150	50	25	25	25	R	FGD400R-04		
	75/100	●		25	75	100	150	50	25	25	25	R	FGM400R-04		
	100/140	●		25	100	140	150	50	25	25	25	R			
	520R - 25/30			12	25	30	125	40	20	20	20	R			
	30/35			12	30	35	125	40	20	20	20	R	FMM500R-04		
	35/40			20	35	40	125	41.5	20	20	20	R			
	40/48			20	40	48	125	41.5	20	20	20	R			
	48/60			25	48	60	125	20.6	20	20	20	R			
	60/75			25	60	75	125	20.6	20	20	20	R	FGD500R-04		
	75/100			25	75	100	125	20.6	20	20	20	R	FGM500R-04		
	100/140			25	100	140	125	46	20	20	20	R			
	525R - 25/30			12	25	30	150	45	25	25	25	R			
	30/35			12	30	35	150	45	25	25	25	R	FMM500R-04		
	35/40			20	35	40	150	46.5	25	25	25	R			
	40/48			20	40	48	150	46.5	25	25	25	R			
	48/60			25	48	60	150	53	25	25	25	R			
	60/75	●		25	60	75	150	53	25	25	25	R	FGD500R-04		
	75/100	●		25	75	100	150	53	25	25	25	R	FGM500R-04		
	100/140	●		25	100	140	150	53	25	25	25	R			

Applicable inserts C77

● : Stock item

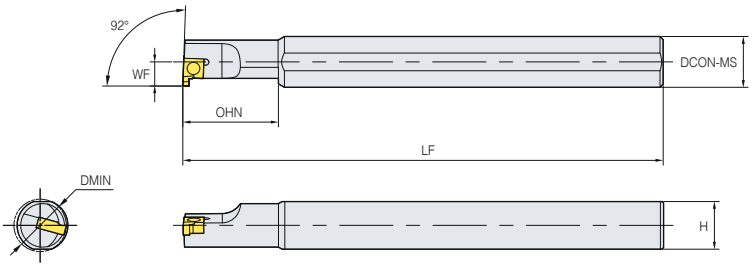
Applicable inserts

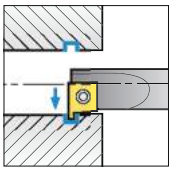
Application	Picture	Designation		Coated NC3120	NC3225	NC3030	NC5330	NC6315	PC5300	PC8110	PC9030	Uncoated H01	SSC	CW	RE	BW	INSL	AN	HAND	Configuration	Page
Face grooving	FGD	FGD	300R-03			●							30	3	0.3	2	4.06	7	N		C37 C38
			400R-04			●							40	4	0.4	3	4.56	7	N		
			500R-04			●							50	5	0.4	4	5.06	7	N		
	FGM	FGM	300R-03										30	3	0.3	2	4.06	7	N		C37 C38
			400R-04			●							40	4	0.4	3	4.56	7	N		
			500R-04										50	5	0.4	4	5.06	7	N		
	FMM	FMM	300R-03			●				●			30	3	0.3	2	4	7	N		C37 C38
			400R-04			●							40	4	0.4	3	4.5	7	N		
			500R-04										50	5	0.4	4	15	7	N		

● : Stock item

IGH For internal grooving

IG





• R type holder

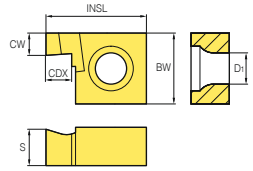
(mm)

Designation		Stock	DMIN	WF	OHN	LF	H	DCON-MS	HAND	Applicable insert	Screw	Wrench
IGH	214R	●	14	6.6	25	2	3.9	7	R	IG125~280	FTKA02565	TW07P
	216R	●	16	7.6	30	3	3.96	7	R			
	220R	●	20	9.6	40	4	4.424	7	R			

Applicable inserts C77

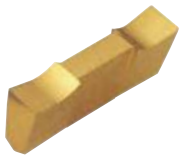
● : Stock item

Applicable inserts

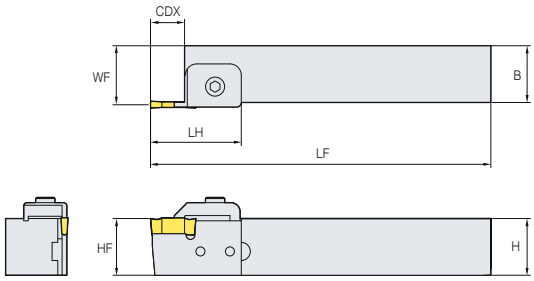
Application	Picture	Designation		Coated NC3215	NC3120	NC3225	Uncoated H01	G10	ST30A	SSC	CDX	CW	S	IC	INSL	D1	HAND	Configuration
Internal grooving		IG	125R						●	20	1.5	1.25	3.18	6.35	9	2.8	R	
			145R						●	20	1.5	1.45	3.18	6.35	9	2.8	R	
			175R						●	20	1.5	1.75	3.18	6.35	9	2.8	R	
			200R						●	20	2.3	2	3.18	6.35	9	2.8	R	
			230R						●	20	2.3	2.3	3.18	6.35	9	2.8	R	
			280R						●	20	2.3	2.8	3.18	6.35	9	2.8	R	

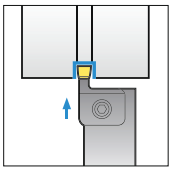
● : Stock item

DBH For deep and wide grooving



DB DC





• R type holder

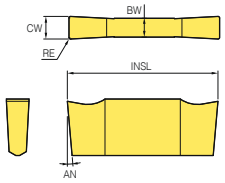
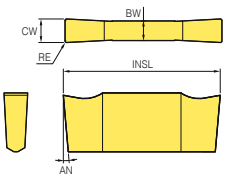
(mm)

Designation		Stock	CDX	LH	LF	WF	HF	B	H	HAND	Applicable insert		Clamp	Clamp Screw	Screw	Locator	Wrench
DBH	320R	●	13.9	40	150	20.8	20	20	20	R	DB300 DC300	DB400 DC400	CGH5R1	MHA0512	MHB0410	LD34	HW30L HW40L
	325R	●	13.9	40	150	20.8	25	25	25	R							
	520R	●	13.9	40	150	20.8	20	20	20	R	DB500 DC500	DB600	CGH5R2	MHA0512	MHB0410	LD56	HW30L HW40L
	525R	●	13.9	40	150	20.8	25	25	25	R							
	720R		13.9	40	150	20.8	20	20	20	R	DB700	DB800	CGH5R3	MHA0512	MHB0410	LD78	HW30L HW40L

Applicable inserts **C78**

● : Stock item

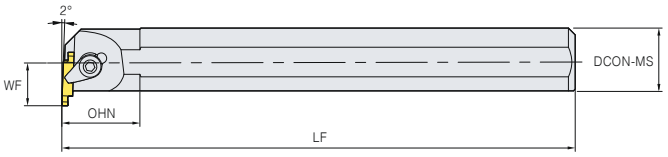
Applicable inserts

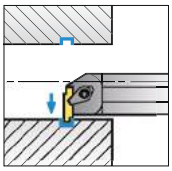
Application	Picture	Designation		Coated			Uncoated		Dimensions (mm)							Configuration
				NC3215	NC3120	NC3225	H01	G10	SSC	CW	RE	BW	INSL	AN	HAND	
Grooving		DB	300						40	3	0.2	2.5	20	5	N	
			400						40	4	0.2	2.5	20	5	N	
			500						60	5	0.2	3.5	20	5	N	
			600						60	6	0.2	3.5	20	5	N	
			700						80	7	0.2	5.5	20	5	N	
			800						80	8	0.2	5.5	20	5	N	
		DC	300						40	3	0.2	2.5	20	5	N	
			400						40	4	0.25	2.5	20	5	N	
			500						50	5	0.3	3.5	20	5	N	

● : Stock item

GFIP For Internal grooving

BF GW





• R type holder

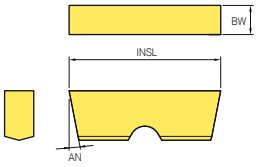
(mm)

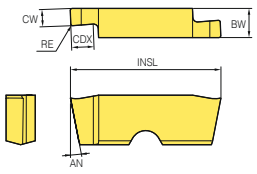
Designation		Stock R	Stock L	DMIN	WF	OHN	LF	H	DCON-MS	HAND	Applicable insert	Clamp	C-ring	Screw	Pin	Wrench
GFIP	316R/L	●	●	20	11	17	150	15	16	R/L	GW110~300R/L,BF3	CH5R2	CR04	CHX0513	PN0310	HW25L
	320R/L	●		26	13	22	150	18	20	R/L						
	325R/L	●		32	17	22	200	23	25	R/L		CH6R2	CR05	CHX0616	PN0310	HW30L
	340R/L	●		50	27	32	300	37	40	R/L						
	525R/L	●		32	17	22	200	23	25	R/L	GW315~500R/L,BF5					
	540R/L	●		50	27	32	300	37	40	R/L						
	840R/L	●		50	27	32	300	37	40	R/L	GW600~800R/L,BF8	CS8R1	-	DHA0820	PN0314	HW40L

Applicable inserts **C79**

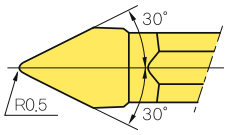
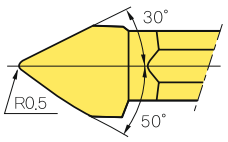
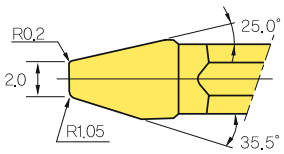
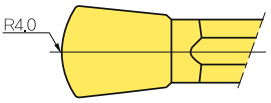
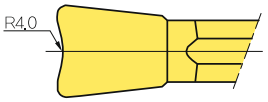
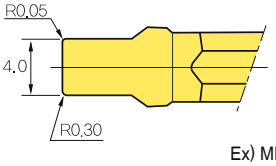
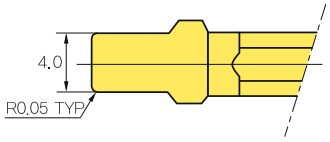
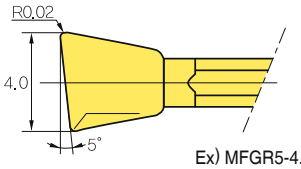
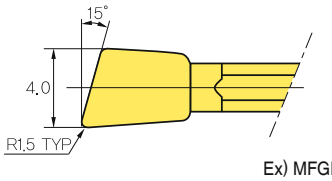
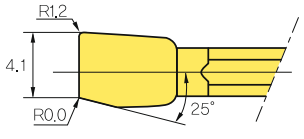
● : Stock item

Applicable inserts

Application	Picture	Designation		Uncoated ST30A	Dimensions (mm) SSC	CW	BW	INSL	AN	HAND	Configuration
Blank		BF	-3	●	30	3.1	3.1	16.4	11	N	
			-5		50	5.1	5.1	22.4	11	N	
			-8		80	8.1	8.1	27.4	11	N	

Application	Picture	Designation		Uncoated ST30A R	ST30A L	Dimensions (mm) SSC	CDX	CW	RE	INSL	AN	HAND	Configuration
Grooving		GW	110R/L	●	●	30	2.1	1.1	0.2	16	11	R/L	
			130R/L	●	●	30	2.3	1.3	0.2	16	11	R/L	
			160R/L	●	●	30	2.6	1.6	0.2	16	11	R/L	
			185R/L	●	●	30	2.9	1.85	0.2	16	11	R/L	
			215R/L	●	●	30	3.2	2.15	0.2	16	11	R/L	
			265R/L	●	●	30	3.7	2.65	0.2	16	11	R/L	
			300R/L	●	●	30	4	3	0.2	16	11	R/L	
			315R/L	●	●	50	4.2	3.15	0.3	22	11	R/L	
			415R/L	●	●	50	5.2	4.15	0.3	22	11	R/L	
			500R/L			50	6	5	0.3	22	11	R/L	
			600R/L			80	7	6	0.3	27	11	R/L	
			800R/L			80	9	8	0.3	27	11	R/L	

● : Stock item

Code system	Configuration
M F G N 4 - 0.5R - 30D ① ② ③ ④ ⑤ ⑥ ⑦ ① Multi ② Forming ③ Grinding ④ Feed Direction ⑤ Clamp part : 4mm ⑥ Nose Radius : 0.5 ⑦ Degree : 30°	 Ex) MFGN4-0.5R-30D
MFGN4 - 0.5R - L 50 D - R 30D ① ② ③ ④ ⑤ ⑥ ① Refer to No. 1 ② Nose Radius : 0.5 ③ Left ④ Degree : 50° ⑤ Right ⑥ Degree > 30°	 Ex) MFGN4-0.5R-L50D-R30D
MFGN4 - 2.0 - R 020 250 - L 105 335 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ① Refer to No. 1 ② Width of cutting edge : 2.0mm ③ Right ④ Nose Radius : 0.20 ⑤ Degree : 25.0° ⑥ Left ⑦ Nose Radius : 1.05 ⑧ Degree : 35.5°	 Ex) MFGN4-2.0-R020250-L105335
MFGN5 - 4.0R F ① ② ③ ① Refer to No. 1 ② Radius : 4.0 ③ Front(Concave)	 Ex) MFGN5-4.0RF
MFGN5 - 4.0R B ① ② ③ ① Refer to No. 1 ② Radius : 4.0 ③ Back(Concave)	 Ex) MFGN5-4.0RB
MFGN5 - 4.0 - R 005 - L 030 ① ② ③ ④ ⑤ ⑥ ① Refer to No. 1 ② Width of cutting edge : 4.0mm ③ Right ④ Nose Radius : 0.05 ⑤ Left ⑥ Nose Radius : 0.30	 Ex) MFGN5-4.0-R005-L030
MFGN5 - 4.0 - 0.05 R ① ② ③ ① Refer to No. 1 ② Width of cutting edge: 4.0mm ③ Nose Radius : 0.05	 Ex) MFGN5-4.0-0.05R
MFG R 5 - 4.0 - 5D - R 002 - L 115 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ① Refer to No. 1 ② Right ③ Clamp part: 5mm ④ Width of cutting edge : 4.0mm ⑤ Lead angle : 5° ⑥ Right ⑦ Nose Radius : 0.02 ⑧ Left ⑨ Nose Radius : 1.15	 Ex) MFGR5-4.0-5D-R002-L115
MFG L 5 - 4.0 - 15D - 1.5R ① ② ③ ④ ⑤ ⑥ ① Refer to No. 1 ② Left ③ Clamp part: 5mm ④ Width of cutting edge : 4.0mm ⑤ Lead angle : 15° ⑥ Right Nose Radius : 1.5	 Ex) MFGL5-4.0-15D-1.5R
MFG R 5 - 4.10 - 25D - R012 - L000 ① ② ③ ④ ⑤ ⑥ ⑦ ① Refer to No. 1 ② Right ③ Clamp part: 5mm ④ Width of cutting edge : 4.1mm ⑤ Degree : 25° ⑥ Right Nose Radius : 1.2 ⑦ Left Nose Radius : 0.0	 Ex) MFGR5-4.10-25D-R012-L000

Code system

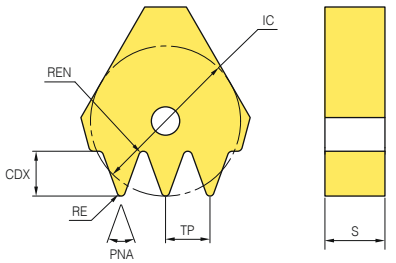
KP	27	064	-	R0.425	N3
KORLOY PULLEY	ØD	W		RE	No. of flutes

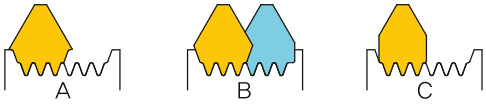
Ex)

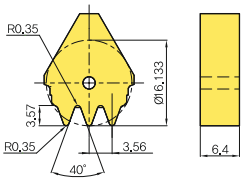
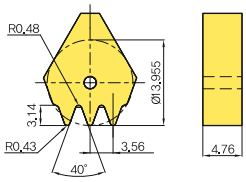
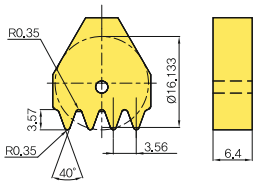
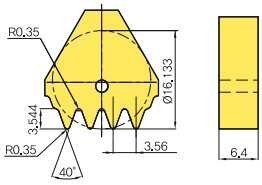
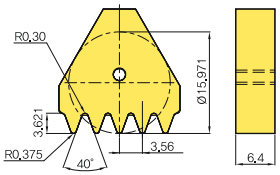
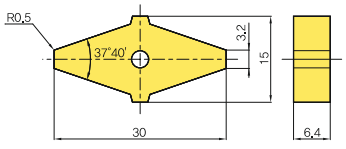
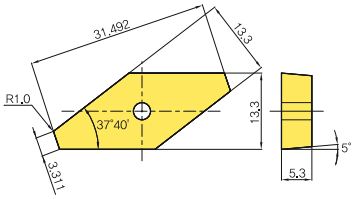
I.C	T	R	Z
Ø15.875	6.4	0.425	3

» Special types are available for quotation

Insert for machining of pulley



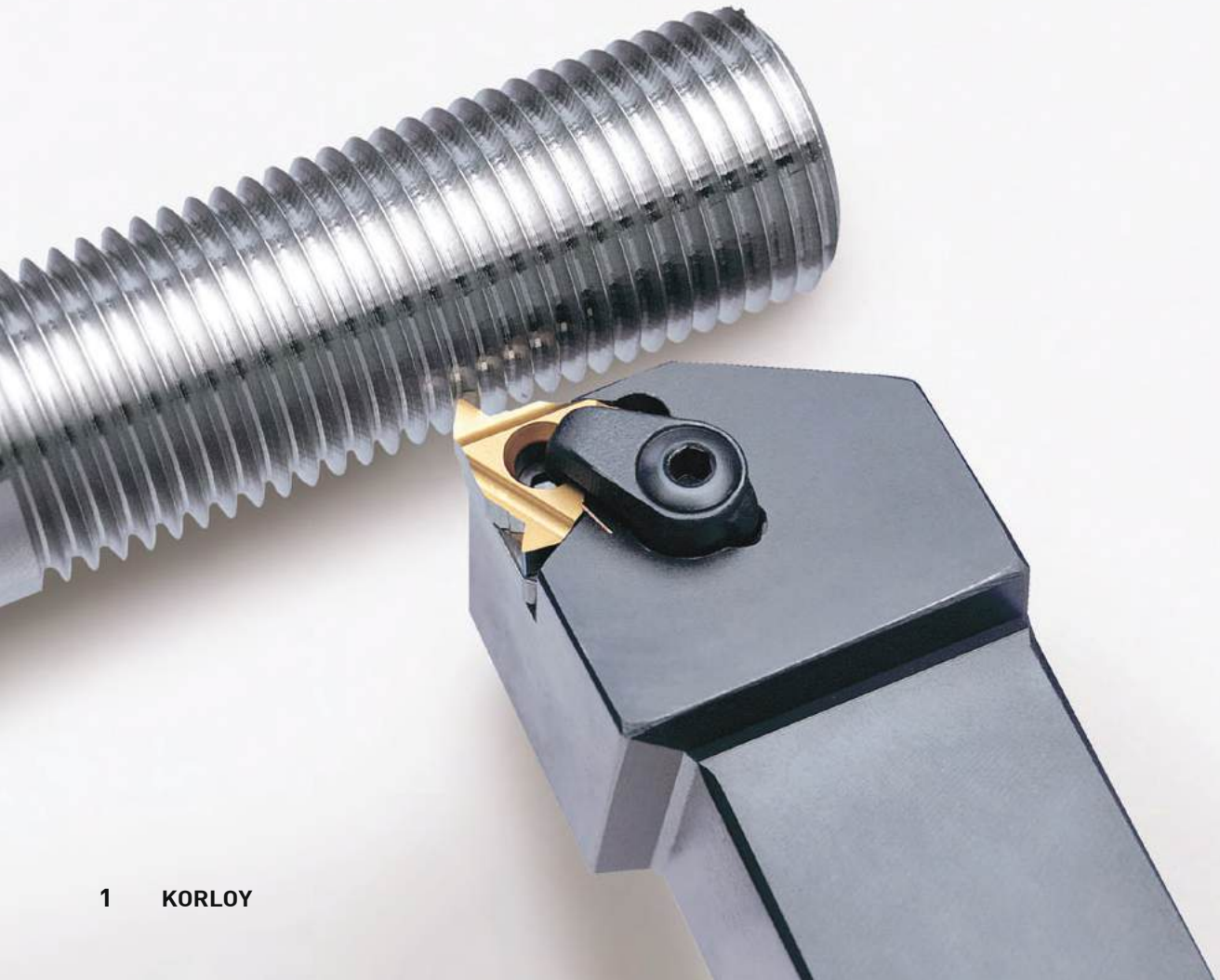


Specifications	Standard designation	Specifications	Standard designation
	**KP27064-R0.35-N3** (**Former:** DF356-3B)		**KP270476-R0.43-N3** (**Former:** DF356-3SR)
	**KP27064-R0.35-N4** (**Former:** DF356-4B)		**KP27064-R0.35-N4-A** (**Former:** DF356-4X)
	**KP27064-R0.375-N5** (**Former:** DF356-5B)		**UF320**
	**VF13M522**		

PART

THREADING

Korloy threading tools are available for machining various shapes of thread at various pitches while ensuring high quality performances



Technical information for THREADING

Threading Code System

D3 Threading Holder Code System
D3 Threading Insert Code System

Technical Information for Threading

D4 Technical Information for Threading
D10 Threading Inserts with Chip Breaker

Threading Inserts

D11 Partial profile 60°
D12 Partial profile 55°
D13 ISO Metric
D17 American UN (UN, UNC, UNF, UNEF, UNS)
D19 Whitworth (BSW, BSF, BSP, BSB)
D23 British Standard Pipe Thread (BSPT)
D23 National Pipe Thread (NPT)
D24 National Pipe Threads-Dryseal (NPTF)
D24 Round DIN405 (RD)
D25 Trapez DIN 103 (TR)
D25 American ACME (ACME)
D26 Stub ACME (STACME)
D27 UNJ (Unified Constant Thread)
D29 American Buttress (ABUT)
D29 British Buttress (BBUT)
D30 Metric Buttress (SAGE)
D30 API
D31 API Buttress Casing (BUT)
D31 API Round Casing & Tubing (APIRD)
D31 Extreme Line Casing (EL)

Threading Holders

D32 External Holders
D33 Internal Holders
D34 Vertical Type Holders

Threading Holder Code System

E R H 10 (N) - 11 (C)

1 Holder type · 2 Hand of insert · 3 Name · 4 Height of shank(Ø) · 5 Shim · 6 Insert size · 7 Clamping system

1 Holder type
E R H 10 (N) - 11 (C)

E: For External I: For Internal

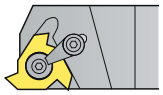
2 Hand of insert
E R H 10 (N) - 11 (C)

R: Right handed L: Left handed

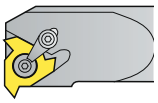
3 Name
E R H 10 (N) - 11 (C)

H : Holder

4 Height of shank(Ø)
E R H 10 (N) - 11 (C)



- External
8, 10, 12, 16, 20, 25, 32, 40, 50



- Internal
10, 12, 13, 16, 20, 25, 32, 49, 50, 60

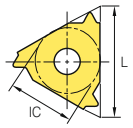
* Refer to the specification for shank diameter information

5 Shim
E R H 10 (N) - 11 (C)

No code: Shim required
N: No shim required

6 Insert size (mm)
E R H 10 (N) - 11 (C)

11 : IC = 6.35
16 : IC = 9.525
22 : IC = 12.7
27 : IC = 15.875



7 Clamping system
E R H 10 (N) - 11 (C)

No code: Screw on system
C: Clamp on system

Threading Insert Code System

E R M 16 - 1.5 ISO

1 Insert type · 2 Hand of insert · 3 Chip breaker · 4 Insert size · 5 Pitch · 6 Type

1 Insert type
E R M 16 - 1.5 ISO

E: For External I: For Internal

2 Hand of insert
E R M 16 - 1.5 ISO

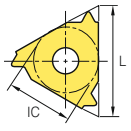
R: Right handed L: Left handed

3 Chip breaker
E R M 16 - 1.5 ISO

M: With chip breaker

4 Insert size (mm)
E R M 16 - 1.5 ISO

11 : IC = 6.35
16 : IC = 9.525
22 : IC = 12.7
27 : IC = 15.875



Insert shape

< ER / IR >

< ERM / IRM >

5 Pitch
E R M 16 - 1.5 ISO

Full profile	
mm	tpi
0.35 - 6.0	72 - 3

Partial profile		
	mm	tpi
A	0.5 - 1.5	48 - 16
AG	0.5 - 3.0	48 - 8
G	1.75 - 3.0	14 - 8
N	3.5 - 5.0	7 - 5
Q	5.5 - 6.0	4.5 - 4

6 Type
E R M 16 - 1.5 ISO

Partial profile 60°
Partial Profile 55°
ISO Metric (Full Profile)
American UN (Full Profile) UN, UNC, UNF, UNEF
Whitworth (Full Profile) BSW, BSF, BSP
British Standard Pipe thread (Full Profile) BSPT
National Pipe Thread (Full Profile) NPT
National Pipe Threads-Dryseal (Full Profile) NPTF
Round DIN 405
Trapez DIN 103
American ACME
Stub ACME
UNJ
American Buttress
British Buttress
Metric Buttress-Sagengewinde
API
API Buttress Casing
API Round Casing & Tubing
EL-Extreme Line Casing

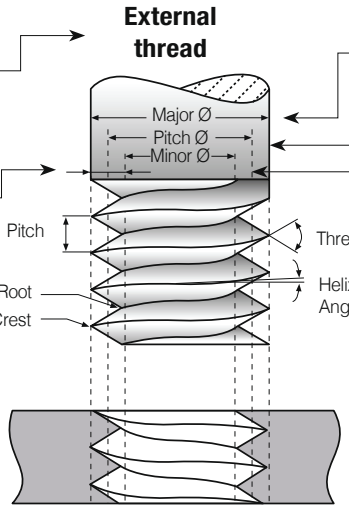
Special features

External thread
A thread on the external surface of a cylinder screw or cone

Depth of thread
The distance between the crest and root measured from normal to the axis

Pitch
The distance between the corresponding points on adjacent thread forms measured parallel to the axis. This distance can be defined in millimeters or by the tpi (threads per inch), which is the reciprocal of the pitch

Taper thread
A thread formed on a cone



Major diameter
The largest diameter of a screw thread

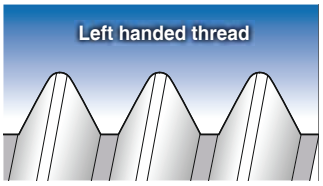
Pitch diameter
On a straight thread, the diameter of an imaginary cylinder, the surface of which cuts the thread forms where the width of the thread and groove are equal

Minor diameter
The smallest diameter of a screw thread

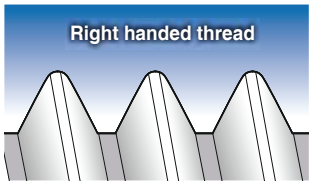
Helix angle
For a straight thread, where the lead of the thread and the pitch diameter circle circumference form a right angled triangle, the helix angle is the angle opposite of the lead

Straight thread
A thread formed on a cylinder

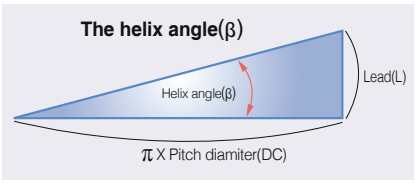
Internal thread
A thread on the internal surface of a cylinder or cone



A thread which, when viewed axially, winds in a counter clockwise and receding direction. All left handed threads are designated LH



A thread which, when viewed axially, winds in a clockwise and receding direction. Threads are always right handed unless they are specified

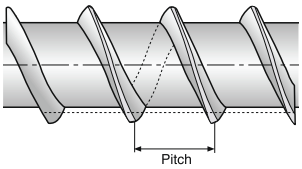


For a straight thread, where the lead of the thread and the pitch diameter circle circumference form a right angled triangle, the helix angle is the angle opposite of the lead

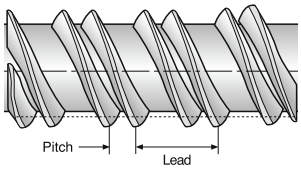
Machining a multi-start thread

- A thread in which the lead is an integral multiple, greater than one, of the pitch. A multi-start thread permits a more rapid advance without a coarser (larger) thread form

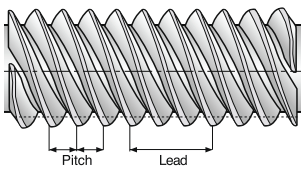
First start machined



Second start machined

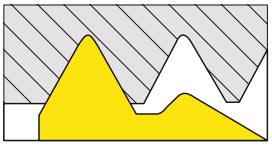


Third start machined (Final, 3 starts thread)



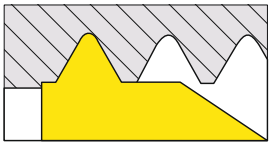
Insert profile style

Partial profile



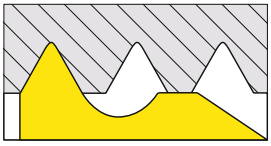
The V partial profile insert cuts without topping the outer diameter of the thread. The same insert can be used for a range of different thread pitches which have a common thread angle

Full profile



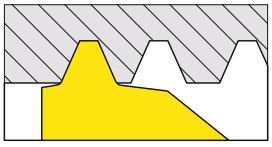
The full profile insert will form a complete thread profile including the crest. For every thread pitch and standard, a separate insert is required

Full profile for fine pitches



The full profile for Fine Pitches will form a complete thread the topping of the outer diameter is generated by second tooth

Semifull

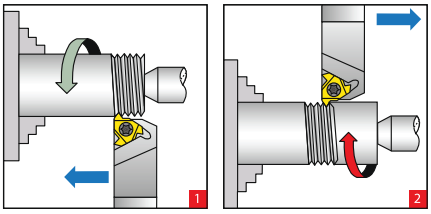


The Semi profile insert will form a complete thread including crest radius but without topping the outer diameter mainly used for trapezoidal profiles

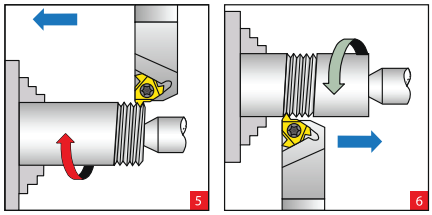
Thread turning method

Thread	Inserts & Tool holder	Rotation	Feed direction	Helix method	Drawing no.
Right Handed External	EX RH	Counter clockwise	Towards chuck	Regular	1
	EX LH	Clockwise	From chuck	Reversed	2
Right Handed Internal	IN RH	Counter clockwise	Towards chuck	Regular	3
	IN LH	Clockwise	From chuck	Reversed	4
Left Handed External	EX LH	Clockwise	Towards chuck	Regular	5
	EX RH	Counter clockwise	From chuck	Reversed	6
Left Handed Internal	IN LH	Clockwise	Towards chuck	Regular	7
	IN RH	Counter clockwise	From chuck	Reversed	8

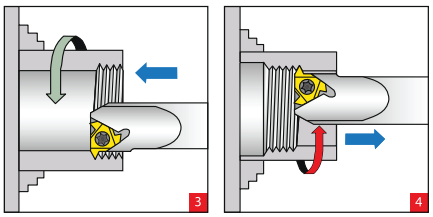
External RH thread



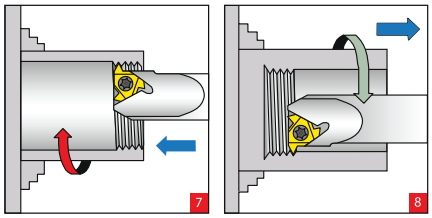
External LH thread



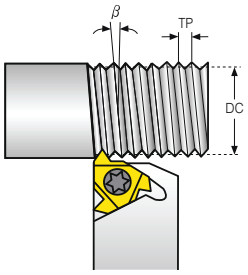
Internal RH thread



Internal LH thread



Calculating the helix angle (β)



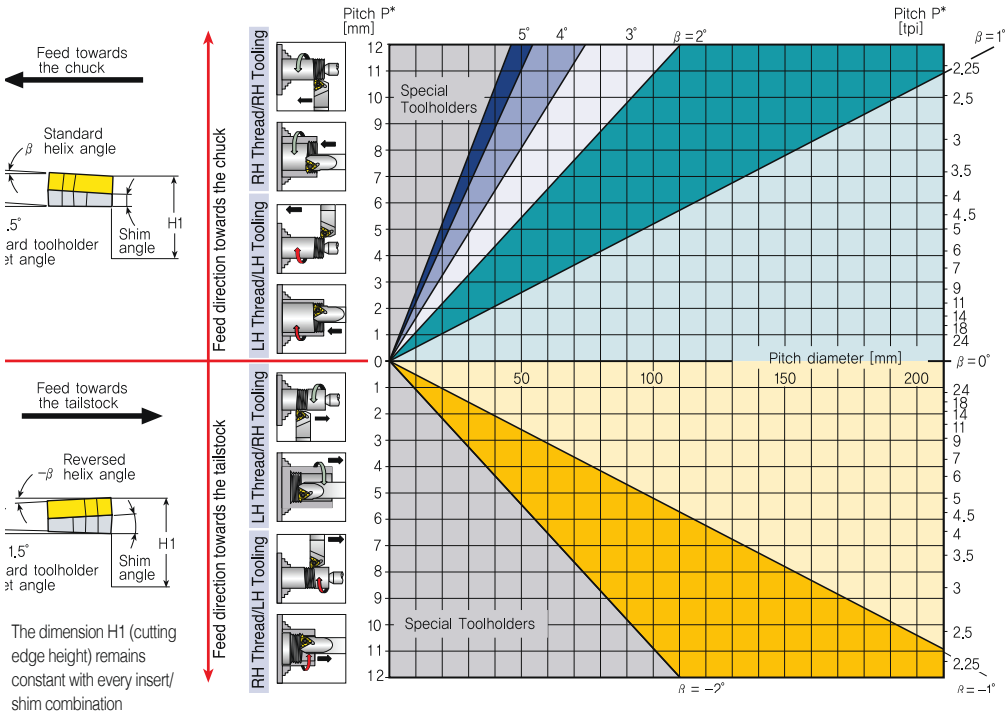
• The helix angle is calculated by the ollowing formula:

$$\beta = \tan^{-1}\frac{TP \times N}{\pi \times DC}$$

β: Helix angle (°)
P: Pitch (mm)
N: No. of starts
D: Pitch diameter (mm)
Lead = P x N

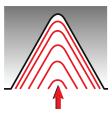
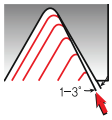
• The helix angle can also be found from the diagram below

(Helix angle diagram)



The dimension H1 (cutting edge height) remains constant with every insert/ shim combination

Thread infeed method

Infeed	Application	
 **Radial infeed**	• When the pitch is smaller than 16 tpi • For material with short chips • For work with hardened material	Radial infeed is the simplest and quickest method The feed is perpendicular to the turning axis, and both flanks of the insert perform the cutting operation Radial infeed is recommended in 3 cases
 **Flank infeed (modified)**	• When the thread pitch is greater than 16 tpi. Using the radial method,the effective cutting edge length is too large, resulting in chatter. for TRAPEZ and ACME. The radial method results in three\ cutting edges, making chip flow very difficult	Flank infeed is recommended in the following cases
Alternate flank infeed	• This method divides the load equally on both flanks, resulting in equal wear along the cutting edges Alternate flank infeed requires more complicated programming, and is not available on all lathes	Use of the alternate flank method is recommended especially in large pitches and for materials with long chips

Shim

Standard shim

Resultant Helix Angle1.5°

Insert size	**IC**	9.525		12.7		15.875	
	L	16		22		27	
Holder		ER(L)H	IR(L)H	ER(L)H	IR(L)H	ER(L)H	IR(L)H
Ordering code		ATE16	ATI16	ATE22	ATI22	ATE27	ATI27

※ Standard shim has Resultant Helix Angle 1.5°

Application grade

Grade	Features		Available insert type
PC5300	Universal grade	• For chip breaker type only • Stable machining on a wide application due to fine-grained carbide substrate with balanced heat resistance and toughness • Excellent wear resistance and oxidation resistance due to AiTN coating film Outstanding performance on high speed machining	ERM/IRM (Insert with Chip breaker)
PC3030T	Specialized grade for threading inserts	• A tough sub-micron substrate with TiAlN coating provides good fracture toughness and excellent wear resistance • Outstanding performance on STS and hard to cut materials	ER/IR (Ground insert)
PC9070T	Specialized grade for threading inserts	• Strong wear resistance in stainless machining thanks to multilayer PVD coatings	E/IR (Ground insert)

Application range

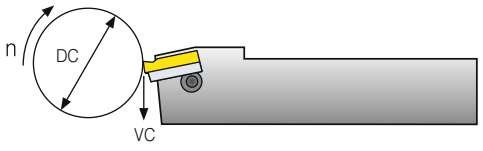
Workpiece		● ◄·····►
P	**Carbon steel, Alloy steel, Cast Steel**	PC5300 PC3030T
M	**Stainless steel**	PC5300 PC3030T PC9070T
K	**Cast Steel**	PC5300 PC3030T
N	**Aluminum, Copper**	PC5300 PC3030T

Recommended cutting speed as per workpiece

Workpiece			Hardness brinell (HB)	vc (m/min)		
				PC3030T	PC9070T	PC5300
P	Carbon steel	Low carbon (C=0.1-0.25 %)	125	115~190		110~190
		Medium carbon (C=0.25-0.55 %)	150	100~175		100~165
		High carbon (C=0.55-0.85 %)	170	90~155		90~155
	Low alloy steel	Non-hardened	180	100~180		100~180
		Hardened	275	75~140		75~140
		Hardened	350	70~135		70~135
	High alloy steel	Annealed	200	80~120		80~120
		Hardened	325	50~100		50~100
	Cast steel	Low alloy	200	70~130		70~130
		High alloy	225	60~120		60~120
M	Stainless steel ferritic	Non-hardened	200	70~130	70~150	70~130
		Hardened	330	50~95	60~125	50~95
	Stainless steel austenitic	Austenitic	180	80~120	90~160	80~120
		Super austenitic	200	30~100	40~120	30~100
	Stainless steel cast ferritic	Non-hardened	200	90~120	90~150	90~120
		Hardened	330	65~110	65~120	65~110
	Stainless steel cast austenitic	Austenitic	200	85~110	85~120	85~110
		Hardened	330	60~100	60~110	60~100
	High temperature alloy	Annealed (Iron based)	200	45~60		45~60
		Aged (Iron based)	280	30~50		30~50
		Annealed (Nickel or Cobalt based)	250	20~30		20~30
		Aged (Nickel or Cobalt based)	350	15~25		15~25
	Titanium alloy	99.5% pure Titanium	400Rm	140~170		140~170
		Titanium alloy	1050Rm	50~70		50~70
K	Extra hard steel	Hardened & tempered	55HRC	45~60		45~60
	Malleable cast iron	Ferritic (short chips)	130	70~120		70~120
		Pearlitic (long chips)	230	70~120		70~120
	Gray cast iron	Low tensile strength	180	70~130		70~130
		High tensile strength	260	60~100		60~100
	Nodular SG iron	Ferritic	160	125~160		125~160
		Pearlitic	260	90~120		90~120
N	Aluminum alloy wrought	Non-aging	60	100~250		100~250
		Aged	100	80~180		80~180
	Aluminum alloy	Cast	75	200~400		200~400
		Cast & aged	90	200~280		200~280
		Cast Si 13-22%	130	60~150		60~180
	Copper and copper alloy	Brass	90	80~120		80~210
		Bronze and non-leaded copper	100	80~120		80~210

Calculation of n [RPM]

$$n = \frac{vc \times 1000}{\pi \times DC} \qquad vc = \frac{\pi \times DC \times n}{1000}$$



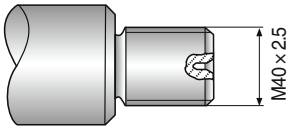
n: Revolution Per Minute [min-1]
vc: Cutting Speed [m/min]
D: Workpiece Diameter [mm]

Number of passes

Pitch	mm	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	8.00
	tpi	48	32	24	20	16	14	12	10	8	7	6	5.5	5	4.5	4	3
No. of passes		4~6	4~7	4~8	5~9	6~10	7~12	7~12	8~14	9~16	10~18	11~18	11~19	12~20	12~20	12~20	15~24

※ One cutting depth is calculated by total cutting depth divided into machining times
ex) ER16-1.5ISO, hmin 0.92: If 10 times machining, one cutting depth is 0.092 (0.92/10)

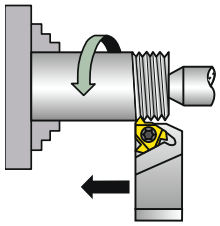
Step by step thread turning



Application

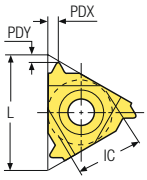
- **Thread:** External right Handed ISO metric M40x2.5
- **Material:** 4140 (25 HRC)

1 Choose the thread turning method



Feed direction towards the chuck was chosen
Therefore an external right Handed insert and
an external right Handed holder will be used

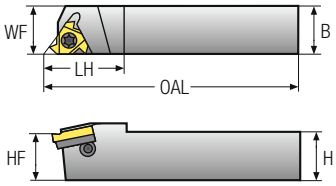
2 Choose the insert size



- **Chosen insert:** ER16-2.5 ISO

Insert size	Pitch	Ordering code	Shim	Tool holder
IC	mm	RH (Right Handed)	RH (Right Handed)	
9.525	2.5	ER16-2.5ISO	ATE16	ERH□□-16

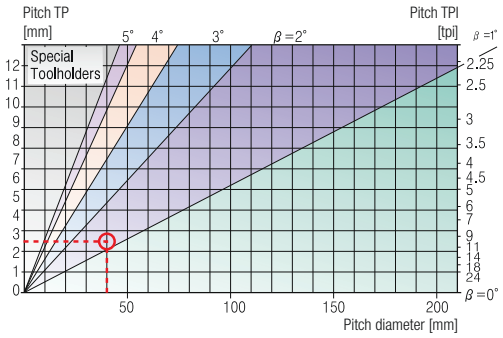
3 Choose the tool holder



- **Chosen tool holder:** ERH 25-16

Insert size	Pitch	Dimensions (mm)				
IC	RH (Right Handed)	H = HF	B	WF	OAL	LH
9.525	ERH25-16	25	25	25	153.6	30

4 Determine



- From the table, using a pitch of 2.5 mm (10 tpi) and a workpiece diameter of 40 mm (1.57"), we find the helix angle to be 1.5°

5 Choose the correct shim

Resultant Helix angle		1.5°
Insert size	IC	9.525
	L	16
Ordering code		ATE16

6 Choose the carbide grade and cutting speed

- **Carbide grade chosen:** PC3030T
- **Cutting speed:** 140 m/min

Workpiece			HB	vc (m/min)
				PC3030T
P	Low alloy steel	Non-hardened	180	85~145
		Hardened	275	75~140
		Hardened	350	70~135

7 Determine the number of passes

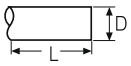
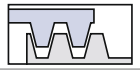
- **Carbide grade chosen:** PC3030T
- **Cutting speed:** 140 m/min

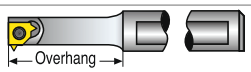
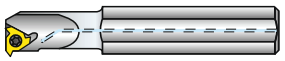
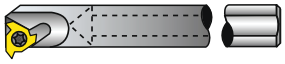
Pitch	mm	1.50	1.75	2.00	2.50	3.00	3.50	4.00
	TPI	16	14	12	10	8	7	6
No.of passes		6~10	7~12	7~12	8~14	9~16	10~18	11~18

8 Summary

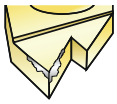
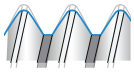
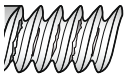
Thread type	ISO M40 x 2.5 External right handed
1. Feed direction	Towards the chuck
2. Insert and grade	ER16–2.5ISO, PC3030T
3. Tool holder	ERH25–16
4. Helix angle	1.5°
5. Shim	ATE16
6. Cutting speed	140 m/min
7. Number of passes	10

Cutting condition depending on

Workpiece	Material type	
	Material dimension	
	Diameter and length chipflow character	
	Material hardness	
Thread application	External or internal	
	Profile shape	
	Surface finish	
Machine	Machine stability	
	Max. RPM	
	Clamping system stability	

Coolant	Coolant type	
Holders	Holder cross section area	
	Holder overhang	
	Through coolant option	
	Shank type: Carbide, alloy	
Insert	Carbide implant grade	
	Profile shape: Pitch and depth	
	Nose radius	
	Chip breaker style	

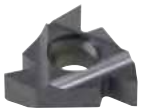
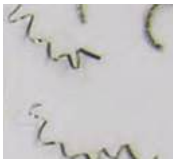
Trouble shooting

Problem	Possible cause	Solution
Increased flank wear	Cutting speed too high	Reduce cutting speed/use coated insert
	Depth of cut too low/too many passes	Increase the depth of cut per pass
	Unsuitable carbide grade	Use a coated carbide grade
	Insufficient cooling	Increase coolant flow rate
 **Uneven cutting edge wear**	Incorrect helix angle	Choose the correct shim
	Wrong infeed method	Use the alternating flank infeed method
Extreme plastic deformation	Depth of cut too large	Decrease depth of cut/ increase number of passes
	Insufficient cooling	Increase coolant flow rate
	Cutting speed too high	Reduce cutting speed
	Unsuitable carbide grade	Use a tougher carbide
	Nose radius too small	Use an insert with a larger radius, if possible
Cutting edge breakage	Depth of cut too large	Decrease depth of cut/ increase number of passes.
	Extreme plastic deformation	Use a tougher carbide
	Insufficient cooling	Increase flow rate and/ or correct flow direction
	Unsuitable carbide grade	Use a tougher carbide
	Instability	Check stability of the system
Built-up edge	Incorrect cutting speed	Change the cutting speed
	Unsuitable carbide grade	Use a coated carbide
 **Thread profile is too shallow**	The tool is not at the workpiece axis height	Change tool height
	Insert is not machining the thread crest	Measure the workpiece diameter
	Worn insert	Change the cutting edge sooner
 **Poor surface quality**	Too low cutting speed	Increase cutting speed
	Wrong shim	Choose correct shim
	Flank infeed method is not appropriate	Use the alternate flank or radial infeed method

Threading Inserts with Chip Breaker

- Economical insert
- Good toughness and high accuracy as ground type inserts
- Exclusive insert design improves chip control
- New grade for general application of various kinds of workpieces

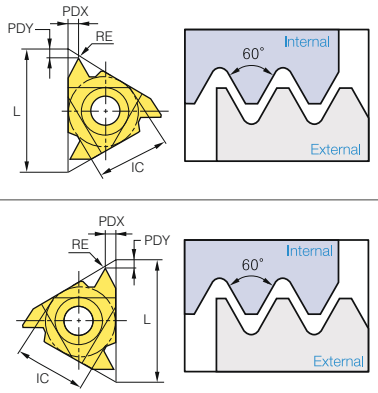
Features

Type	Ground insert		Insert with a chip breaker			
C/B Code	None		None		U	
Designation	ER16-1.5ISO		ERM16-1.5ISO		ERM16-1.5ISO-U	
Machining	External	Internal	External	Internal	External	Internal
Insert Shape						
Chip Shape						
Class	P, M, K, N, S		P, M, K		P, M, K	
Application	G-Class		M-Class		M-Class	
Features	• Groove-shaped chip breaker with superior chip evacuation lowers cutting load • Enables high precision machining • Applicable for machining of various shapes of threads • Applicable for machining of various workpieces		• Unique 3 dimensional chip breaker improves machinability with good chip control • Excellent cutting edge treatment technology ensures high precision sharp cutting edge		• Groove-shaped chip breaker with superior chip evacuation lowers cutting load • Reduces machining pass by 10~30% • Excellent cutting edge treatment achieves high precision sharp cutting edge	

Partial profile 60°

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch TP	Pitch TPI	IC	L	RE	PDY	PDX
External	ER 11–A60	●	●	EL 11–A60	●		0.5~1.5	48~16	6.35	11	0.05	0.8	0.9
	16–A60	●	●	16–A60	●		0.5~1.5	48~16	9.525	16	0.05	0.8	0.9
	16–G60	●		16–G60	●		1.75~3.0	14~8	9.525	16	0.27	1.2	1.7
	16–AG60	●	●	16–AG60	●		0.5~3.0	48~8	9.525	16	0.08	1.2	1.7
	22–N60	●	●	22–N60	●		3.5~5.0	7~5	12.7	22	0.53	1.7	2.5
	27–Q60	●	●	27–Q60	●		5.5~6.0	4.5~4	15.875	27	0.64	2.1	3.1
Internal	IR 11–A60	●	●	IL 11–A60	●	●	0.5~1.5	48~16	6.35	11	0.05	0.8	0.9
	16–A60	●		16–A60	●		0.5~1.5	48~16	9.525	16	0.05	0.8	0.9
	16–G60	●		16–G60	●		1.75~3.0	14~8	9.525	16	0.16	1.2	1.7
	16–AG60	●	●	16–AG60	●		0.5~3.0	48~8	9.525	16	0.05	1.2	1.7
	22–N60	●	●	22–N60	●		3.5~5.0	7~5	12.7	22	0.30	1.7	2.5
	27–Q60	●	●	27–Q60			5.5~6.0	4.5~4	15.875	27	0.30	1.8	2.7

Configuration



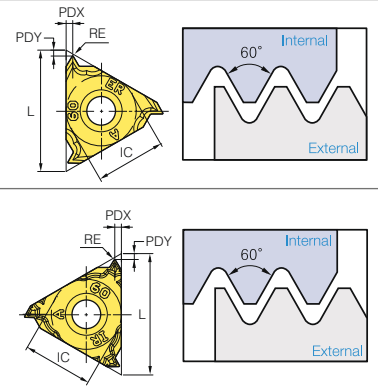
Applicable holders **D32, D33**

● : Stock item

Partial profile 60° (M chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch TP	Pitch TPI	IC	L	RE	PDY	PDX
External	ERM 16–A60	●				0.5~1.5	48~16	9.525	16	0.08	0.8	0.9
	16–G60	●				1.75~3.0	14~8	9.525	16	0.27	1.2	1.7
	16–AG60	●				0.5~3.0	48~8	9.525	16	0.08	1.2	1.7
	22–N60	●				3.5~5.0	7~5	12.7	22	0.53	1.7	2.5
Internal	IRM 11–A60	●				0.5~1.5	48~16	6.35	11	0.08	0.8	0.9
	16–A60	●				0.5~1.5	48~16	9.525	16	0.08	0.8	0.9
	16–G60	●				1.75~3.0	14~8	9.525	16	0.12	1.2	1.7
	16–AG60	●				0.5~3.0	48~8	9.525	16	0.08	1.2	1.7
	22–N60	●				3.5~5.0	7~5	12.7	22	0.30	1.7	2.5

Configuration



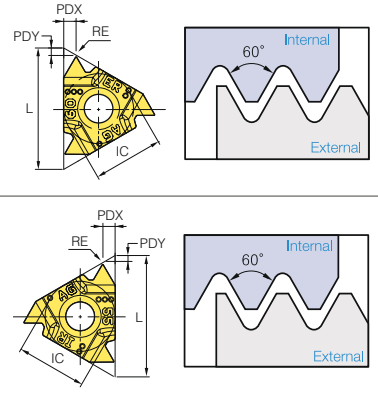
Applicable holders **D32, D33**

● : Stock item

Partial profile 60° (U chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch TP	Pitch TPI	IC	L	RE	PDY	PDX
External	ERM 16–AG60–U					0.5~3.0	48~8	9.525	16	0.08	1.2	1.7
Internal	IRM 16–AG60–U					0.5~3.0	48~8	9.525	16	0.08	1.2	1.7

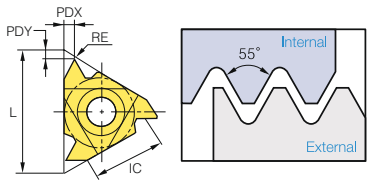
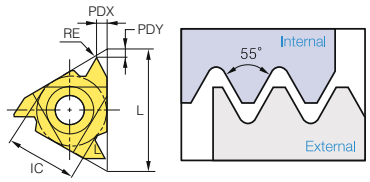
Configuration



Applicable holders **D32, D33**

● : Stock item

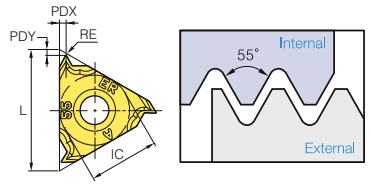
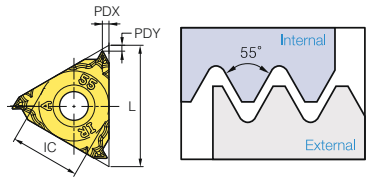
Partial profile 55°

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch TP	Pitch TPI	IC	L	RE	PDY	PDX	Configuration
External	ER 11–A55	●		EL 11-A55			0.5~1.5	48~16	6.35	11	0.05	0.8	0.9	
	16–A55	●		16-A55	●		0.5~1.5	48~16	9.525	16	0.05	0.8	0.9	
	16–G55	●		16-G55			1.75~3.0	14~8	9.525	16	0.21	1.2	1.7	
	16–AG55	●		16-AG55	●		0.5~3.0	48~8	9.525	16	0.07	1.2	1.7	
	22–N55	●		22-N55			3.5~5.0	7~5	12.7	22	0.43	1.7	2.5	
	27–Q55			27-Q55			5.5~6.0	4.5~4	15.875	27	0.60	2.0	2.9	
Internal	IR 11–A55	●		IL 11-A55	●		0.5~1.5	48~16	6.35	11	0.05	0.8	0.9	
	16–A55	●		16-A55			0.5~1.5	48~16	9.525	16	0.05	0.8	0.9	
	16–G55	●		16-G55			1.75~3.0	14~8	9.525	16	0.21	1.2	1.7	
	16–AG55	●		16-AG55	●		0.5~3.0	48~8	9.525	16	0.07	1.2	1.7	
	22–N55	●		22-N55			3.5~5.0	7~5	12.7	22	0.43	1.7	2.5	
	27–Q55			27-Q55			5.5~6.0	4.5~4	15.875	27	0.60	2.0	2.9	

Applicable holders **D32, D33**

●: Stock item

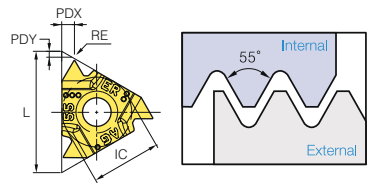
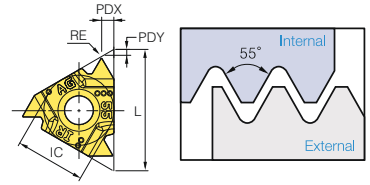
Partial profile 55° (M chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch TP	Pitch TPI	IC	L	RE	PDY	PDX	Configuration
External	ERM 16-A55	●				0.5~1.5	48~16	9.525	16	0.08	0.8	0.9	
	16-G55	●				1.75~3.0	14~8	9.525	16	0.21	1.2	1.7	
	16-AG55	●				0.5~3.0	48~8	9.525	16	0.07	1.2	1.7	
	22-N55	●				3.5~5.0	7~5	12.7	22	0.43	1.7	2.5	
Internal	IRM 11-A55	●				0.5~1.5	48~16	6.35	11	0.08	0.8	0.9	
	16-A55	●				0.5~1.5	48~16	9.525	16	0.05	0.8	0.9	
	16-G55					1.75~3.0	14~8	9.525	16	0.08	1.2	1.7	
	16-AG55	●				0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	
	22-N55	●				3.5~5.0	7~5	12.7	22	0.43	1.7	2.5	

Applicable holders **D32, D33**

●: Stock item

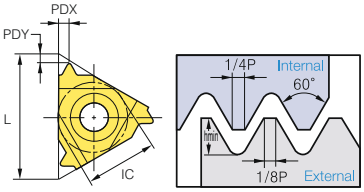
Partial profile 55° (U chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch TP	Pitch TPI	IC	L	RE	PDY	PDX	Configuration
External	ERM 16-AG55-U					0.5~3.0	48~8	9.525	16	0.07	1.2	1.7	
Internal	IRM 16-AG55-U					0.5~3.0	48~8	9.525	16	0.08	1.2	1.7	

Applicable holders **D32, D33**

●: Stock item

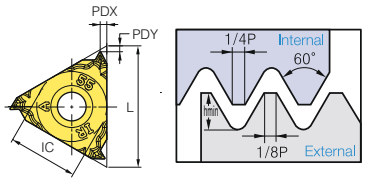
ISO Metric

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TP	IC	L	hmin	PDY	PDX	
External	ER 11-0.35ISO	●		EL 11-0.35ISO			0.35	6.35	11	0.21	0.8	0.4	
	11-0.4ISO	●		11-0.4ISO			0.4	6.35	11	0.25	0.7	0.4	
	11-0.45ISO	●		11-0.45ISO			0.45	6.35	11	0.28	0.7	0.4	
	11-0.5ISO	●		11-0.5ISO			0.5	6.35	11	0.31	0.6	0.4	
	11-0.6ISO	●		11-0.6ISO			0.6	6.35	11	0.37	0.6	0.6	
	11-0.7ISO	●		11-0.7ISO			0.7	6.35	11	0.43	0.6	0.6	
	11-0.75ISO			11-0.75ISO			0.75	6.35	11	0.46	0.6	0.6	
	11-0.8ISO	●		11-0.8ISO			0.8	6.35	11	0.49	0.6	0.6	
	11-1.0ISO	●		11-1.0ISO			1.0	6.35	11	0.61	0.7	0.7	
	11-1.25ISO	●	●	11-1.25ISO			1.25	6.35	11	0.77	0.8	0.9	
	11-1.5ISO	●		11-1.5ISO	●		1.5	6.35	11	0.92	0.8	1.0	
	11-1.75ISO	●		11-1.75ISO			1.75	6.35	11	1.07	0.8	1.1	
	16-0.35ISO			16-0.35ISO			0.35	9.525	16	0.21	0.8	0.4	
	16-0.4ISO			16-0.4ISO			0.4	9.525	16	0.25	0.7	0.4	
	16-0.45ISO	●		16-0.45ISO			0.45	9.525	16	0.28	0.7	0.4	
	16-0.5ISO	●		16-0.5ISO	●		0.5	9.525	16	0.31	0.6	0.4	
	16-0.6ISO	●		16-0.6ISO			0.6	9.525	16	0.37	0.6	0.6	
	16-0.7ISO	●		16-0.7ISO			0.7	9.525	16	0.43	0.6	0.6	
	16-0.75ISO	●		16-0.75ISO			0.75	9.525	16	0.46	0.6	0.6	
	16-0.8ISO	●	●	16-0.8ISO			0.8	9.525	16	0.49	0.6	0.6	
	16-1.0ISO	●	●	16-1.0ISO	●		1.0	9.525	16	0.61	0.7	0.7	
	16-1.25ISO	●	●	16-1.25ISO	●		1.25	9.525	16	0.77	0.8	0.9	
	16-1.5ISO	●	●	16-1.5ISO	●		1.5	9.525	16	0.92	0.8	1.0	
	16-1.75ISO	●	●	16-1.75ISO			1.75	9.525	16	1.07	0.9	1.2	
	16-2.0ISO	●	●	16-2.0ISO	●		2.0	9.525	16	1.23	1.0	1.3	
	16-2.5ISO	●	●	16-2.5ISO			2.5	9.525	16	1.53	1.1	1.5	
	16-3.0ISO	●	●	16-3.0ISO	●		3.0	9.525	16	1.84	1.2	1.6	
	22-3.5ISO	●	●	22-3.5ISO			3.5	12.7	22	2.15	1.6	2.3	
	22-4.0ISO	●	●	22-4.0ISO	●		4.0	12.7	22	2.45	1.6	2.3	
	22-4.5ISO	●	●	22-4.5ISO			4.5	12.7	22	2.78	1.7	2.4	
	22-5.0ISO	●	●	22-5.0ISO	●		5.0	12.7	22	3.07	1.7	2.5	
	27-5.5ISO			27-5.5ISO			5.5	15.875	27	3.37	1.9	2.7	
	27-6.0ISO	●	●	27-6.0ISO			6.0	15.875	27	3.68	2.0	2.9	

Applicable holders D32

● : Stock item

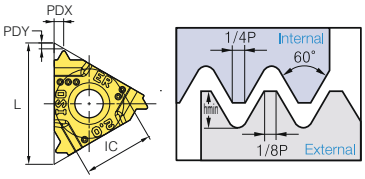
ISO Metric (M chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (mm)					Configuration
						TP	IC	L	hmin	PDY	PDX	
External	ERM 16-1.0ISO	●				1.0	9.525	16	0.61	0.7	0.7	
	16-1.25ISO					1.25	9.525	16	0.77	0.8	0.9	
	16-1.5ISO	●				1.5	9.525	16	0.93	0.8	1.0	
	16-1.75ISO	●				1.75	9.525	16	1.09	0.9	1.2	
	16-2.0ISO	●				2.0	9.525	16	1.25	1.0	1.3	
	16-2.5ISO	●				2.5	9.525	16	1.55	1.1	1.5	
	16-3.0ISO	●				3.0	9.525	16	1.87	1.2	1.6	

Applicable holders **D32**

●: Stock item

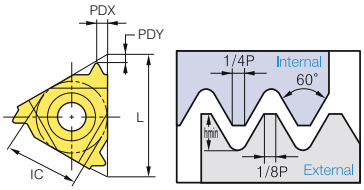
ISO Metric (U chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (mm)					Configuration
						TP	IC	L	hmin	PDY	PDX	
External	ERM 16-1.5ISO-U					1.5	9.525	16	0.93	0.8	1.0	
	16-2.0ISO-U					2.0	9.525	16	1.25	1.0	1.3	

Applicable holders **D32**

●: Stock item

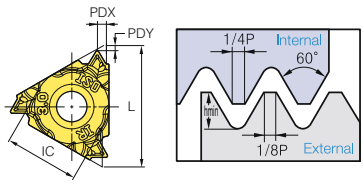
ISO Metric

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TP	IC	L	hmin	PDY	PDX	
Internal	IR 11-0.35ISO	●		IL 11-0.35ISO			0.35	6.35	11	0.20	0.8	0.3	
	11-0.4ISO	●		11-0.4ISO			0.4	6.35	11	0.23	0.8	0.4	
	11-0.45ISO	●		11-0.45ISO			0.45	6.35	11	0.26	0.8	0.4	
	11-0.5ISO	●		11-0.5ISO	●		0.5	6.35	11	0.29	0.6	0.4	
	11-0.6ISO	●		11-0.6ISO			0.6	6.35	11	0.35	0.6	0.6	
	11-0.7ISO	●		11-0.7ISO			0.7	6.35	11	0.40	0.6	0.6	
	11-0.75ISO	●		11-0.75ISO	●		0.75	6.35	11	0.43	0.6	0.6	
	11-0.8ISO			11-0.8ISO			0.8	6.35	11	0.46	0.6	0.6	
	11-1.0ISO	●	●	11-1.0ISO			1.0	6.35	11	0.58	0.6	0.7	
	11-1.25ISO	●	●	11-1.25ISO	●		1.25	6.35	11	0.72	0.8	0.9	
	11-1.5ISO	●	●	11-1.5ISO	●	●	1.5	6.35	11	0.87	0.8	1.0	
	11-1.75ISO		●	11-1.75ISO			1.75	6.35	11	1.01	0.9	1.1	
	11-2.0ISO	●	●	11-2.0ISO	●		2.0	6.35	11	1.15	0.9	1.1	
	11-2.5ISO	●		11-2.5ISO	●		2.5	6.35	11	1.44	0.8	1.1	
	16-0.35ISO	●		16-0.35ISO			0.35	9.525	16	0.20	0.8	0.3	
	16-0.4ISO	●		16-0.4ISO			0.4	9.525	16	0.23	0.8	0.4	
	16-0.45ISO	●		16-0.45ISO			0.45	9.525	16	0.26	0.8	0.4	
	16-0.5ISO	●		16-0.5ISO			0.5	9.525	16	0.29	0.6	0.4	
	16-0.6ISO			16-0.6ISO			0.6	9.525	16	0.35	0.6	0.6	
	16-0.7ISO			16-0.7ISO			0.7	9.525	16	0.40	0.6	0.6	
	16-0.75ISO	●		16-0.75ISO			0.75	9.525	16	0.43	0.6	0.6	
	16-0.8ISO	●		16-0.8ISO			0.8	9.525	16	0.46	0.6	0.6	
	16-1.0ISO	●	●	16-1.0ISO			1.0	9.525	16	0.58	0.6	0.7	
	16-1.25ISO	●	●	16-1.25ISO			1.25	9.525	16	0.72	0.8	0.9	
	16-1.5ISO	●	●	16-1.5ISO	●		1.5	9.525	16	0.87	0.8	1.0	
	16-1.75ISO	●	●	16-1.75ISO			1.75	9.525	16	1.01	0.9	1.2	
	16-2.0ISO	●	●	16-2.0ISO	●		2.0	9.525	16	1.15	1.0	1.3	
	16-2.5ISO	●	●	16-2.5ISO	●		2.5	9.525	16	1.44	1.1	1.5	
	16-3.0ISO	●	●	16-3.0ISO	●		3.0	9.525	16	1.73	1.1	1.5	
	22-3.5ISO	●	●	22-3.5ISO			3.5	12.7	22	2.02	1.6	2.3	
	22-4.0ISO	●	●	22-4.0ISO	●		4.0	12.7	22	2.31	1.6	2.3	
	22-4.5ISO	●	●	22-4.5ISO			4.5	12.7	22	2.60	1.6	2.4	
	22-5.0ISO	●	●	22-5.0ISO			5.0	12.7	22	2.89	1.6	2.3	
	27-5.5ISO	●		27-5.5ISO			5.5	15.875	27	3.17	1.6	2.3	
	27-6.0ISO	●		27-6.0ISO			6.0	15.875	27	3.46	1.8	2.5	

Applicable holders **D33**

● : Stock item

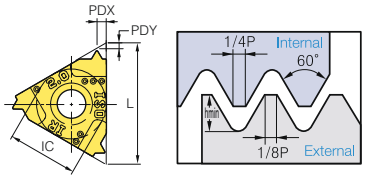
ISO Metric (M chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (mm)					Configuration
						TP	IC	L	hmin	PDY	PDX	
Internal	IRM 11-1.5ISO	●				1.5	6.35	11	0.85	0.8	1.0	
	16-1.0ISO	●				1.0	9.525	16	0.58	0.6	0.7	
	16-1.25ISO					1.25	9.525	16	0.72	0.8	0.9	
	16-1.5ISO	●				1.5	9.525	16	0.85	0.8	1.0	
	16-1.75ISO					1.75	9.525	16	1.01	0.9	1.2	
	16-2.0ISO	●				2.0	9.525	16	1.12	1.0	1.3	
	16-2.5ISO	●				2.5	9.525	16	1.44	1.1	1.5	
	16-3.0ISO	●				3.0	9.525	16	1.69	1.1	1.5	

Applicable holders D33

● : Stock item

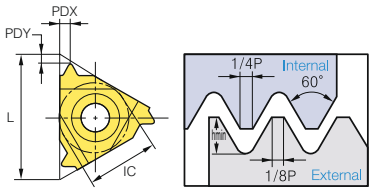
ISO Metric (U chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (mm)					Configuration
						TP	IC	L	hmin	PDY	PDX	
Internal	IRM 16-1.5ISO-U					1.5	9.525	16	0.85	0.8	1.0	
	16-2.0ISO-U					2.0	9.525	16	1.12	1.0	1.3	

Applicable holders D33

● : Stock item

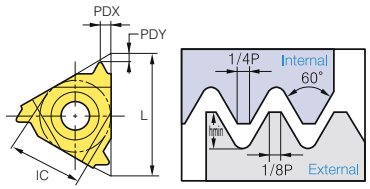
American UN (UN, UNC, UNF, UNEF, UNS)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 11-72UN	●		EL 11-72UN			72	6.35	11	0.22	0.8	0.4	
	11-64UN	●		11-64UN			64	6.35	11	0.24	0.8	0.4	
	11-56UN	●		11-56UN			56	6.35	11	0.28	0.7	0.4	
	11-48UN	●		11-48UN			48	6.35	11	0.32	0.6	0.6	
	11-44UN	●		11-44UN			44	6.35	11	0.35	0.6	0.6	
	11-40UN	●		11-40UN			40	6.35	11	0.39	0.6	0.6	
	11-36UN	●		11-36UN			36	6.35	11	0.43	0.6	0.6	
	11-32UN	●		11-32UN			32	6.35	11	0.49	0.6	0.6	
	11-28UN	●		11-28UN			28	6.35	11	0.56	0.6	0.7	
	11-27UN	●		11-27UN			27	6.35	11	0.58	0.7	0.8	
	11-24UN	●		11-24UN			24	6.35	11	0.65	0.7	0.8	
	11-20UN	●		11-20UN			20	6.35	11	0.78	0.8	0.9	
	11-18UN	●		11-18UN			18	6.35	11	0.87	0.8	1.0	
	11-16UN	●		11-16UN			16	6.35	11	0.97	0.9	1.1	
	11-14UN	●		11-14UN			14	6.35	11	1.11	0.9	1.1	
	16-72UN			16-72UN			72	9.525	16	0.22	0.8	0.4	
	16-64UN			16-64UN			64	9.525	16	0.24	0.8	0.4	
	16-56UN			16-56UN			56	9.525	16	0.28	0.7	0.4	
	16-48UN			16-48UN			48	9.525	16	0.32	0.6	0.6	
	16-44UN			16-44UN			44	9.525	16	0.35	0.6	0.6	
	16-40UN			16-40UN			40	9.525	16	0.39	0.6	0.6	
	16-36UN			16-36UN			36	9.525	16	0.43	0.6	0.6	
	16-32UN	●		16-32UN			32	9.525	16	0.49	0.6	0.6	
	16-28UN	●		16-28UN			28	9.525	16	0.56	0.6	0.7	
	16-27UN	●		16-27UN			27	9.525	16	0.58	0.7	0.8	
	16-24UN	●	●	16-24UN			24	9.525	16	0.65	0.7	0.8	
	16-20UN	●	●	16-20UN			20	9.525	16	0.78	0.8	0.9	
	16-18UN	●	●	16-18UN	●		18	9.525	16	0.87	0.8	1.0	
	16-16UN	●	●	16-16UN	●		16	9.525	16	0.97	0.9	1.1	
	16-14UN	●	●	16-14UN			14	9.525	16	1.11	1.0	1.2	
	16-13UN			16-13UN			13	9.525	16	1.20	1.0	1.3	
	16-12UN	●	●	16-12UN			12	9.525	16	1.30	1.1	1.4	
	16-11.5UN			16-11.5UN			11.5	9.525	16	1.35	1.1	1.5	
	16-11UN	●	●	16-11UN			11	9.525	16	1.42	1.1	1.5	
	16-10UN	●	●	16-10UN			10	9.525	16	1.56	1.1	1.5	
	16-9UN	●		16-9UN			9	9.525	16	1.73	1.2	1.7	
	16-8UN	●	●	16-8UN			8	9.525	16	1.95	1.2	1.6	
	22-7UN			22-7UN			7	12.7	22	2.22	1.6	2.3	
	22-6UN			22-6UN			6	12.7	22	2.60	1.6	2.3	
	22-5UN	●		22-5UN			5	12.7	22	3.12	1.7	2.5	
	27-4.5UN			27-4.5UN			4.5	15.875	27	3.46	1.9	2.7	
	27-4UN			27-4UN			4	15.875	27	3.89	2.1	3.0	

Applicable holders D33

● : Stock item

American UN (UN, UNC, UNF, UNEF, UNS)

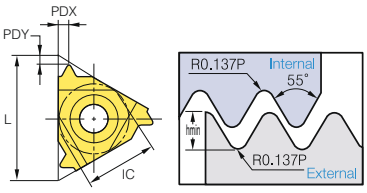
Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
Internal	IR 11-72UN			IL 11-72UN			72	6.35	11	0.20	0.8	0.3	
	11-64UN			11-64UN			64	6.35	11	0.23	0.8	0.4	
	11-56UN			11-56UN			56	6.35	11	0.26	0.7	0.4	
	11-48UN			11-48UN			48	6.35	11	0.31	0.6	0.6	
	11-44UN			11-44UN			44	6.35	11	0.33	0.6	0.6	
	11-40UN			11-40UN			40	6.35	11	0.37	0.6	0.6	
	11-36UN			11-36UN			36	6.35	11	0.41	0.6	0.6	
	11-32UN			11-32UN			32	6.35	11	0.46	0.6	0.6	
	11-28UN			11-28UN			28	6.35	11	0.52	0.6	0.7	
	11-27UN			11-27UN			27	6.35	11	0.54	0.7	0.8	
	11-24UN			11-24UN			24	6.35	11	0.61	0.7	0.8	
	11-20UN		●	11-20UN			20	6.35	11	0.73	0.8	0.9	
	11-18UN	●		11-18UN			18	6.35	11	0.81	0.8	1.0	
	11-16UN		●	11-16UN			16	6.35	11	0.92	0.9	1.1	
	11-14UN	●		11-14UN			14	6.35	11	1.05	0.9	1.1	
	11-12UN		●	11-12UN			12	6.35	11	1.22	0.8	1.1	
	11-11UN	●		11-11UN	●		11	6.35	11	1.33	0.8	1.1	
	16-72UN			16-72UN			72	9.525	16	0.20	0.8	0.3	
	16-64UN			16-64UN			64	9.525	16	0.23	0.8	0.4	
	16-56UN			16-56UN			56	9.525	16	0.26	0.7	0.4	
	16-48UN			16-48UN			48	9.525	16	0.31	0.6	0.6	
	16-44UN			16-44UN			44	9.525	16	0.33	0.6	0.6	
	16-40UN			16-40UN			40	9.525	16	0.37	0.6	0.6	
	16-36UN			16-36UN			36	9.525	16	0.41	0.6	0.6	
	16-32UN			16-32UN			32	9.525	16	0.51	0.6	0.6	
	16-28UN	●		16-28UN			28	9.525	16	0.52	0.6	0.7	
	16-27UN			16-27UN			27	9.525	16	0.54	0.7	0.8	
	16-24UN			16-24UN			24	9.525	16	0.61	0.7	0.8	
	16-20UN	●		16-20UN			20	9.525	16	0.73	0.8	0.9	
	16-18UN	●	●	16-18UN			18	9.525	16	0.81	0.8	1.0	
	16-16UN	●	●	16-16UN			16	9.525	16	0.92	0.9	1.1	
	16-14UN	●		16-14UN			14	9.525	16	1.05	0.9	1.2	
	16-13UN			16-13UN			13	9.525	16	1.13	1.0	1.3	
	16-12UN	●	●	16-12UN			12	9.525	16	1.22	1.1	1.4	
	16-11.5UN	●		16-11.5UN			11.5	9.525	16	1.28	1.1	1.5	
	16-11UN	●	●	16-11UN			11	9.525	16	1.33	1.1	1.5	
	16-10UN	●		16-10UN	●		10	9.525	16	1.47	1.1	1.5	
	16-9UN		●	16-9UN			9	9.525	16	1.63	1.2	1.7	
	16-8UN	●	●	16-8UN	●		8	9.525	16	1.83	1.2	1.5	
	22-7UN			22-7UN			7	12.7	22	2.09	1.6	2.3	
	22-6UN			22-6UN			6	12.7	22	2.44	1.6	2.3	
	22-5UN			22-5UN			5	12.7	22	2.93	1.7	2.3	
	27-4.5UN			27-4.5UN			4.5	15.875	27	3.26	1.9	2.4	
	27-4UN			27-4UN			4	15.875	27	3.67	2.1	2.7	

Applicable holders D33

●: Stock item

Whitworth (BSW, BSF, BSP, BSB)

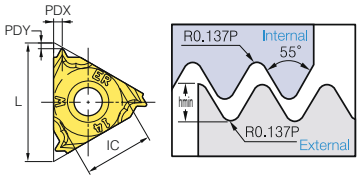
Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 11-72W	●		EL 11-72W			72	6.35	11	0.23	0.7	0.4	
	11-60W	●		11-60W			60	6.35	11	0.27	0.7	0.4	
	11-56W	●		11-56W			56	6.35	11	0.29	0.7	0.4	
	11-48W	●		11-48W			48	6.35	11	0.34	0.6	0.6	
	11-40W	●		11-40W			40	6.35	11	0.41	0.6	0.6	
	11-36W	●		11-36W			36	6.35	11	0.45	0.6	0.6	
	11-32W	●		11-32W			32	6.35	11	0.51	0.6	0.6	
	11-28W	●		11-28W			28	6.35	11	0.58	0.6	0.7	
	11-26W	●		11-26W			26	6.35	11	0.63	0.7	0.8	
	11-24W	●		11-24W			24	6.35	11	0.68	0.7	0.8	
	11-22W	●		11-22W			22	6.35	11	0.74	0.8	0.9	
	11-20W	●		11-20W			20	6.35	11	0.81	0.8	0.9	
	11-19W	●		11-19W			19	6.35	11	0.86	0.8	1.0	
	11-18W	●		11-18W			18	6.35	11	0.90	0.8	1.0	
	11-16W	●		11-16W			16	6.35	11	1.02	0.9	1.1	
	11-14W	●		11-14W	●		14	6.35	11	1.16	1.0	1.2	
	16-72W	●		16-72W			72	9.525	16	0.23	0.7	0.4	
	16-60W	●		16-60W			60	9.525	16	0.27	0.7	0.4	
	16-56W	●		16-56W			56	9.525	16	0.29	0.7	0.4	
	16-48W	●		16-48W			48	9.525	16	0.34	0.6	0.6	
	16-40W	●		16-40W			40	9.525	16	0.41	0.6	0.6	
	16-36W	●		16-36W			36	9.525	16	0.45	0.6	0.6	
	16-32W	●		16-32W			32	9.525	16	0.51	0.6	0.6	
	16-30W	●		16-30W			30	9.525	16	0.55	0.6	0.7	
	16-28W	●	●	16-28W			28	9.525	16	0.58	0.6	0.7	
	16-26W			16-26W			26	9.525	16	0.63	0.7	0.8	
	16-24W	●		16-24W			24	9.525	16	0.68	0.7	0.8	
	16-22W	●		16-22W			22	9.525	16	0.74	0.8	0.9	
	16-20W	●		16-20W			20	9.525	16	0.81	0.8	0.9	
	16-19W	●	●	16-19W			19	9.525	16	0.86	0.8	1.0	
	16-18W	●		16-18W			18	9.525	16	0.90	0.8	1.0	
	16-16W	●		16-16W			16	9.525	16	1.02	0.9	1.1	
	16-14W	●	●	16-14W			14	9.525	16	1.16	1.0	1.2	
	16-12W	●		16-12W			12	9.525	16	1.36	1.1	1.4	
	16-11W	●	●	16-11W			11	9.525	16	1.48	1.1	1.5	
	16-10W	●		16-10W			10	9.525	16	1.63	1.1	1.5	
	16-9W	●		16-9W			9	9.525	16	1.81	1.2	1.7	
	16-8W	●		16-8W			8	9.525	16	2.03	1.2	1.5	
	22-7W	●		22-7W			7	12.7	22	3.32	1.6	2.3	
	22-6W	●		22-6W	●		6	12.7	22	2.71	1.6	2.3	
	22-5W	●		22-5W			5	12.7	22	3.25	1.7	2.4	
	27-4.5W	●		27-4.5W			4.5	15.875	27	3.61	1.8	2.6	
	27-4W			27-4W			4	15.875	27	4.07	2.0	2.9	



Applicable holders **D32**

● : Stock item

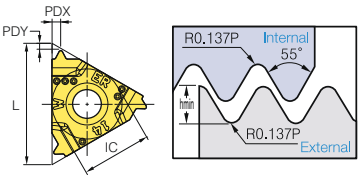
Whitworth (M chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (mm)					Configuration
						TPI	IC	L	hmin	PDY	PDX	
Internal	ERM 16-11W	●				11	9.525	16	1.16	1.0	1.2	
	16-14W	●				14	9.525	16	1.48	1.1	1.5	
	16-19W	●				19	9.525	16	0.86	0.8	1.0	

Applicable holders **D32**

● : Stock item

Whitworth (U chip breaker)

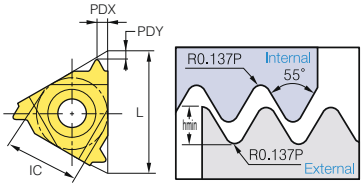
Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (mm)					Configuration
						TPI	IC	L	hmin	PDY	PDX	
Internal	ERM 16-14W-U					14	9.525	16	1.16	1.0	1.2	
	16-11W-U					11	9.525	16	1.48	1.1	1.5	

Applicable holders **D32**

● : Stock item

Whitworth (BSW, BSF, BSP, BSB)

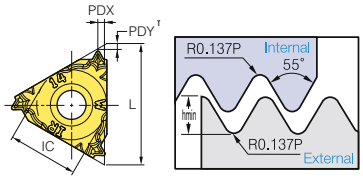
Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
Internal	IR 11-72W	●		IL 11-72W			72	6.35	11	0.23	0.7	0.4	
	11-60W	●		11-60W			60	6.35	11	0.27	0.7	0.4	
	11-56W	●		11-56W			56	6.35	11	0.29	0.7	0.4	
	11-48W	●		11-48W			48	6.35	11	0.34	0.6	0.6	
	11-40W	●		11-40W			40	6.35	11	0.41	0.6	0.6	
	11-36W	●		11-36W			36	6.35	11	0.45	0.6	0.6	
	11-32W	●		11-32W			32	6.35	11	0.51	0.6	0.6	
	11-28W	●		11-28W			28	6.35	11	0.58	0.6	0.7	
	11-26W	●		11-26W			26	6.35	11	0.63	0.7	0.8	
	11-24W	●		11-24W			24	6.35	11	0.68	0.7	0.8	
	11-22W	●		11-22W			22	6.35	11	0.74	0.8	0.9	
	11-20W			11-20W			20	6.35	11	0.81	0.8	0.9	
	11-19W	●	●	11-19W	●		19	6.35	11	0.86	0.8	1.0	
	11-18W	●		11-18W	●		18	6.35	11	0.90	0.8	1.0	
	11-16W	●		11-16W	●		16	6.35	11	1.02	0.9	1.1	
	11-14W	●		11-14W	●		14	6.35	11	1.16	0.9	1.1	
	11-12W	●		11-12W	●		12	6.35	11	1.32	0.9	1.2	
	16-72W	●		16-72W			72	9.525	16	0.23	0.7	0.4	
	16-60W	●		16-60W			60	9.525	16	0.27	0.7	0.4	
	16-56W	●		16-56W			56	9.525	16	0.29	0.7	0.4	
	16-48W	●		16-48W			48	9.525	16	0.34	0.6	0.6	
	16-40W	●		16-40W			40	9.525	16	0.41	0.6	0.6	
	16-36W	●		16-36W			36	9.525	16	0.45	0.6	0.6	
	16-32W	●		16-32W			32	9.525	16	0.51	0.6	0.6	
	16-30W	●		16-30W			30	9.525	16	0.55	0.6	0.7	
	16-28W	●		16-28W			28	9.525	16	0.58	0.6	0.7	
	16-26W	●		16-26W			26	9.525	16	0.63	0.7	0.8	
	16-24W	●		16-24W			24	9.525	16	0.68	0.7	0.8	
	16-22W	●		16-22W			22	9.525	16	0.74	0.8	0.9	
	16-20W	●		16-20W			20	9.525	16	0.81	0.8	0.9	
	16-19W	●		16-19W			19	9.525	16	0.86	0.8	1.0	
	16-18W	●		16-18W			18	9.525	16	0.90	0.8	1.0	
	16-16W	●		16-16W			16	9.525	16	1.02	0.9	1.1	
	16-14W	●	●	16-14W			14	9.525	16	1.16	1.0	1.2	
	16-12W	●		16-12W			12	9.525	16	1.36	1.1	1.4	
	16-11W	●	●	16-11W			11	9.525	16	1.48	1.1	1.5	
	16-10W	●		16-10W			10	9.525	16	1.63	1.1	1.5	
	16-9W	●		16-9W			9	9.525	16	1.81	1.2	1.7	
	16-8W	●		16-8W			8	9.525	16	2.03	1.2	1.5	
	22-7W			22-7W			7	12.7	22	3.32	1.6	2.3	
	22-6W	●		22-6W			6	12.7	22	2.71	1.6	2.3	
	22-5W	●		22-5W			5	12.7	22	3.25	1.7	2.4	
	27-4.5W	●		27-4.5W			4.5	15.875	27	3.61	1.8	2.6	
	27-4W	●		27-4W			4	15.875	27	4.07	2.0	2.9	



Applicable holders D33

● : Stock item

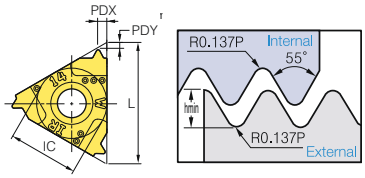
Whitworth (M chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (mm)					Configuration
						TPI	IC	L	hmin	PDY	PDX	
Internal	IRM 16-14W					14	9.525	16	1.16	1.0	1.2	
	16-11W	●				11	9.525	16	1.48	1.1	1.5	

Applicable holders D33

● : Stock item

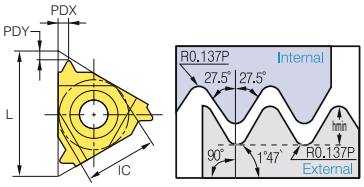
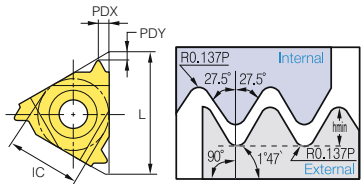
Whitworth (U chip breaker)

Type	Designation (Right)	PC3030T	PC5300	Designation (Left)	PC3030T	Pitch	Dimensions (mm)					Configuration
						TPI	IC	L	hmin	PDY	PDX	
Internal	IRM 16-14W-U					14	9.525	16	1.16	1.0	1.2	
	16-11W-U					11	9.525	16	1.48	1.1	1.5	

Applicable holders D33

● : Stock item

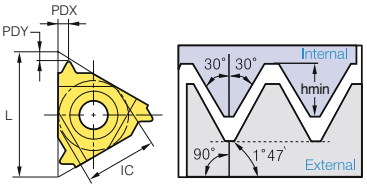
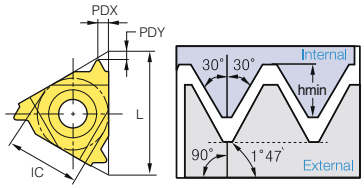
British Standard Pipe Thread (BSPT)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch TPI	Dimensions (mm) IC	L	hmin	PDY	PDX	Configuration
External	ER 11-28BSPT			EL 11-28BSPT			28	6.35	11	0.58	0.6	0.6	
	11-19BSPT			11-19BSPT			19	6.35	11	0.86	0.8	0.9	
	11-14BSPT			11-14BSPT			14	6.35	11	1.16	0.9	1.0	
	16-28BSPT			16-28BSPT			28	9.525	16	0.58	0.6	0.6	
	16-19BSPT	●	●	16-19BSPT			19	9.525	16	0.86	0.8	0.9	
	16-14BSPT		●	16-14BSPT			14	9.525	16	1.16	1.0	1.2	
	16-11BSPT	●	●	16-11BSPT			11	9.525	16	1.48	1.1	1.5	
Internal	IR 11-28BSPT			IL 11-28BSPT			28	6.35	11	0.58	0.6	0.6	
	11-19BSPT		●	11-19BSPT			19	6.35	11	0.86	0.8	0.9	
	11-14BSPT		●	11-14BSPT			14	6.35	11	1.16	0.9	1.0	
	16-28BSPT			16-28BSPT			28	9.525	16	0.58	0.6	0.6	
	16-19BSPT	●	●	16-19BSPT			19	9.525	16	0.86	0.8	0.9	
	16-14BSPT	●	●	16-14BSPT			14	9.525	16	1.16	1.0	1.2	
	16-11BSPT	●	●	16-11BSPT			11	9.525	16	1.48	1.1	1.5	

Applicable holders **D32, D33**

● : Stock item

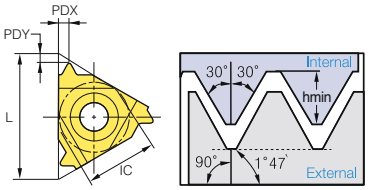
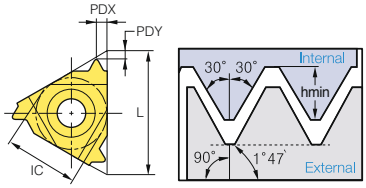
National Pipe Thread (NPT)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch TPI	Dimensions (mm) IC	L	hmin	PDY	PDX	Configuration
External	ER 11-27NPT	●		EL 11-27NPT			27	6.35	11	0.66	0.7	0.8	
	11-18NPT	●		11-18NPT			18	6.35	11	1.01	0.8	1.0	
	11-14NPT	●		11-14NPT			14	6.35	11	1.33	0.8	1.0	
	16-27NPT	●		16-27NPT			27	9.525	16	0.66	0.7	0.8	
	16-18NPT	●	●	16-18NPT			18	9.525	16	1.01	0.8	1.0	
	16-14NPT	●	●	16-14NPT			14	9.525	16	1.33	0.9	1.2	
	16-11.5NPT	●		16-11.5NPT			11.5	9.525	16	1.64	1.1	1.5	
	16-8NPT	●		16-8NPT			8	9.525	16	2.42	1.3	1.8	
Internal	IR 11-27NPT	●		IL 11-27NPT			27	6.35	11	0.66	0.7	0.8	
	11-18NPT	●		11-18NPT			18	6.35	11	1.01	0.8	1.0	
	11-14NPT	●	●	11-14NPT	●		14	6.35	11	1.33	0.8	1.0	
	16-27NPT	●		16-27NPT			27	9.525	16	0.66	0.7	0.8	
	16-18NPT			16-18NPT			18	9.525	16	1.01	0.8	1.0	
	16-14NPT	●	●	16-14NPT			14	9.525	16	1.33	0.9	1.2	
	16-11.5NPT	●	●	16-11.5NPT	●		11.5	9.525	16	1.64	1.1	1.5	
	16-8NPT	●		16-8NPT	●		8	9.525	16	2.42	1.3	1.8	

Applicable holders **D32, D33**

● : Stock item

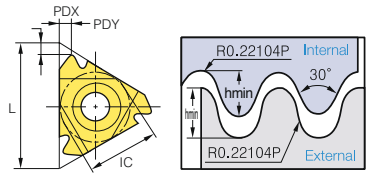
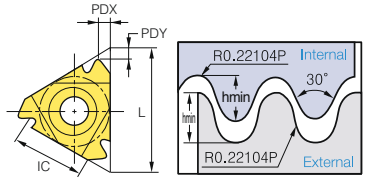
National Pipe Threads-Dryseal (NPTF)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 11-27NPTF			EL 11-27NPTF			27	6.35	11	0.64	0.7	0.8	
	11-18NPTF			11-18NPTF			18	6.35	11	1.00	0.8	1.0	
	11-14NPTF			11-14NPTF			14	6.35	11	1.35	0.8	1.0	
	16-27NPTF			16-27NPTF			27	9.525	16	0.64	0.7	0.8	
	16-18NPTF	●		16-18NPTF			18	9.525	16	1.00	0.8	1.0	
	16-14NPTF			16-14NPTF			14	9.525	16	1.35	0.9	1.2	
	16-11.5NPTF			16-11.5NPTF			11.5	9.525	16	1.63	1.1	1.5	
	16-8NPTF			16-8NPTF	●		8	9.525	16	2.38	1.3	1.8	
Internal	IR 11-27NPTF			IL 11-27NPTF			27	6.35	11	0.64	0.7	0.8	
	11-18NPTF			11-18NPTF			18	6.35	11	1.00	0.8	1.0	
	11-14NPTF			11-14NPTF			14	6.35	11	1.35	0.8	1.0	
	16-27NPTF			16-27NPTF			27	9.525	16	0.64	0.7	0.8	
	16-18NPTF			16-18NPTF			18	9.525	16	1.00	0.8	1.0	
	16-14NPTF			16-14NPTF			14	9.525	16	1.35	0.9	1.2	
	16-11.5NPTF			16-11.5NPTF			11.5	9.525	16	1.63	1.1	1.5	
	16-8NPTF			16-8NPTF			8	9.525	16	2.38	1.3	1.8	

Applicable holders **D32, D33**

●: Stock item

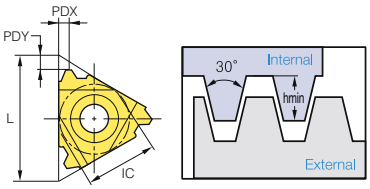
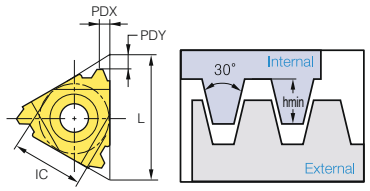
Round DIN405 (RD)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 16-10RD			EL 16-10RD			10	9.525	16	1.27	1.1	1.2	
	16-8RD	●		16-8RD			8	9.525	16	1.59	1.4	1.3	
	16-6RD	●		16-6RD			6	9.525	16	2.12	1.5	1.7	
	22-6RD			22-6RD			6	12.7	22	2.12	1.5	1.7	
	22-4RD	●		22-4RD			4	12.7	22	3.18	2.2	2.3	
	27-4RD			27-4RD			4	15.875	27	3.18	2.2	2.3	
Internal	IR 16-10RD			IL 16-10RD			10	9.525	16	1.27	1.1	1.2	
	16-8RD			16-8RD			8	9.525	16	1.59	1.4	1.4	
	16-6RD	●		16-6RD			6	9.525	16	2.12	1.4	1.5	
	22-6RD			22-6RD			6	12.7	22	2.12	1.5	1.7	
	22-4RD	●		22-4RD			4	12.7	22	3.18	2.2	2.3	
	27-4RD			27-4RD			4	15.875	27	3.18	2.2	2.3	

Applicable holders **D32, D33**

●: Stock item

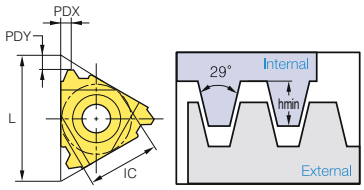
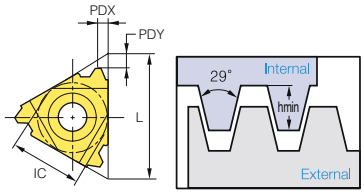
Trapez DIN 103 (TR)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TP	IC	L	hmin	PDY	PDX	
External	ER 11-1.5TR	●		EL 11-1.5TR	●		1.5	6.35	11	0.90	0.8	0.9	
	16-1.5TR			16-1.5TR			1.5	9.525	16	0.90	1.0	1.1	
	16-2.0TR	●		16-2.0TR	●		2.0	9.525	16	1.25	1.1	1.3	
	16-3.0TR	●	●	16-3.0TR	●		3.0	9.525	16	1.75	1.3	1.5	
	22-4.0TR	●	●	22-4.0TR	●		4.0	12.7	22	2.25	1.7	1.9	
	22-5.0TR	●	●	22-5.0TR	●		5.0	12.7	22	2.75	2.1	2.5	
	27-6.0TR	●	●	27-6.0TR	●		6.0	15.875	27	3.50	2.3	2.7	
Internal	IR 11-1.5TR			IL 11-1.5TR	●		1.5	6.35	11	0.90	0.8	0.9	
	16-1.5TR	●		16-1.5TR	●		1.5	9.525	16	0.90	1.0	1.1	
	16-2.0TR	●		16-2.0TR	●		2.0	9.525	16	1.25	1.1	1.3	
	16-2.5TR	●		16-2.5TR	●		2.5	9.525	16	1.53	1.2	1.4	
	16-3.0TR	●		16-3.0TR	●		3.0	9.525	16	1.75	1.3	1.5	
	22-4.0TR	●	●	22-4.0TR	●		4.0	12.7	22	2.25	1.7	1.9	
	22-5.0TR	●	●	22-5.0TR			5.0	12.7	22	2.75	2.1	2.5	
	27-6.0TR	●	●	27-6.0TR	●		6.0	15.875	27	3.50	2.3	2.7	

Applicable holders **D32, D33**

● : Stock item

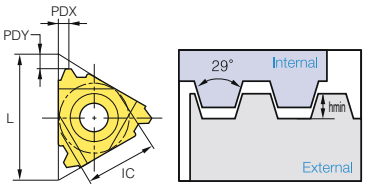
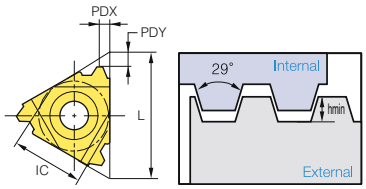
American ACME (ACME)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 11-16ACME			EL 11-16ACME			16	6.35	11	0.92	1.0	1.1	
	16-16ACME			16-16ACME			16	9.525	16	0.92	1.0	1.1	
	16-14ACME			16-14ACME			14	9.525	16	1.03	1.0	1.2	
	16-12ACME			16-12ACME			12	9.525	16	1.19	1.1	1.2	
	16-10ACME			16-10ACME			10	9.525	16	1.52	1.3	1.4	
	16-8ACME			16-8ACME			8	9.525	16	1.84	1.4	1.5	
	16-6ACME			16-6ACME			6	9.525	16	2.37	1.7	1.9	
	22-6ACME	●		22-6ACME	●		6	12.7	22	2.37	1.8	2.1	
	22-5ACME	●		22-5ACME	●		5	12.7	22	2.79	2.0	2.3	
	27-4ACME			27-4ACME			4	15.875	27	3.43	2.4	2.7	
Internal	IR 11-16ACME			IL 11-16ACME			16	6.35	11	0.92	0.9	0.9	
	16-16ACME			16-16ACME			16	9.525	16	0.92	1.0	1.1	
	16-14ACME			16-14ACME			14	9.525	16	1.03	1.1	1.2	
	16-12ACME			16-12ACME			12	9.525	16	1.19	1.2	1.3	
	16-10ACME	●		16-10ACME			10	9.525	16	1.52	1.2	1.3	
	16-8ACME	●		16-8ACME			8	9.525	16	1.84	1.4	1.5	
	16-6ACME			16-6ACME			6	9.525	16	2.37	1.7	1.9	
	22-6ACME	●		22-6ACME			6	12.7	22	2.37	1.8	2.1	
	22-5ACME	●		22-5ACME			5	12.7	22	2.79	2.0	2.3	
	27-4ACME	●		27-4ACME			4	15.875	27	3.43	2.3	2.6	

Applicable holders **D32, D33**

● : Stock item

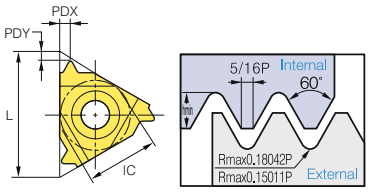
Stub ACME (STACME)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 11-16STACME			EL 11-16STACME			16	6.35	11	0.60	1.0	1.0	
	16-16STACME			16-16STACME			16	9.525	16	0.60	1.0	1.0	
	16-14STACME			16-14STACME			14	9.525	16	0.67	1.1	1.1	
	16-12STACME			16-12STACME			12	9.525	16	0.76	1.2	1.2	
	16-10STACME			16-10STACME			10	9.525	16	1.02	1.2	1.3	
	16-8STACME			16-8STACME			8	9.525	16	1.21	1.4	1.5	
	16-6STACME			16-6STACME			6	9.525	16	1.52	1.7	1.8	
	22-6STACME			22-6STACME			6	12.7	22	1.52	1.7	1.8	
	22-5STACME			22-5STACME			5	12.7	22	1.78	2.1	2.3	
	27-4STACME			27-4STACME			4	15.875	27	2.16	2.3	2.4	
	27-3STACME			27-3STACME			3	15.875	27	2.79	2.9	2.9	
Internal	IR 11-16STACME			IL 11-16STACME			16	6.35	11	0.60	1.0	1.0	
	16-16STACME			16-16STACME			16	9.525	16	0.60	1.0	1.0	
	16-14STACME			16-14STACME			14	9.525	16	0.67	1.1	1.1	
	16-12STACME			16-12STACME			12	9.525	16	0.76	1.1	1.2	
	16-10STACME			16-10STACME			10	9.525	16	1.02	1.2	1.3	
	16-8STACME			16-8STACME			8	9.525	16	1.21	1.4	1.5	
	16-6STACME			16-6STACME			6	9.525	16	1.52	1.7	1.8	
	22-6STACME			22-6STACME			6	12.7	22	1.52	1.7	1.8	
	22-5STACME			22-5STACME			5	12.7	22	1.78	2.1	2.3	
	27-4STACME			27-4STACME			4	15.875	27	2.16	2.3	2.4	
	27-3STACME			27-3STACME			3	15.875	27	2.79	2.9	2.9	

Applicable holders **D32, D33**

● : Stock item

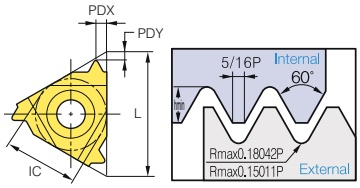
UNJ (Unified Constant Thread)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 11-48UNJ			EL 11-48UNJ			48	6.35	11	0.31	0.6	0.5	
	11-44UNJ			11-44UNJ			44	6.35	11	0.33	0.6	0.6	
	11-40UNJ			11-40UNJ			40	6.35	11	0.37	0.6	0.6	
	11-36UNJ			11-36UNJ			36	6.35	11	0.41	0.6	0.6	
	11-32UNJ			11-32UNJ			32	6.35	11	0.46	0.6	0.7	
	11-28UNJ			11-28UNJ			28	6.35	11	0.52	0.7	0.7	
	11-24UNJ	●		11-24UNJ			24	6.35	11	0.61	0.7	0.8	
	11-20UNJ			11-20UNJ			20	6.35	11	0.73	0.8	0.9	
	11-18UNJ			11-18UNJ			18	6.35	11	0.81	0.8	1.0	
	11-16UNJ			11-16UNJ			16	6.35	11	0.92	0.9	1.1	
	11-14UNJ			11-14UNJ			14	6.35	11	1.05	1.0	1.2	
	16-48UNJ			16-48UNJ			48	9.525	16	0.31	0.6	0.5	
	16-44UNJ			16-44UNJ			44	9.525	16	0.33	0.6	0.6	
	16-40UNJ			16-40UNJ			40	9.525	16	0.37	0.6	0.6	
	16-36UNJ			16-36UNJ			36	9.525	16	0.41	0.6	0.6	
	16-32UNJ	●		16-32UNJ			32	9.525	16	0.46	0.6	0.7	
	16-28UNJ	●		16-28UNJ			28	9.525	16	0.52	0.7	0.7	
	16-24UNJ	●		16-24UNJ			24	9.525	16	0.61	0.7	0.8	
	16-20UNJ	●		16-20UNJ			20	9.525	16	0.73	0.8	0.9	
	16-18UNJ			16-18UNJ			18	9.525	16	0.81	0.8	1.0	
	16-16UNJ	●		16-16UNJ			16	9.525	16	0.92	0.9	1.1	
	16-14UNJ			16-14UNJ			14	9.525	16	1.05	1.0	1.2	
	16-13UNJ			16-13UNJ			13	9.525	16	1.13	1.0	1.3	
	16-12UNJ	●		16-12UNJ			12	9.525	16	1.22	1.1	1.3	
	16-11UNJ			16-11UNJ			11	9.525	16	1.33	1.2	1.5	
	16-10UNJ			16-10UNJ	●		10	9.525	16	1.47	1.2	1.5	
	16-9UNJ			16-9UNJ			9	9.525	16	1.63	1.3	1.7	
	16-8UNJ			16-8UNJ			8	9.525	16	1.83	1.2	1.6	
	22-7UNJ			22-7UNJ			7	12.7	22	2.09	1.7	2.3	
	22-6UNJ			22-6UNJ			6	12.7	22	2.44	1.7	2.3	
	22-5UNJ			22-5UNJ			5	12.7	22	2.93	1.8	2.5	
	27-4.5UNJ			27-4.5UNJ			4.5	15.875	27	3.26	2.0	2.7	
	27-4UNJ			27-4UNJ			4	15.875	27	3.67	2.2	3.0	

Applicable holders D32

● : Stock item

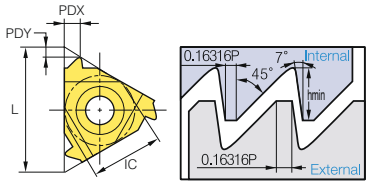
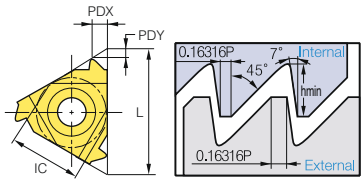
UNJ (Unified Constant Thread)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
Internal	IR 11-48UNJ			IL 11-48UNJ			48	6.35	11	0.28	0.6	0.5	
	11-44UNJ			11-44UNJ			44	6.35	11	0.30	0.6	0.6	
	11-40UNJ			11-40UNJ			40	6.35	11	0.33	0.6	0.6	
	11-36UNJ			11-36UNJ			36	6.35	11	0.37	0.6	0.6	
	11-32UNJ			11-32UNJ			32	6.35	11	0.42	0.6	0.7	
	11-28UNJ			11-28UNJ			28	6.35	11	0.47	0.7	0.7	
	11-24UNJ			11-24UNJ			24	6.35	11	0.55	0.7	0.8	
	11-20UNJ			11-20UNJ			20	6.35	11	0.66	0.8	0.9	
	11-18UNJ			11-18UNJ			18	6.35	11	0.74	0.8	1.0	
	11-16UNJ			11-16UNJ			16	6.35	11	0.83	0.9	1.1	
	11-14UNJ			11-14UNJ			14	9.525	11	0.95	1.0	1.2	
	16-48UNJ			16-48UNJ			48	9.525	16	0.28	0.6	0.5	
	16-44UNJ			16-44UNJ			44	9.525	16	0.30	0.6	0.6	
	16-40UNJ			16-40UNJ			40	9.525	16	0.33	0.6	0.6	
	16-36UNJ			16-36UNJ			36	9.525	16	0.37	0.6	0.6	
	16-32UNJ			16-32UNJ			32	9.525	16	0.42	0.6	0.7	
	16-28UNJ			16-28UNJ			28	9.525	16	0.47	0.7	0.7	
	16-24UNJ			16-24UNJ			24	9.525	16	0.55	0.7	0.8	
	16-20UNJ			16-20UNJ			20	9.525	16	0.66	0.8	0.9	
	16-18UNJ			16-18UNJ			18	9.555	16	0.74	0.8	1.0	
	16-16UNJ			16-16UNJ			16	9.525	16	0.83	0.9	1.1	
	16-14UNJ			16-14UNJ			14	9.525	16	0.95	1.0	1.2	
	16-13UNJ			16-13UNJ			13	9.525	16	1.02	1.0	1.3	
	16-12UNJ			16-12UNJ	●		12	9.525	16	1.11	1.1	1.3	
	16-11UNJ			16-11UNJ			11	9.525	16	1.21	1.2	1.5	
	16-10UNJ			16-10UNJ			10	9.525	16	1.33	1.2	1.5	
	16-9UNJ			16-9UNJ			9	9.525	16	1.48	1.3	1.7	
	16-8UNJ			16-8UNJ			8	9.525	16	1.66	1.2	1.6	
	22-7UNJ			22-7UNJ			7	12.7	22	1.90	1.7	2.3	
	22-6UNJ			22-6UNJ			6	12.7	22	2.21	1.7	2.3	
	22-5UNJ			22-5UNJ			5	12.7	22	2.66	1.8	2.5	
	27-4.5UNJ			27-4.5UNJ			4.5	15.875	27	2.95	2.0	2.7	
	27-4UNJ			27-4UNJ			4	15.875	27	3.32	2.2	3.0	

Applicable holders **D33**

●: Stock item

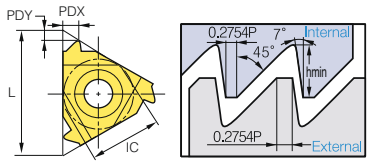
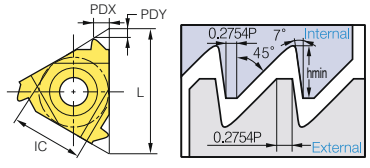
American Buttress (ABUT)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch TPI	Dimensions (mm) IC	L	hmin	PDY	PDX	Configuration
External	ER 11-20ABUT			EL 11-20ABUT			20	6.35	11	0.84	1.0	1.4	
	11-16ABUT			11-16ABUT			16	6.35	11	1.05	1.3	1.9	
	16-20ABUT	●		16-20ABUT			20	9.525	16	0.84	1.0	1.4	
	16-16ABUT			16-16ABUT			16	9.525	16	1.05	1.3	1.9	
	16-12ABUT			16-12ABUT			12	9.525	16	1.40	1.4	2.0	
	16-10ABUT			16-10ABUT			10	9.525	16	1.68	1.5	2.3	
	22-8ABUT			22-8ABUT			8	12.7	22	2.10	2.0	3.2	
	22-6ABUT			22-6ABUT			6	12.7	22	2.80	2.2	3.5	
Internal	IR 11-20ABUT	●		IL 11-20ABUT			20	6.35	11	0.84	1.0	1.4	
	11-16ABUT			11-16ABUT			16	6.35	11	1.05	1.3	1.9	
	16-20ABUT	●		16-20ABUT			20	9.525	16	0.84	1.0	1.4	
	16-16ABUT			16-16ABUT			16	9.525	16	1.05	1.3	1.9	
	16-12ABUT	●		16-12ABUT			12	9.525	16	1.40	1.4	2.0	
	16-10ABUT	●		16-10ABUT			10	9.525	16	1.68	1.5	2.3	
	22-8ABUT			22-8ABUT			8	12.7	22	2.10	2.0	3.2	
	22-6ABUT			22-6ABUT			6	12.7	22	2.80	2.2	3.5	

Applicable holders **D32, D33**

● : Stock item

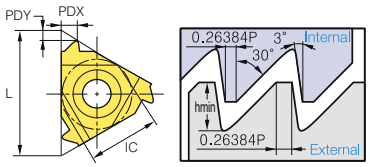
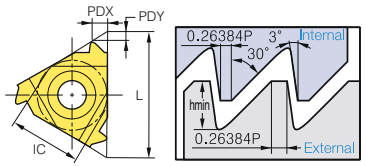
British Buttress (BBUT)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch TPI	Dimensions (mm) IC	L	hmin	PDY	PDX	Configuration
External	ER 16-16BBUT	●		EL 16-16BBUT			16	9.525	16	0.80	1.1	1.6	
	16-12BBUT			16-12BBUT			12	9.525	16	1.07	1.4	2.1	
	16-10BBUT			16-10BBUT			10	9.525	16	1.28	1.4	2.2	
	16-8BBUT	●		16-8BBUT			8	9.525	16	1.61	1.6	2.5	
	22-8BBUT			22-8BBUT			8	12.7	22	1.61	1.6	2.5	
Internal	IR 16-16BBUT	●		IL 16-16BBUT			16	9.525	16	0.80	1.1	1.6	
	16-12BBUT			16-12BBUT			12	9.525	16	1.07	1.4	2.1	
	16-10BBUT			16-10BBUT			10	9.525	16	1.28	1.4	2.2	
	16-8BBUT			16-8BBUT			8	9.525	16	1.61	1.6	2.5	
	22-8BBUT			22-8BBUT			8	12.7	22	1.61	1.6	2.5	

Applicable holders **D32, D33**

● : Stock item

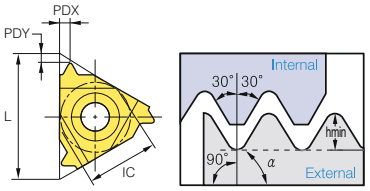
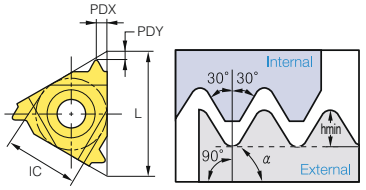
Metric Buttress (SAGE)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TP	IC	L	hmin	PDY	PDX	
External	ER 16-2.0SAGE			EL 16-2.0SAGE			2.0	9.525	16	1.74	1.47	2.08	
	22-2.0SAGE			22-2.0SAGE			2.0	12.7	22	1.74	1.47	2.08	
	22-3.0SAGE	●		22-3.0SAGE			3.0	12.7	22	2.60	1.79	2.60	
	27-4.0SAGE	●		27-4.0SAGE			4.0	15.875	27	3.55	1.93	3.20	
Internal	IR 16-2.0SAGE	●		IL 16-2.0SAGE			2.0	9.525	16	1.50	1.52	2.2	
	22-3.0SAGE			22-3.0SAGE			3.0	12.7	22	2.25	1.66	2.9	
	27-4.0SAGE	●		27-4.0SAGE			4.0	15.875	27	3.09	2.12	3.2	

Applicable holders **D32, D33**

●: Stock item

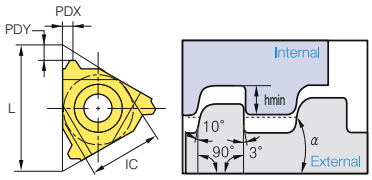
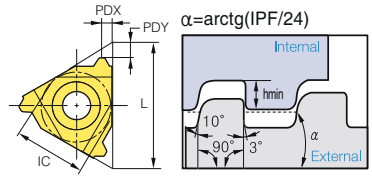
API

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 22-4API382	●		EL 22-4API382			4	12.7	22	3.09	2.1	2.8	
	22-4API383			22-4API383			4	12.7	22	3.08	2.1	2.8	
	22-4API502	●		22-4API502			4	12.7	22	3.75	2.0	2.9	
	22-4API503	●		22-4API503			4	12.7	22	3.74	2.0	2.9	
	22-5API403			22-5API403			5	12.7	22	2.99	1.8	2.6	
	22-6API551			22-6API551			6	12.7	22	1.41	2.6	2.0	
	27-4API382	●		27-4API382			4	15.875	27	3.09	2.1	2.8	
	27-4API383			27-4API383			4	15.875	27	3.08	2.1	2.8	
	27-4API502			27-4API502			4	15.875	27	3.75	2.1	3.1	
	27-4API503	●		27-4API503			4	15.875	27	3.74	2.1	3.1	
	27-5API403	●		27-5API403			5	15.875	27	2.99	1.9	2.7	
Internal	IR 22-4API382			IL 22-4API382			4	12.7	22	3.09	2.1	2.8	
	22-4API383			22-4API383			4	12.7	22	3.08	2.1	2.8	
	22-4API502	●		22-4API502			4	12.7	22	3.75	2.1	3.1	
	22-4API503			22-4API503			4	12.7	22	3.74	2.0	2.9	
	22-5API403	●		22-5API403			5	12.7	22	2.99	1.8	2.6	
	22-6API551	●		22-6API551			6	12.7	22	1.41	2.6	2.0	
	27-4API382			27-4API382			4	15.875	27	3.09	2.1	2.8	
	27-4API383	●		27-4API383			4	15.875	27	3.08	2.1	2.8	
	27-4API502	●		27-4API502			4	15.875	27	3.75	2.1	3.1	
	27-4API503	●		27-4API503			4	15.875	27	3.74	2.1	3.1	
	27-5API403	●		27-5API403			5	15.875	27	2.99	1.9	2.7	

Applicable holders **D32, D33**

●: Stock item

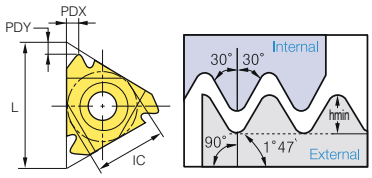
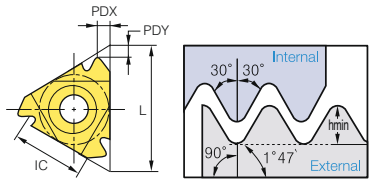
API Buttress Casing (BUT)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 22-5BUT75	●		EL 22-5BUT75			5	12.7	22	1.55	3.1	1.9	
	22-5BUT1			22-5BUT1			5	12.7	22	1.55	3.1	1.9	
Internal	IR 22-5BUT75	●		IL 22-5BUT75			5	12.7	22	1.55	2.8	1.9	
	22-5BUT1	●		22-5BUT1			5	12.7	22	1.55	2.8	1.9	

Applicable holders **D32, D33**

● : Stock item

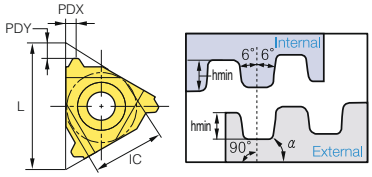
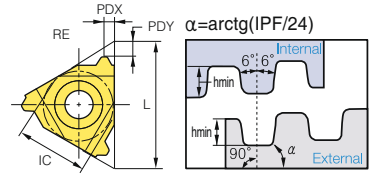
API Round Casing & Tubing (APIRD)

Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 16-10APIRD	●		EL 16-10APIRD			10	9.525	16	1.41	1.2	1.4	
	16-8APIRD	●		16-8APIRD			8	9.525	16	1.81	1.3	1.5	
Internal	IR 16-10APIRD	●		IL 16-10APIRD			10	9.525	16	1.41	1.2	1.4	
	16-8APIRD	●		16-8APIRD			8	9.525	16	1.81	1.3	1.5	

Applicable holders **D32, D33**

● : Stock item

Extreme Line Casing (EL)

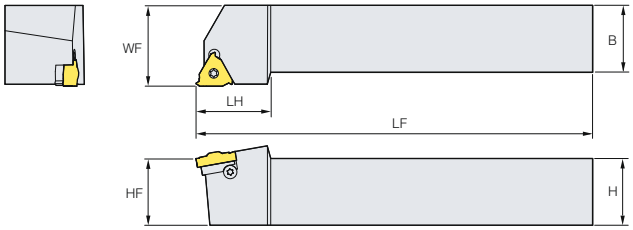
Type	Designation (Right)	PC3030T	PC9070T	Designation (Left)	PC3030T	PC9070T	Pitch	Dimensions (mm)					Configuration
							TPI	IC	L	hmin	PDY	PDX	
External	ER 22-6EL15			EL 22-6EL15			6	12.7	22	1.21	1.9	1.9	
	22-5EL125			22-5EL125			5	12.7	22	1.71	2.3	2.4	
Internal	IR 22-6EL15			IL 22-6EL15			6	12.7	22	1.39	1.8	1.9	
	22-5EL125			22-5EL125			5	12.7	22	1.91	2.2	2.4	

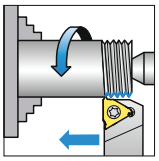
Applicable holders **D32, D33**

● : Stock item

ER(L)H

(Screw on system)





• R type holder

(mm)

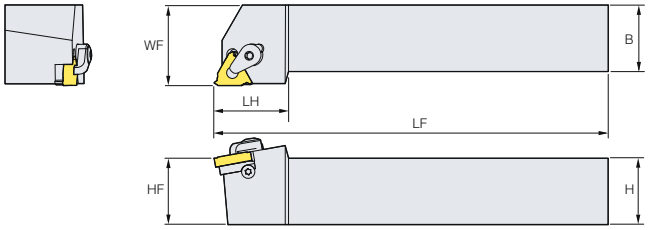
Designation		Stock R	Stock L	Inscribed circle	H	B	LF	WF	HF	LH	Insert screw	Shim screw	Shim RH	Shim LH	Wrench
ER(L)H	08N-11			6.35	8	8	136.4	11	8	17.5					
	10N-11			6.35	10	10	70.0	11	10	17.5	ST11N	-	-	-	TW08P
	12N-11	●		6.35	12	12	80.0	12	12	17.5					
	12N-16			9.525	12	12	83.2	16	12	22	ST16N	-	-	-	TW10P
	09-16			9.525	9.52	9.52	63.6	16	9.52	20.5					
	12-16	●		9.525	12	12	83.2	16	12	22					
	16-16	●	●	9.525	16	16	100.0	16	16	20.5	ST16	STA16	ATE16	ATI22	TW10P
	20-16	●	●	9.525	20	20	128.6	20	20	30					
	25-16	●	●	9.525	25	25	153.6	25	25	30					
	32-16	●		9.525	32	32	173.6	32	32	30					
	25-22	●	●	12.7	25	25	155.7	25	25	36					
	32-22	●		12.7	32	32	175.7	32	32	36	ST22	STA22	ATE22	ATI22	TW20P
	40-22			12.7	40	40	205.7	40	40	36					
	25-27	●	●	15.875	25	25	151.6	32	25	35					
	32-27	●		15.875	32	32	176.6	32	32	40					
	40-27	●		15.875	40	40	206.6	40	40	40	ST27	STA27	ATE27	ATI27	TW25L
	50-27			15.875	50	50	256.6	50	50	40					

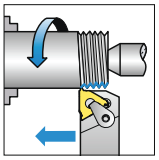
Applicable inserts **D11~D14, D17, D19, D20, D23~D27, D29~D31**

• Helix angle is 1.5 ° for all holders • No shim needed for N type holder ● : Stock item

ER(L)H-C

(Clamp on system)





• R type holder

(mm)

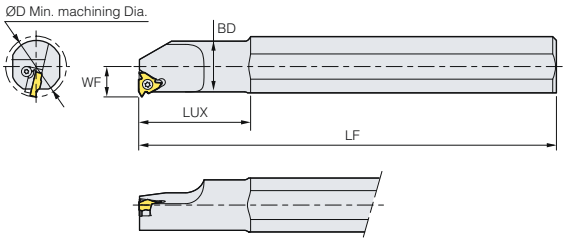
Designation		Stock R	Stock L	Inscribed circle	H	B	LF	WF	HF	LH	Shim screw	Clamp	Shim RH	Shim LH	Wrench
ER(L)H	20-16C	●	●	9.525	20	20	128.6	20	20	30					TW10P
	25-16C	●	●	9.525	25	25	153.6	25	25	30	STA16	CTH16	ATE16	ATI16	TW15P
	32-16C	●		9.525	32	32	173.6	32	32	30					
	25-22C	●	●	12.7	25	25	155.7	25	25	36					
	32-22C	●		12.7	32	32	175.7	32	32	36	STA22	CTH22	ATE22	ATI22	TW20P
	40-22C	●		12.7	40	40	205.7	40	40	36					
	25-27C	●		15.875	25	25	151.6	25	25	35					
	32-27C			15.875	32	32	176.6	32	32	40					
	40-27C			15.875	40	40	206.6	40	40	40	STA27	CTH27	ATE27	ATI27	TW25L
	50-27C			15.875	50	50	256.6	50	50	40					

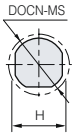
Applicable inserts **D11~D14, D17, D19, D20, D23~D27, D29~D31**

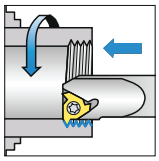
• Helix angle is 1.5 ° for all holders • No shim needed for N type holder ● : Stock item

IR(L)H

(Screw on system)







• R type holder

(mm)

Designation		Stock R	Stock L	Inscribed circle	DMIN	DOCN-MS	BD	H	LF	WF	LUX	Insert screw	Shim screw	Shim RH	Shim LH	Wrench
IR(L)H	10DN-11	●	●	6.35	13	10	10.0	9.5	100	7.3	-					
	10N-11	●	●	6.35	13	20	10.0	18.0	180	7.3	25	ST11N	-	-	-	TW08P
	13N-11	●	●	6.35	16	20	13.0	18.0	180	8.9	32					
	13N-16	●	●	9.525	17	20	12.7	18.0	180	10.3	32					
	16N-16	●	●	9.525	20	20	16.0	18.0	180	11.5	40	ST16N	-	-	-	TW10P
	16DN-16	●	●	9.525	20	16	16.0	15.2	150	11.3	32					
	20-16	●	●	9.525	24	20	20.0	18.0	180	13.4	40					
	25-16	●	●	9.525	29	32	25.0	29.0	250	16.3	60					
	25D-16	●		9.525	29	25	24.5	22.6	200	16.1	45	ST16	STA16	ATI16	ATE16	TW10P
	32-16	●	●	9.525	36	32	32.0	29.0	250	19.6	60					
	40-16	●		9.525	44	40	40.0	36.0	300	23.8	60					
	20N-22	●		12.7	27	20	20.0	18.0	180	15.6	50	ST22N	-	-	-	TW20P
	25-22	●	●	12.7	32	32	25.0	29.0	250	17.4	60					
	25D-22	●		12.7	32	25	24.6	22.6	200	17.2	45					
	32-22	●		12.7	39	32	32.0	29.0	250	21.5	60	ST22	STA22	ATI22	ATE22	TW20P
	40-22	●		12.7	47	40	40.0	36.0	300	25.8	60					
	32-27	●		15.875	40	32	32.0	29.0	250	22.4	60					
	40-27	●		15.875	48	40	40.0	36.0	300	26.4	60					
	50-27	●		15.875	58	50	50.0	45.0	350	31.4	75	ST27	STA27	ATI27	ATE27	TW25L
	60-27	●		15.875	69	60	60.0	54.0	400	36.4	75					

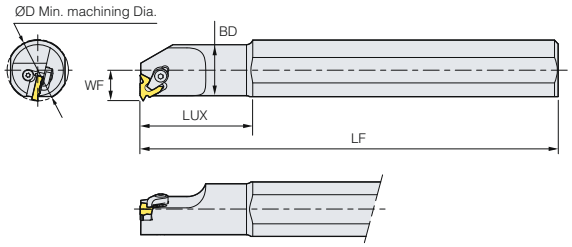
Applicable inserts **D11, D12, D15, D16, D18, D21~D26, D28~D31**

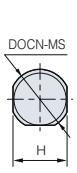
• Helix angle is 1.5 ° for all holders • No shim needed for N type holder • Processing smaller than D uses NFTT or MSB

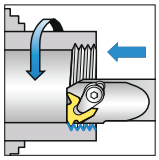
● : Stock item

IR(L)H-C

(Clamp on system)







• R type holder

(mm)

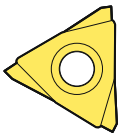
Designation		Stock R	Stock L	Inscribed circle	DMIN	DOCN-MS	BD	H	LF	WF	LUX	Shim screw	Clamp	Shim RH	Shim LH	Wrench
IR(L)H	20-16C	●		9.525	24	20	20.0	18.0	180	13.4	50					
	25-16C	●		9.525	29	32	25.0	28.0	250	16.3	60					TW10P
	25D-16C	●		9.525	29	25	24.6	22.6	200	16.1	45	STA16	CTH16	ATI16	ATE16	TW15P
	32-16C	●		9.525	36	32	32.0	29.0	250	19.6	60					
	40-16C	●		9.525	44	40	40.0	36.0	300	23.8	60					
	25-22C	●		12.7	32	32	25.0	29.0	250	17.4	60					
	25D-22C	●		12.7	32	25	24.6	22.6	200	17.2	45					
	32-22C	●		12.7	39	32	32.0	29.0	250	21.5	60	STA22	CTH22	ATI22	ATE22	TW20P
	40-22C	●		12.7	47	40	40.0	36.0	300	25.8	60					
	32-27C	●		15.875	40	32	32.0	29.0	250	22.4	60					
	40-27C			15.875	48	40	40.0	36.0	300	26.4	60					
	50-27C	●		15.875	58	50	50.0	45.0	350	31.4	75	STA27	CTH27	ATI27	ATE27	TW25L
	60-27C			15.875	69	60	60.5	54.0	400	36.4	75					

Applicable inserts **D11, D12, D15, D16, D18, D21~D26, D28~D31**

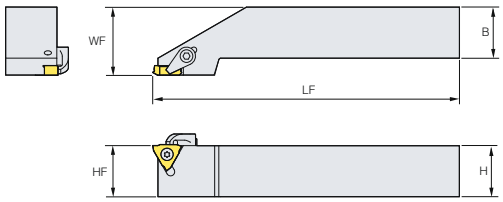
• Helix angle is 1.5 ° for all holders

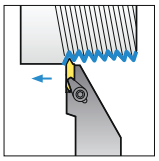
● : Stock item

VTH



VETR





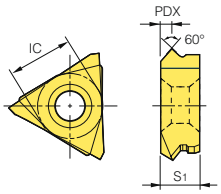
• R type holder

(mm)

Designation		Stock	H=(h)	B	LF	WF	Applicable inserts	Clamp	Clamp screw	Screw	Wrench
VTH	2020R	●	20	20	125	26.4	VETR	CS6R1	DHA0617	FTKA03510	TW15P HW30L
	2525R	●	25	25	150	33.4					
	3225R		32	25	170	33.4					

● : Stock item

Vertical type thread insert

Picture	Designation		Uncoated ST10	Dimensions (mm) Pitch (TP)	Dimensions (mm) PDX	Configuration
	VETR	080		0.8	1.4	
		100	●	1.0	1.4	
		125		1.25	1.4	
		150	●	1.5	1.2	
		175		1.75	1.2	
		200	●	2.0	1.2	
		250		2.5	1.4	
		300	●	3.0	1.6	
		150F	●	0.8~1.5	1.4	
		300F	●	1.5~3.0	1.6	

IC: 9.525 S_1: 4.76

● : Stock item

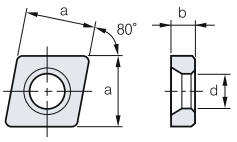
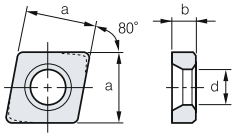
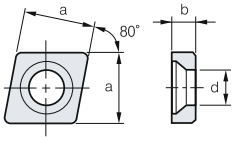
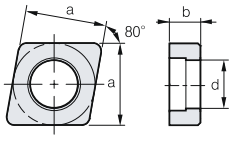
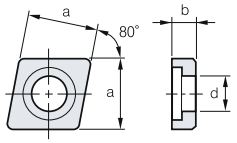
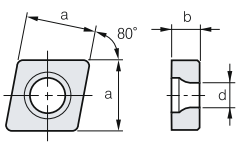
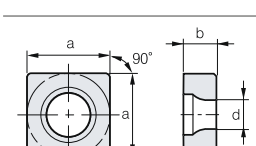
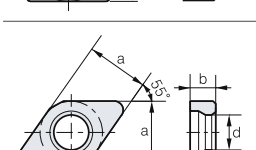
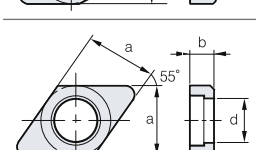
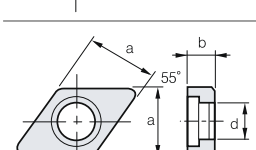
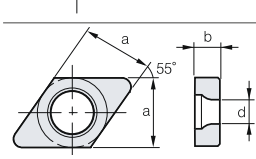
PART

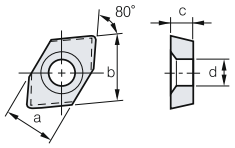
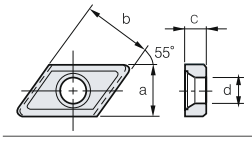
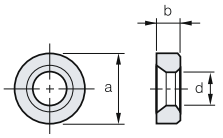
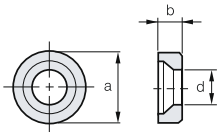
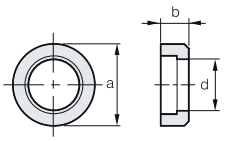
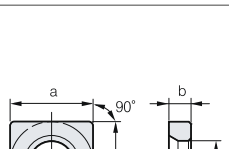
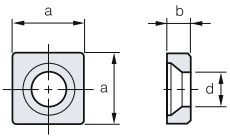
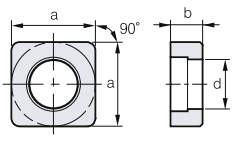
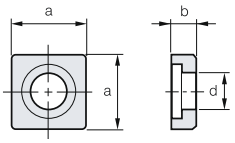
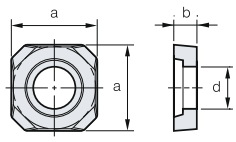
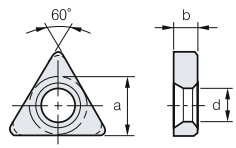
PARTS

Technical information for PARTS

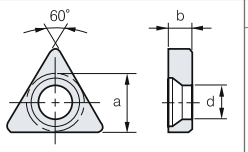
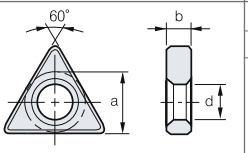
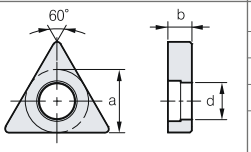
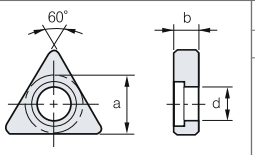
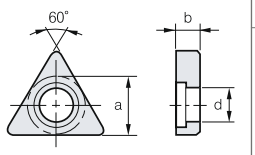
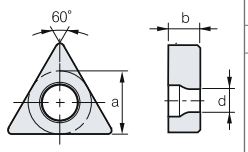
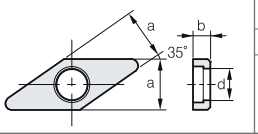
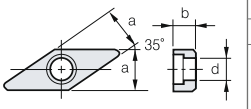
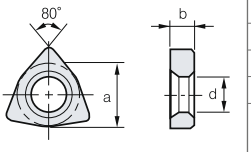
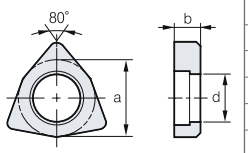
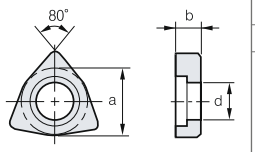
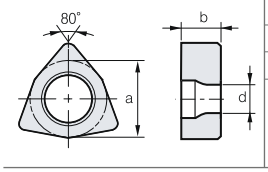
E3	Shim
E4	Cartridge
E4	Chip breaker
E4	Chip cover
E4	Clamp
E5	Coolant bolt
E5	Wrench bolt
E5	Lever
E6	Locator
E6	Nut
E6	Pin
E6	Screw
E7	Shim pin
E8	Spring
E8	Wrench
E8	Stop ring
E8	Washer
E8	Stopper
E8	Nozzle

Shim

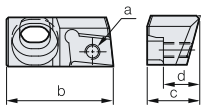
Geometry	Designation	Dimensions				
		a	b	c	d	angle
	SC32	8.5	3.18		4.9	
	SC32N	8.5	3.18		4.88	
	SC42	12.5	3.18		6.9	
	SC42N	11.6	3.18		6.5	
	SC53	15.7	4.76		7.9	
	SC53N	14.6	4.76		8.11	
	SC63	18.85	4.76		10	
	SC63N	17.8	4.76		9.6	
	SC83	24.4	4.76		12.8	
	SC84N	24.2	6.35		13	
	SC42B	12.5	3.18		6.9	
	SC42CC	12.5	3.18		3.5	
	SC32D	9.27	3.18		6.48	
	SC43D	12.45	4.76		7.34	
	SC53D	15.62	4.76		9.65	
	SC63D	18.8	4.76		11.25	
	SC84D	25.08	6.35		14.85	
	SC42S	11.5	3.18		6.4	
	SC32S	8.3	3.18		5.4	
	SC63V	18.35	4.76		5.5	
	SC83V	25.3	4.76		6.55	
	SC84V	25.3	6.35		6.35	
	SC32V	9.12	3.18		3.4	
	SC42V	12.6	3.18		4.5	
	SC44V	12.6	6.35		4.5	
	SC54V	15.75	6.35		5.5	
	SS32V	9.12	3.18		3.4	
	SS42V	12.6	3.18		4.5	
	SS54V	15.75	6.35		5.5	
	SS64V	18.9	6.35		5.5	
	SD317	9.35	2.7		5.2	
	SD32N	8.5	3.18		4.88	
	SD42	12.5	3.18		6.9	
	SD42N	11.6	3.18		6.5	
	SD43N	11.6	4.75		6.5	
	SD32D	9.2	3.18		5.8	
	SD43D	12.45	4.76		7.34	
	SD32S	8.5	3.18		5.4	
	SD42S	11.5	3.18		6.4	
	SD32V	9.12	3.18		3.4	
	SD43V	12.6	4.76		4.5	
	SD44V	12.6	6.35		4.5	

Geometry	Designation	Dimensions				
		a	b	c	d	angle
	SES33C	9.1	12	4.76	3.5	
	SK33C	9.33	14.7	4.8	3.5	
	SK33CL	9.33	14.7	4.8	3.5	
	SR10	8.4	3.18		4.7	
	SR12	10	3.18		4.7	
	SR16	13.55	4.76		6.9	
	SR20	17.1	4.85		7.9	
	SR25	22	6.35		9.6	
	SR32	27.8	6.35		13	
	SR42CC	12.575	3.18		3.5	
	SR10S	8.8	3.18		5.4	
	SR12S	10.55	3.18		5.4	
	SS32	8.5	3.18		4.9	
	SS32N	8.5	3.18		4.88	
	SS42	12.5	3.18		6.9	
	SS42B	12.5	3.18		6.9	
	SS42N	11.6	3.18		6.5	
	SS53	15.7	4.76		7.9	
	SS53N	14.6	4.76		8.11	
	SS63	18.85	4.76		10	
	SS63N	17.8	4.76		9.6	
	SS84	24.4	6.35		12.8	
	SS84N	24.2	6.35		13	
	SS42CC	12.5	3.18		3.5	
	SS32CC	9.3	3.18		3.5	
	SS32D	9.27	3.18		5.77	
	SS43D	12.45	4.76		7.34	
	SS53D	15.62	4.76		9.65	
	SS63D	18.8	4.76		11.25	
	SS84D	25.15	6.35		14.43	
	SS32S	8.3	3.18		5.4	
	SS42S	11.5	3.18		6.4	
	SS42SAF	11.2	3		5.5	
	ST317	9.35	2.7		5	
	ST317B	9.35	2.7		5	
	ST317N	8.5	2.7		4.88	
	ST42	12.5	3.18		6.9	
	ST42N	11.6	3.18		6.5	
	ST53	15.7	4.76		7.9	

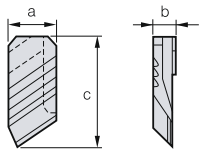
Shim

Geometry	Designation	Dimensions				
		a	b	c	d	angle
	ST32CC	9.35	3.18		3.5	
	ST32C1	9.13	3.18		4.95	
	ST42C1	12.3	3.18		4.95	
	ST32D	9.35	3.18		5.77	
	ST43D	12.52	4.76		7.34	
	ST53D	15.7	4.76		9.65	
	ST63D	18.87	4.76		11.25	
	ST32M	8.7	3.18		4.7	
	ST43M	12.5	4.76		6.3	
	ST32S	8.5	3.18		5.4	
	ST32V	9.12	3.18		3.4	
	ST44V	12.6	6.35		4.5	
	SV32D	9.2	3.18		5.8	
	SV43D	12.29	4.76		7.34	
	SV32D2	9.2	3.18		5.8	
	SV32S	8.4	3.18		5.4	
	SW317	9.35	2.7		5	
	SW317N	8.5	2.7		4.88	
	SW42	12.5	3.18		6.9	
	SW42N	11.6	3.18		6.5	
	SW32D	9.25	3.18		5.8	
	SW43D	12.45	4.76		7.34	
	SW53D	15.62	4.76		9.65	
	SW63D	18.8	4.76		11.25	
	SW84D	24.89	6.35		14.43	
	SW43M	12.5	4.76		6.2	
	SW32M	8.52	3.18		5.2	
	SW32V	9.12	3.18		3.4	
	SW44V	12.6	6.35		4.5	
	SW54V	15.75	4.76		5.5	

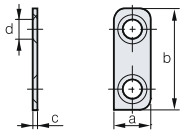
Cartridge

Geometry	Designation	Dimensions				
		a	b	c	d	angle
	LAPDR-AJ	M4x0.7	30	15	10	

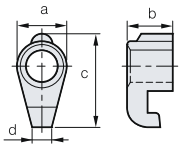
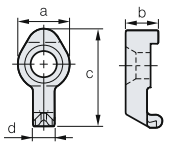
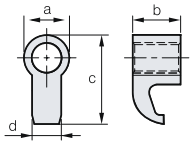
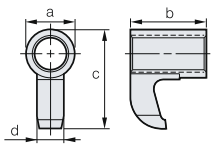
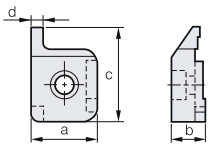
Chip breaker

Geometry	Designation	Dimensions				
		a	b	c	d	angle
	CB20	8.5	3.4	20		

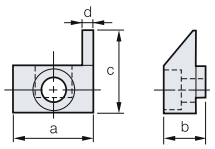
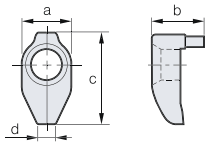
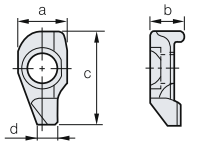
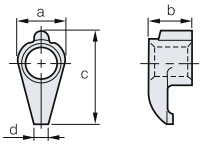
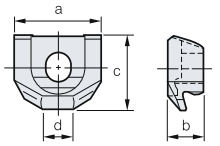
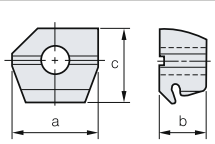
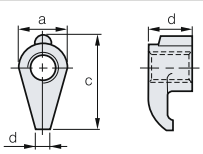
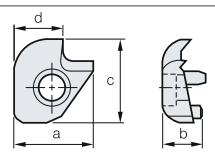
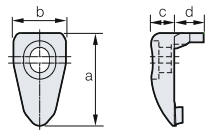
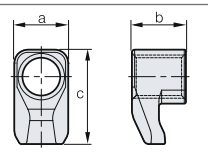
Chip cover

Geometry	Designation	Dimensions				
		a	b	c	d	angle
	CFMP3R14R1-A	10.5	20	1	(Ø4.3)	
	CFMP3R-A	8	18	1	(Ø4.3)	
	CFMP4R-A	8	22	1	(Ø4.3)	

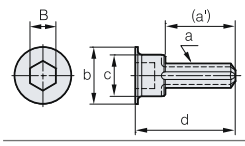
Clamp

Geometry	Designation	Dimensions				
		a	b	c	d	angle
	CA05R	8.9	5.5	17.6	3.3	
	CA06R	12	7.2	20.6	5.3	
	CH5R3	7.85	7.2	14.8	3.1	
	CH6R4	12.02	9	23.97	3.75	
	CBH4.5R1	8	5.74	17.7	4	
	CBH4.5R2	9.5	6.4	18	4	
	CBH5R1	10	7.8	21.3	5	
	CBH6R1	12	9.3	26	6	
	CDH6N	9.5	10	18.6	6.1	
	CDH7N	7.9	11.4	14.7	4.7	
	CDH8N	10.9	16.9	22.4	6.1	
	CDH8N1	10.9	16.9	19.1	6.1	
	CDH8N2	10.9	16.9	25.4	6.1	
	CDH8N3	12.5	19.8	25.4	9.2	
	CDS8N	10.8	17	22.2	5	
	CGH5R1	19.5	9.5	28.8	2.5	
	CGH5R2	20.5	9.5	28.8	3.5	
	CGH5R3	22.5	9.5	28.8	5.5	

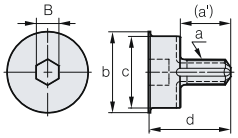
Clamp

Geometry	Designation	Dimensions				
		a	b	c	d	angle
	CGH6R1	22.3	11.9	23.2	2.5	
	CGH6R2	23.2	11.9	23.2	3.4	
	CGH6R3	24.0	11.9	23.2	4.2	
	CHH3.5R1	7.5	6.7	13	2.45	
	CHH4.5R1	7.9	7.85	14.1	2.54	
	CHH5.5R1	9.8	10	16.4	4	
	CH4R1	7.4	5	14.1	3.1	
	CH5R1	10.0	6.6	20.2	4.5	
	CH5R2	6.85	7	13.8	2	
	CH6R2	8.85	8.7	16.5	2	
	CH6R3	11.8	10	23	4.2	
	CMH5R1	18.5	7.9	16	6.26	
	CMH6R1	24	8.5	16.5	8.28	
	CMH6R2	20	10.7	18.56	13.25	
	CMH6R6	18.5	7.9	16	6.26	
	CMH6R3	20.0	11	17.51		
	CMH6L3	20.0	11	17.51		
	CS5R1	6.8	7	14.5	2	
	CS6R1	8.8	8.5	18.1	2.7	
	CS8R1	11.8	10	23	4.2	
	CTH6L1	23.5	12	25.4	14.35	
	CTH6R1	23.5	12	25.4	14.35	
	CTH6R2	21.78	12.9	31.22	17.33	
	CVH3	21	11	5.8	7.7	
	CVH3V	29	14	7	8	
	CVH4	25.5	14.5	6	7	
	CVH5	30	17	7.5	9.5	
	CVH6	33.5	18.5	8	10	
	CXH8N	10.1	10.0	17.5	-	

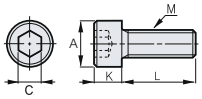
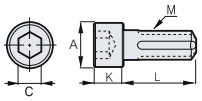
Coolant bolt

Geometry	Designation	Dimensions					
		a	b	c	d	B(T)	á
	CBA063-3IN/MM	M10	Ø25	Ø16	37	8	(27)
	CBA063-4IN/MM	M10	Ø25	Ø16	42.5	8	(27)
	CBA080-IN/MM	M12	Ø28	Ø18	45.5	10	(32)
	CBP063-IN/MM	M10	Ø22	Ø16	38.6	8	(27)
	CBP080-IN/MM	M12	Ø25	Ø18	48.6	10	(32)

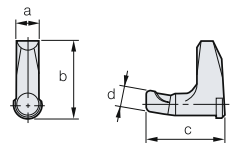
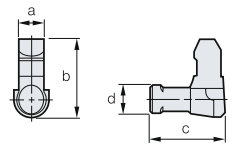
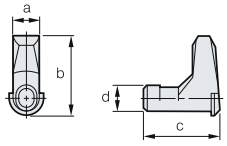
Coolant bolt

Geometry	Designation	Dimensions					
		a	b	c	d	B(T)	á
	CBA100-IN/MM	M16	Ø54	Ø43	47	14	(32)
	CBA100-IN-25.4	M12	Ø44	Ø36	41.5	10	(25)
	CBA125-IN	M20	Ø65	Ø54	56	17	(38)
	CBA125-IN-25.4	M12	Ø44	Ø36	43.5	10	(25)
	CBA125-MM	M20	Ø65	Ø54	57	17	(35)
	CBA160-IN	M24	Ø83	Ø73	56	19	(38)
	CBA160-MM	M20	Ø83	Ø73	53	17	(34)
	CBP100-IN	M16	Ø50	Ø43	48.6	14	(32)
	CBP100-IN-25.4	M12	Ø44	Ø36	46.5	10	(25)
	CBP100-MM-1	M16	Ø50	Ø43	48.6	14	(36)
	CBP125-IN	M20	Ø65	Ø54	56	17	(38)
	CBP125-IN-25.4	M12	Ø44	Ø36	55	10	(25)
	CBP125-MM	M20	Ø65	Ø54	57	17	(35)
	CBP125-MM-1	M20	Ø61	Ø54	65.6	14	(33)
	CBP160-IN	M24	Ø83	Ø73	56	19	(38)
	CBP160-MM	M20	Ø83	Ø73	53	17	(34)

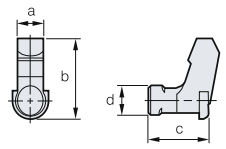
Wrench bolt

Geometry	Designation	Dimensions				
		A	C	K	L	M
	SB0825	13	6	8	25	M08 x 1.25
	SB1025	16	8	10	25	M10 x 1.50
	SB1035	16	8	10	35	M10 x 1.50
	SB1230	18	10	12	30	M12 x 1.75
	SB1630	24	14	16	30	M16 x 2.0
	SB1645	24	14	16	45	M6 x 2.0
	SB2040	30	17	20	40	M20 x 2.5
	CB1025	13	6	8	25	M08x1.25
	CB1025	16	8	10	25	M10x1.50
	CB1035	16	8	10	35	M10x1.50
	CB1230	18	10	12	30	M12x1.75
	CB1245	18	10	12	45	M12x1.75
	CB1630	24	14	16	30	M16x2.0
	CB1645	24	14	16	45	M16x2.0
	CB2040	30	17	20	40	M20x2.5

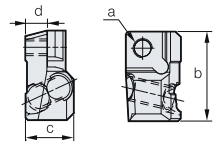
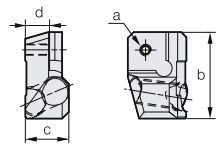
Lever

Geometry	Designation	Dimensions			
		a	b	c	d
	LR10	3.4	10.8	11.7	3
	LR12	3.7	13.5	13.4	3.5
	LR16	4.75	18.7	18.3	4.3
	LR20	5.9	20.5	18.7	5.55
	LR25	7.35	24.25	23.7	6.2
	LR32	8.45	29.7	26.95	7.9
	LV2	2.6	7.75	6	2.1
	LV3B	3.1	10	9.5	3.7
	LV4B	4.7	14.55	15.6	4.7
	LV4BN	4.7	16	14.9	4.68
	LV3	3.7	10	12	3.6
	LV3N	3.75	10	12	3.55
	LV3AN	3.75	12.1	11.4	4.64
	LV3C	3.1	10	7.85	3.6
	LV3CN	3.2	10	7.8	3.6
	LV3DN	3.2	11.65	9.5	3.55
	LV4	4.7	14.55	14	4.7
	LV4N	4.7	13.45	13.2	4.68
	LV5	6	17.1	17	6
	LV5N	6	16.4	17.08	5.95
	LV5AN	6	18.82	17.3	5.95
	LV6N	7.5	20.5	21	7.6
	LV8N	8.6	25.5	25.4	8.6

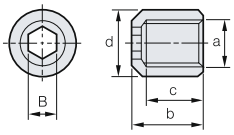
Lever

Geometry	Designation	Dimensions			
		a	b	c	d
	LV4A	4.6	13.24	9.95	4.7
	LV4AN	4.7	13.3	10	4.68

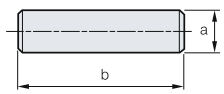
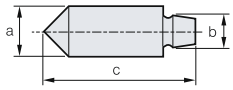
Locator

Geometry	Designation	Dimensions			
		a	b	c	d
	LFMP3R-A	M3.5	18.7	10.1	4.6
	LFMP4R1-A	M4.5	24.3	13.8	6.2
	LFMP4R-A	M4.5	26.3	13.8	6.2
	LFMA3R-A	M3	18.5	9.5	4.8
	LFMA4R-A	M3.5	26	13.1	7.3

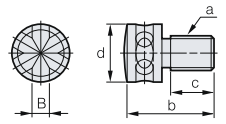
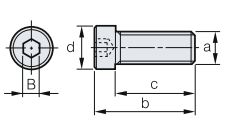
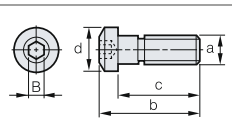
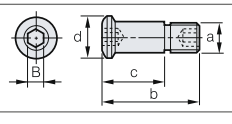
Nut

Geometry	Designation	Dimensions					
		a	b	c	d	B(T)	a´
	N0407	M4 X 0.7	7.5	6	7	3	
	N0508	M5 X 0.8	8.3	6.6	7	3	

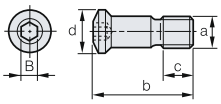
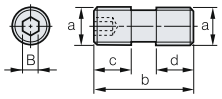
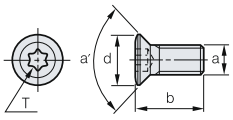
Pin

Geometry	Designation	Dimensions		
		a	b	c
	PN0308	3.0	8	
	PN0310	3.0	10	
	PN0312	3.0	12	
	PN0314	3.0	14	
	PN0515	4.8	3.3	14.5

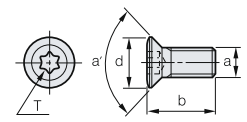
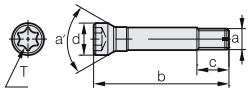
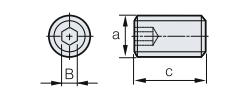
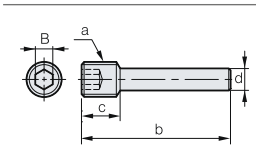
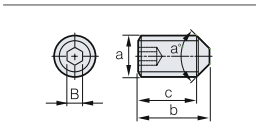
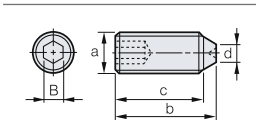
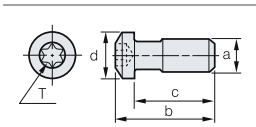
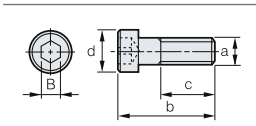
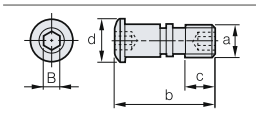
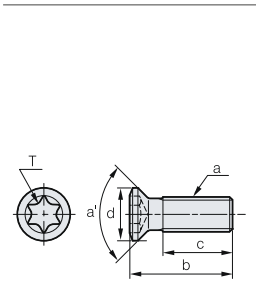
Screw

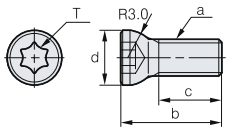
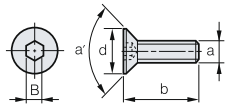
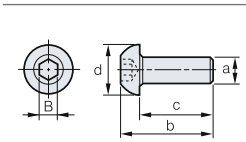
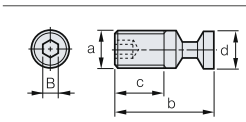
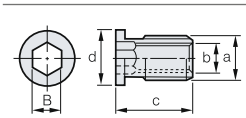
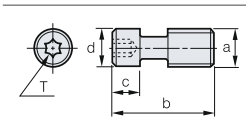
Geometry	Designation	Dimensions					
		a	b	c	d	B(T)	a´
	AZ0508F	M5 X 0.5	13	8	9	Ø2	
	AZ0514	M5 X 0.8	14	7	9	Ø2.5	
	BHA0510	M5 X 0.8	15	10	8.5	4.0	
	BHA0512	M5 X 0.8	17	12	8.5	4.0	
	BHA0612	M6 X 1.0	18	12	10	5.0	
	BHA0614	M6 X 1.0	20	14	10	5.0	
	BHA0616	M6 X 1.0	22	16	10	5	
	BHA0619-NYLOK	M6 X 1.0	25	19	10	5	
	CHX0407	M4 X 0.7	9.5	7.36	5.7	2.5	
	CHX0415	M4 X 0.7	17.5	15	5.4	2.5	
	CHX0510	M5 X 0.8	13.1	10.1	7.7	3	
	CHX0518	M5 X 0.8	21.5	18	8	3	
	CHX0622	M6 X 1.0	26.5	22	10	4	
	CHX0513	M5 X 0.8	13	8	6.4	2.5	
	CHX0616	M6 x 1.0	16.2	10.1	8.5	3	
	CHX0617L	M6 x 1.0(왼나사)	17.2	10.1	8.5	3	
	CHX0621	M6 X 1.0	21	10.1	8.5	3	

Screw

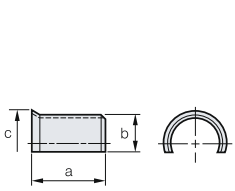
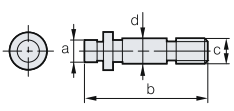
Geometry	Designation	Dimensions					
		a	b	c	d	B(T)	a´
	CHX0625	1/4-20UNC	24.8	11	10	4	
	CTX03510	M3.5 X 0.6	10	4.7	5.3	15	
	CTX04513	M4.5 X 0.75	13.1	6.9	6.8	20	
	CTX04513H	M4.5 X 0.75	13.1	7.2	6.8	20	
	CTX0515	M5 X 0.8	15	8	7	20	
	CTX0517	M5 X 0.8	17.5	10	7	20	
	CTX0621	M6 X 1.0	21.2	12.4	9	25	
	DHA0514	M5 X 0.8	14.0	5.0	7.0	2.5	
	DHA0617	M6 x 1.0	17.0	7.0	7.5	3.0	
	DHA0620	M6 x 1.0	20.0	8.0	8.0	3.0	
	DHA0624	M6 x 1.0	24.0	12.0	8.5	3.0	
	DHA0815	M8 X 1.25	15.5	6.25	6.25	4.0	
	DHA0818F	M8 X 1.0	18	8.5	5.5	4.0	
	DHA0820	M8 X 1.25	20.0	8.0	9.0	4.0	
	DHA0821F	M8 X 1.0	21.0	8.5	8.5	4.0	
	DHA0825	M8 X 1.25	25.0	10.0	9.0	4.0	
	DHA0830	M8 X 1.25	30.0	11.5	11.5	4.0	
	ETGA0520CBM	M5 X 0.8	20		6.5	20	43°
	ETGD0825	M8 X 1.25	25.2		11.1	40	40°
	ETKA0523	M5 X 0.8	23		7.6	20	43°
	ETKA0625	M6 X 1.0	25.5		8.8	20	43°
	ETKD0516	M5 X 0.8	16.4		6.8	20	40°
	ETKD0620	M6 X 1.0	20		8.3	25	40°
	ETNA02506	M2.5 X 0.45	5.7		3.4	7	43°
	ETNA0408	M4 X 0.7	8.0		5.1	15	43°
	ETNA0412	M4 X 0.7	12		5.1	15	43°
	ETNA0511	M5 X 0.8	11.0		6.4	20	43°
	ETND02506F	M2.5 X 0.35	6.25		3.1	7	40°
	ETND0307F	M3 X 0.35	7.8		3.7	8	40°
	ETND03509	M3.5 X 0.6	9.6		4.7	10	40°
	FTGA03507	M3.5 X 0.6	7.0		5.3	15	60°
	FTGA03508	M3.5 X 0.6	8.0		5.3	15	60°
	FTGA03510	M3.5 X 0.6	10.0		5.3	15	60°
	FTGA03512	M3.5 X 0.6	12.0		5.0	15	60°
	FTGA0411F	M4 X 0.5	11.0		7.0	15	60°
	FTGA0417CBM	M4 X 0.7	17.0		5.5	15	62°
	FTGA0510-P	M5 X 0.8	10.0		7.0	20	63°
	FTGA0512-P	M5 X 0.8	12.0		7.0	20	63°
	FTGA0513	M5 X 0.8	13.2		7.0	20	61°
	FTGA0513-P	M5 X 0.8	13.0		7.0	20	63°
	FTGA0517	M5 X 0.8	17.0		7.5	20	61°
	FTGA0621	M6 X 1.0	21.5		9.0	20	61°
	FTGA0826	M8 X 1.25	26.0		11.6	25	61°
	FTKA02206	M2.2 X 0.45	5.5		3.0	6	60°
	FTKA02206S	M2.2 X 0.45	5.6		3.05	7	60°
	FTKA02555	M2.5 X 0.45	5.5		3.5	7	60°
	FTKA02565	M2.5 X 0.45	6.5		3.5	7	60°
	FTKA02565S	M2.5 X 0.45	6.5		3.8	8	60°
	FTKA0307	M3 X 0.5	7.2		4.2	9	60°
	FTKA03508	M3.5 X 0.6	8.4		5.5	15	60°
	FTKA03510	M3.5 X 0.6	10.4		5.5	15	60°
	FTKA03511A	M3.5 X 0.6	11.0		5.2	15	60°
	FTKA0408	M4 X 0.7	8.4		5.5	15	60°
	FTKA0410	M4 X 0.7	10.0		5.5	15	60°
	FTKA0411K	M4 X 0.7	11.0		6.8	15	60°
	FTKA0412B	M4 X 0.7	12.5		5.5	15	60°
	FTKA0413	M4 X 0.7	13.0		5.5	15	60°
	FTNA01633	M1.6 X 0.35	3.3		2.6	6	60°
	FTNA0203	M2 X 0.4	3.0		2.7	6	60°
	FTNA02033	M2 X 0.4	3.3		2.7	6	60°
	FTNA0204	M2 X 0.4	4.3		2.7	6	60°
	FTNA02205	M2.2 X 0.45	4.5		3.0	6	60°
	FTNA0238	M2 X 0.4	3.8		3.0	6	60°
	FTNA0305	M3 X 0.5	5.2		4.2	9	60°
	FTNA0306	M3 X 0.5	6.2		4.2	9	60°
	FTNA0307	M3 X 0.5	7.2		4.2	9	60°
	FTNA0408	M4 X 0.7	8.5		5.5	15	60°
	FTNA0411	M4 X 0.7	11.0		5.5	15	60°
	FTNA0511	M5 X 0.8	11		7.0	20	63°
	FTNA0513	M5 X 0.8	13.0		7.0	20	60°
	FTNA0516	M5 X 0.8	16.0		7.0	20	60°

Screw

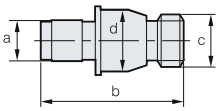
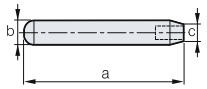
Geometry	Designation	Dimensions					
		a	b	c	d	B(T)	a´
	FTNB0411	M4 X 0.7	10.8		5.7	15	60°
	FTNC04509	M4.5 X 0.75	9.5		6.8	20	55°
	FTNC04511	M4.5 X 0.75	11.5		6.8	20	55°
	FTNB0209	2 X 0.4	9	2.5	2.7		60°
	FTNB0209-P	2 X 0.4	9	2.5	2.7		60°
	FTNB02512	2.5 X 0.45	12	3.5	3.5		60°
	FTNB02512-P	2.5 X 0.45	12	3.5	3.5		60°
	FTNB02514	2.5 X 0.45	14	3.5	3.5		60°
	FTNB02514-P	2.5 X 0.45	14	3.5	3.5		60°
	FTNB0316	3 X 0.5	16	4.5	4.2		60°
	FTNB0316-P	3 X 0.5	16	4.5	4.2		60°
	FTNB0319	3 X 0.5	19	5	4.5		60°
	FTNB03522	3.5 X 0.6	22	5.6	5.5		60°
	FTNB03524	3.5 X 0.6	24	5.6	5.5		60°
	FTNB0426	4 X 0.7	26	6.7	5.5		60°
	FTNB0528	5 X 0.8	28	6.5	7		60°
	KHA0508	M5 X 0.8	8			2.5	
	KHA0510	M5 X 0.8	10			2.5	
	KHA0610	M6 X 1.0	10			3	
	KHA0612	M6 X 1.0	12			3.0	
	KHA0812	M8 X 1.25	12			4.0	
	KHA0815	M8 X 1.25	15			4.0	
	KHA1015	M10 X 1.5	15			5.0	
	KHA1020	M10 X 1.5	20			5.0	
	KHB0417	M4 X 0.7	17.2	4.5	2.5	2	
	KHB0406	M4 X 0.7	6	4.2	3	2	
	KHC0510	M5 X 0.8	10	8.1		2.5	90°
	KHC0610	M6 X 1.0	10	7.8		3.0	90°
	KHC0812	M8 X 1.25	12	9		4.0	90°
	KHC1016	M10 X 1.5	16	12.3		5.0	90°
	KHC1020	M10 X 1.5	20	16.3		5.0	90°
	KHD0510	M5 X 0.8	10	9	3	2.5	
	KHD0610	M6 X 1.0	10	10	4	3	
	KHD0810	M8 X 1.25	10	10	7.5	4	
	LTX0512	M5 X 0.8	15.1	12	7.3	20	
	LTX0514	M5 X 0.8	17.1	14	7.3	20	
	MHA0512	M5 X 0.8	17.0	10.8	8.0	4.0	
	MHB0310	M3 X 0.5	13.4	8.0	5.5	2.5	
	MHB0410	M4 X 0.7	14.0	8.0	7.0	3.0	
	MHB1055	M10 X 1.5	65	50	16	8	
	MHB1260	M12 X 1.75	72	55	18	10	
	MHB1680	M16 X 2.0	96	75	24	14	
	MHX0523	M5 X 0.8	23.5	9.7	10	2.5	
	MHX0626	M6 X 1.0	25.8	10	11	3	
	MHX0630	M6 X 1.0	30	12.5	10.5	4	
	PTKA02508	M2.5 X 0.45	8	5	3.8	8	92°
	PTKA03510	M3.5 X 0.6	10	5	5	15	92°
	PTKA0407	M4 X 0.7	7	4.6	5.5	15	86°
	PTKA0407F	M4 X 0.5	7.3	3.8	6.5	15	91°
	PTKA0408	M4 X 0.7	8	5.6	5.5	15	86°
	PTKA0408F	M4 X 0.5	8.3	5.7	6.5	15	91°
	PTKA0409F	M4 X 0.5	9.3	6.7	6.5	15	91°
	PTKA0410F	M4 X 0.5	10.3	7.7	6.5	15	91°
	PTKA0411F	M4 X 0.5	11.3	8.7	6.5	15	91°
	PTKA0412	M4 X 0.7	12	7.5	5.9	15	92°
	PTKA0412F	M4 X 0.5	12.3	9.7	6.5	15	91°
	PTKA0413F	M4 X 0.5	13.3	10.7	6.5	15	91°
	PTKA0512	M5 X 0.8	12	7	6.9	20	92°
	PTMA03508	M3.5 X 0.6	8	5.3	6	9	90°
	PTMA0403F	M4 X 0.5	3.3	1.7	6.5	15	91°
	PTMA0404F	M4 X 0.5	4.3	2.7	6.5	15	91°
	PTMA0405F	M4 X 0.5	5.3	3.7	6.5	15	91°
	PTMA0406F	M4 X 0.5	6.3	4.7	6.5	15	91°
	PTMA0411	M4 X 0.7	11	8.5	6.6	15	90°

Geometry	Designation	Dimensions					
		a	b	c	d	B(T)	a´
	FHGA0618	M4 X 0.7	11	6.9	6	15	
	FHGA0618	M6 X 1.0	18		8.5	4.0	61°
	PXMA0306	M3 X 0.5	5.9		5.7	2	90°
	SHX0310	M3 X 0.5	10		5.9	2	91°
	RHA0510	M5 X 0.8		10		4.0	
	RHA0613	M6 X 1.0	16.3	13	10.5	4.0	
	RHA0620	M6 X 1.0	24	20	10.5	4.0	
	VHX0509B	M5 X 0.8	9	4.15	5	2	
	VHX0512B	M5 X 0.8	12	6.5	5	2	
	VHX0512BN	M5 X 0.8	12	6.56	5	2	
	VHX0514	M5 X 0.8	14.5	8.25	5	2	
	VHX0613N	M6 X 1.0	13.4	7.5	5.93	2.5	
	VHX0617	M6 X 1.0	17	10	6	2.5	
	VHX0617N	M6 X 1.0	16.75	8.34	5.9	2.5	
	VHX0621	M6 X 1.0	21	14	6		
	VHX0817N	M8 X 1.0	17.05	7.98	7.9	3	
	VHX0820N	M8 X 1.0	20.7	7.98	7.9	3	
	VHX0820AN	M8 X 1.0	20.5	10.36	7.9	3	
	VHX0821	M8 X 1.0	21	10	8	3	
	VHX0821N	M8 X 1.0	21.2	9.68	7.9	3	
	VHX0823N	M8 X 1.0	23.5	10.36	7.9	3	
	VHX0825	M8 X 1.0	25	12	8	3	
	VHX1027N	M10 X 1.0	27.2	14.4	9.8	5	
	VHX1236N	M12 X 1.0	36	18.3	11.8	5	
	VHX0613A	M6 X 1.0	13.4	9.1	6.0	2.5	
	SHXN0509F	M5 X 0.5	M3.5 X 0.6	8.65	6.3	3.5	
	SHXN0609F	M6 X 0.75	M4 X 0.7	9	7.8	4	
	SHXN0610F	M6 X0.75	M4 X 0.5	10	7.8	4	
	SHXN0712F	M7 X0.75	M5 X 0.8	12	8.5	5	
	WTX0813	M8 X 1.25	17.2	4.9	8.5	25	
	WTX0817	M8 X 1.25	22	4.9	8.5	25	

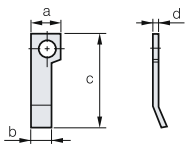
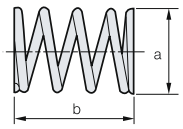
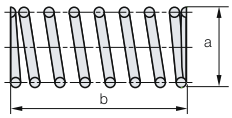
Shim pin

Geometry	Designation	Dimensions			
		a	b	c	d
	SP3	5.5	3.5	5.9	
	SP3N	6.85	3.3	5.55	
	SP4	7.0	4.0	7.6	
	SP4N	5.8	4.35	7.4	
	SP5	8.5	4.5	8.8	
	SP5N	8.5	5.68	9	
	SP6N	11.1	6.0	11.0	
	SP8N	12.0	10.0	15.35	
	SP2M	5	14	M5 X 0.8	6
	SP3M	3.5	19.5	M4 X 0.7	4
	SP3M-1	3.5	16.5	M4 X 0.7	4
	SP4M	5	19	M5 X 0.8	6

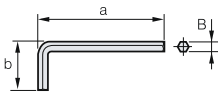
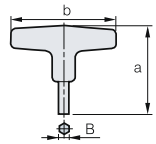
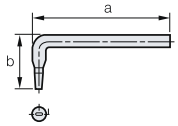
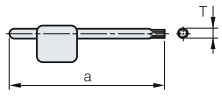
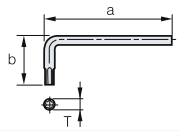
Shim pin

Geometry	Designation	Dimensions			
		a	b	c	d
	SP3D	3.7	13.1	UNF10-32	5.6
	SP3D2	3.6	12	UNF10-32	5.5
	SP3DS	3.7	11.54	UNF10-32	5.6
	SP4D	4.97	17.19	UNF1/4 28	7.12
	SP4DL	5	17.1	UNF1/4 28	7
	SP4DS	4.97	13.26	UNF1/4 28	
	SP5D	6.21	21.9	UNF5/16-24	9.44
	SP6D	7.75	21.9	UNF3/8-24	11.02
	SP8D	9.02	29.63	UNF7/16-20	14.21
	LSPS3	60	8.2	5.55	
	LSPS4	65	10	7	
	LSPS5	69	11.4	8.85	
	LSPS6	69	13	11	
	LSPS8	73	16.5	15.2	

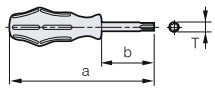
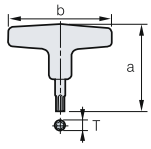
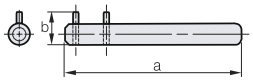
Spring

Geometry	Designation	Dimensions			
		a	b	c	d
	SR2	4.0	2.8	12.6	0.4
	SPR0315	3.0	15		
	SPR0415	4.0	15		
	SR3	9.2	12.5		
	SR4	4.0	11.0		
	SPR0714	7	14		
	SPR0510	5	10		
	SPR0714	7	14		
	SPR0811	8	11		

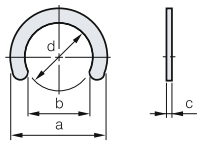
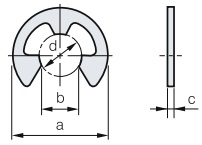
Wrench

Geometry	Designation	Dimensions		
		a	b	B(T)
	HW20L	52	18	2
	HW25L	58.5	20.5	2.5
	HW30L	66	23	3
	HW35L	72	25	3.5
	HW40L	74	29	4
	HW50L	85	33	5
	HW40	82	80	4
	HW50	96	90	5
	SW50L	70	27.5	
	TW06P	63		6
	TW07P	63		7
	TW08P	71		8
	TW09P	75		9
	TW10P	78		10
	TW15P	82		15
	TW20P	86		20
	TW15L	60	21	15
	TW20L	60	21	20

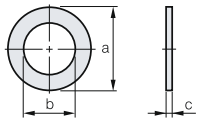
Wrench

Geometry	Designation	Dimensions		
		a	b	B(T)
	TW07S	140	60	7
	TW08S	150	76	8
	TW09S	165	70	9
	TW15S	190	90	15
	TW20S	195	91	20
	TW20	75	80	20
	TW25	74	80	25
	TW15-100	127	80	15
	TW20-100	127	80	20
	SW15S	150	13	

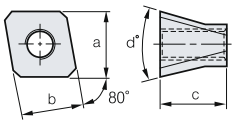
Stop ring

Geometry	Designation	Dimensions			
		a	b	c	d
	CR03	4.8	2.6	0.4	3.0
	CR04	6.6	3.6	0.4	4.0
	CR05	7.6	4.6	0.4	5.0
	ER03	7.0	2.6	0.6	3.0
	ER04	9.0	3.5	0.6	4.0
	ER05	11	4.3	0.6	5.0

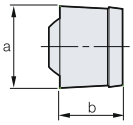
Washer

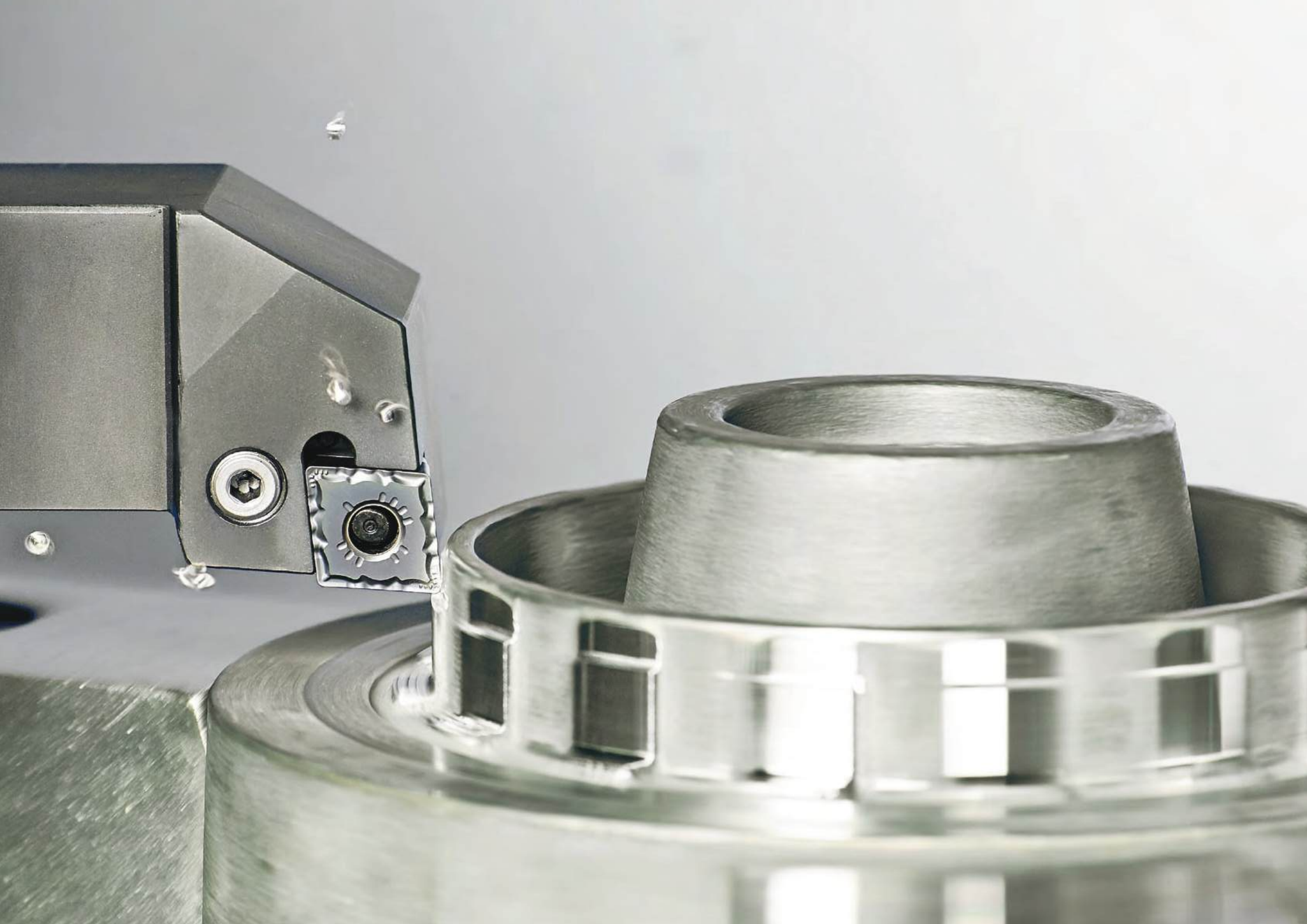
Geometry	Designation	Dimensions		
		a	b	c
	WA3	11.0	6.8	0.5~1.0
	WA4	10.0	5.3	0.5~1.0

Stopper

Geometry	Designation	Dimensions			
		a	b	c	d°
	STP5	11	10.2	11	30°

Nozzle

Geometry	Designation	Dimensions	
		a	b
	CN0605	6	4.6



PART

TECHNICAL INFORMATION

Technical information for TECHNICAL INFORMATION

Technical Information

F3 Workpiece Material Grades
F7 Steel, Non-Ferrous Metal Symbol List
F8 SI Unit Conversion Table
F9 Hardness Calculating Table
F10 Technical Information for Turning
F19 Technical Information for Multi Functional Tools
F22 The Comparison of Chip Breakers
F23 The Comparison of Grade for Turning

Workpiece Material Grades

Carbon steel and alloy steel for structural use

Type		Korea	ISO	Japan	U.S.A	Great Britain	Germany	France	Russia
		KS	ISO	JIS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
Carbon steel		SM10C	C10	S10C	1010	040A10 045A10 045M10	C10E C10R	XC10	-
		SM15C	C15E4 C15M2	S15C	1015	055M15	C15E C15R	-	-
		SM20C	-	S20C	1020	070M20 C22, C22E C22R	C22 C22E C22R	C22 C22E C22R	-
		SM25C	C25 C25E4 C25M2	S25C	1025	C25 C25E C25R	C25 C25E C25R	C25 C25E C25R	-
		SM30C	C30 C30E4 C30M2	S30C	1030	080A30 080M30 CC30 C30E C30R	C30 C30E C30R	C30 C30E C30R	30Г
		SM35C	C35 C35E4 C35M2	S35C	1035	C35 C35E C35R	C35 C35E C35R	C35 C35E C35R	35Г
		SM40C	C40 C40E4 C40M2	S40C	1039 1040	080M40 C40 C40E C40R	C40 C40E C40R	C40 C40E C40R	40Г
		SM43C	-	S43C	1042 1043	080A42	-	-	40Г
		SM45C	C45 C45E4 C45M2	S45C	1045 1046	C45 C45E C45R	C45 C45E C45R	C45 C45E C45R	45Г
		SM48C	-	S48C	-	080A47	-	-	45Г
		SM50C	C50 C50E4 C50M2	S50C	1049	080M50 C50 C50E C50R	C50 C50E C50R	C50 C50E C50R	50Г
		SM53C	-	S53C	1050 1053	-	-	-	50Г
		SM55C	C55 C55E4 C55M2	S55C	1055	070M55 C55 C55E C55R	C55 C55E C55R	C55 C55E C55R	-
		SM58C	C60 C60E4 C60M2	S58C	1059 1060	C60 C60E C60R	C60 C60E C60R	C60 C60E C60R	60Г
Alloy steel	Nickel chromium steel	SNC236 SNC415(H) SNC631(H) SNC815(H) SNC836	- - - 15NiCr13 -	SNC236 SNC415(H) SNC631(H) SNC815(H) SNC836	- - - - -	- - - 655M13(655H13) -	- - - 15NiCr13 -	- - - - -	40XH - 30XH3A - -
	Nickel chromium molybdenum steel	SNCM220	20NiCrMo2 20NiCrMoS2	SNCM220	8615 8617(H) 8620(H) 8622(H)	805A20 805M20 805A22 805M22	20NiCrMo2 20NiCrMoS2	20NCD2	-
		SNCM240	41CrNiMo2 41CrNiMoS2	SNCM240	8637 8640	-	-	-	-
		SNCM415 SNCM420(H) SNCM431 SNCM439 SNCM447 SNCM616 SNCM625 SNCM630 SNCM815	- - - - - - - - -	SNCM415 SNCM420(H) SNCM431 SNCM439 SNCM447 SNCM616 SNCM625 SNCM630 SNCM815	- 4320(H) - 4340 - - - - -	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -	- 20XH2M(20XHM) - - - - - - -
	Chromium steel	SCr415(H)	-	SCr415(H)	-	-	17Cr3 17CrS3	-	15X 15XA
		SCr420(H)	20Cr4(H) 20CrS4	SCr420(H)	5120(H)	-	-	-	20X
		SCr430(H)	34Cr4 34CrS4	SCr430(H)	5130(H) 5132(H)	34Cr4 34CrS4	34Cr4 34CrS4	34Cr4 34CrS4	30X
		SCr435(H)	34Cr4 34CrS4 37Cr4 37CrS4	SCr435(H)	5135(H)	37Cr4 37CrS4	37Cr4 37CrS4	37Cr4 37CrS4	35X
		SCr440(H)	37Cr4 37CrS4 41Cr4 41CrS4	SCr440(H)	5140(H)	530M40 41Cr4 41CrS4	41Cr4 41CrS4	41Cr4 41CrS4	40X
		SCr445(H)		SCr445(H)					45X

Type		Korea	ISO	Japan	U.S.A	Great Britain	Germany	France	Russia
		KS	ISO	JIS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
Alloy steel	Chromium molybdenum steel	SCM415(H)	-	SCM415(H)	-	-	-	-	-
		SCM418(H)	18CrMo4 18CrMoS4	SCM418(H)	-	-	18CrMo4 18CrMoS4	-	20XM
		SCM420(H)	-	SCM420(H)	-	708M20(708H20)	-	-	20XM
		SCM430	-	SCM430	4130	-	-	-	30XM 30XMA
		SCM432	-	SCM432	-	-	-	-	-
		SCM435(H)	34CrMo4 34CrMoS4	SCM435(H)	(4135H) 4137(H)	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	35XM
		SCM440(H)	42CrMo4 42CrMoS4	SCM440(H)	4140(H) 4142(H)	708M70 709M40 42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	-
		SCM445(H)	-	SCM445(H)	4145(H) 4147(H)	-	-	-	-
	Manganese steel and Manganese chromium steel	SMn420(H)	22Mn6(H)	SMn420(H)	1522(H)	150M19	-	-	-
		SMn433(H)	-	SMn433(H)	1534	150M36	-	-	30Γ2 35Γ2
		SMn438(H)	36Mn6(H)	SMn438(H)	1541(H)	150M36			35Γ2 40Γ2
		SMn443(H)	42Mn6(H)	SMn443(H)	1541(H)	-	-	-	40Γ2 45Γ2
		SMnC420(H)	-	SMnC420(H)	-	-	-	-	-
		SMnC443(H)	-	SMnC443(H)	-	-	-	-	-
	Aluminum chromium molybdenum steel	SACM645	41CrAlMo74	SACM645	-	-	-	-	-

• The above Alloy steel can supplied by domestic manufacturing

Tool steel

Type	Korea	ISO	Japan	U.S.A	Great Britain	Germany	France	Russia
	KS	ISO	JIS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
High speed steel	SKH2	HS18-0-1	SKH2	T1				
	SKH3	-	SKH3	T4				
	SKH4	-	SKH4	T5				
	SKH10	-	SKH10	T15	BM 2	S6/5/2	Z 85 WDCV	
	SKH51	HS6-5-2	SKH51	M2				
	SKH52	HS6-6-2	SKH52	M3-1				
	SKH53	HS6-5-3	SKH53	M3-2				
	SKH54	HS6-5-4	SKH54	M4	BM 35	S6/5/2/5	6-5-2-5	
	SKH55	HS6-5-2-5	SKH55	M 35				
	SKH56	-	SKH56	M36				
	SKH57	HS10-4-3-10	SKH57	-		S2/9/2		
	SKH58	HS2-9-2	SKH58	M7				
	SKH59	HS2-9-1-8	SKH59	M42				
Alloy tool steel	STS11	-	SKS11	F2				
	STS2	-	SKS2	-				
	STS21	-	SKS21	-				
	STS5	-	SKS5	-				
	STS51	-	SKS51	L6				
	STS7	-	SKS7	-				
	STS8	-	SKS8	-				
	STS4	-	SKS4	-				
	STS41	-	SKS41	-				
	STS43	105V	SKS43	W2-9 1/				
	STS44	-	SKS44	W2-8 1-2				
	STS3	-	SKS3	-		105WCr6	105WC13	
	STS31	105WCr1	SKS31	-				
	STS93	-	SKS93	-				
	STS94	-	SKS94	-				
	STS95	-	SKS95	-	BD3	X210Cr12	Z200C12	
	STD1	210Cr12	SKD1	D3				
	STD11	-	SKD11	D2	BA2	X100CrMoV5 1	Z100CDV5	
	STD12	100CrMoV5	SKD12	A2				
	STD4	-	SKD4	-	BH21	X30WCrV9 3	Z30WCV9	
	STD5	X30WCrV9-3	SKD5	H21				
	STD6	X37CrMoV5-1	SKD6	H11	BH13	X40CrMoV5 1	Z40CDV5	
	STD61	X40CrMoV5-1	SKD61	H13				
	STD62	X35CrWMoV5	SKD62	H12				
	STD7	32CrMoV12-28	SKD7	H10				
	STD8	-	SKD8	H19				
	STF3	-	SKT3	-		55NiCrMoV6	55NCDV7	
	STF4	55NiCrMoV7	SKT4	L6				

• The above Alloy steel can supplied by domestic manufacturing

Tool steel

Type	Korea	ISO	Japan	U.S.A	Great Britain	Germany	France	Russia
	KS	ISO	JIS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
Free cutting carbon steel	SUM11	-	SUM11	1110				
	SUM12	-	SUM12	1109				
	SUM21	9S20	SUM21	1212				
	SUM22	11SMn28	SUM22	1213	230M07	9SMn28	S250	
	SUM22L	11SMnPb28	SUM22L	12L13		9SMnPb28	S250Pb	
	SUM23	-	SUM23	1215	240M07	9SMn36	S 300	
	SUM23L	-	SUM23L	-				
	SUM24L	11SMnPb28	SUM24L	12L14		9SMnPb36	S300Pb	
	SUM25	12SMn35	SUM25	-				
	SUM31	-	SUM31	1117				
	SUM31L	-	SUM31L	-				
	SUM32	-	SUM32	-				
	SUM41	-	SUM41	1137				
	SUM42	-	SUM42	1141				
	SUM43	44SMn28	SUM43	1144				
High carbon chromiom	STB1	-	SUJ1	-				
	STB2	B1	SUJ2	52100	534A99	100Cr6	100Cr6	
	STB3	B2	SUJ3	ASTM A 485 Grade 1				
	STB4	-	SUJ4	-				
	STB5	-	SUJ5	-				

• The above Alloy steel can supplied by domestic manufacturing

Stainless steel

Type		Korea	ISO	Japan	U.S.A		Great Britain	Germany	France	Russia
		KS	ISO	JIS	UNS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
Stainless steel	Austenitic	STS201	X12CrMnNiN17-7-5	SUS201	S20100	201	284S16	X12CrNi17-7	Z12CMN17-07Az	12X17•9AH4
		STS202	X12CrMnNiN18-9-5	SUS202	S20200	202	301S21	X2CrNiN18-7		07X16H6
		STS301	X10CrNi18-8	SUS301	S30100	301		X12CrNi17-7	Z11CN17-08	
		STS301L	X2CrNiN18-7	SUS301L						
		STS301J1		SUS301J1			302S25			12X18H9
		STS302		SUS302	S30200	302		X10CrNiS18-9	Z12CN18-09	
		STS302B	X12CrNiSi18-9-3	SUS302B	S30215	302B	303S21			
		STS303	X10CrNiS18-9	SUS303	S30300	303	303S41		Z8CNF18-09	12X18H10E
		STS303Se		SUS303Se	S30323	303Se		X5CrNi18-10		
		STS303Cu		SUS303Cu			304S31			08X18H10
		STS304	X5CrNi18-9 X2CrNi18-9	SUS304	S30400	304	304S11	X2CrNi19-11	Z7CN18-09	03X18H11
		STS304L	X2CrNi19-11	SUS304L	S30403	304L		X2CrNiN18-10	Z3CN19-11	
		STS304N1	X5CrNiN18-8	SUS304N1	S30451	304N			Z6CN19-09Az	
		STS304LN	X2CrNiN18-8	SUS304LN	S30453	304LN		X5CrNi18-12	Z3CN18-10Az	
		STS304J1		SUS304J1			305S19			06X18H11
		STS305	X6CrNi18-12	SUS305	S30500	305			Z8CN18-12	
		STS309S		SUS309S	S30908	309S	310S31	X5CrNiMo27-12-2	Z10CN24-13	10X23H18
		STS310S	X6CrNi25-20	SUS310S	S31008	310S	316S31	X5CrNiMo27-13-3	Z8CN25-20	
		STS316	X5CrNiMo17-12-2 X3CrNiMo17-12-3	SUS316	S31600	316	316S11	X2CrNiMo17-13-2 X2CrNiMo17-14-3	Z7CND17-12-02 Z6CND18-12-03	03X17H14M3
		STS316L	X2CrNiMo17-12-2 X2CrNiMo17-12-3 X2CrNiMo18-14-3	SUS316L	S31603	316L			Z3CND17-12-02 Z3CND17-12-03	
		STS316N		SUS316N	S31651	316N	317S16	X6CrNiTi18-10		
		STS317		SUS317	S31700	317	321S31	X6CrNiNb18-10		08X18H10T
		STS321	X6CrNiTi18-10	SUS321	S32100	321	347S31		Z6CNT18-10	08X18H12
		STS347	X6CrNiNb18-10	SUS347	S34700	347		X6CrAl13	Z6CNNb18-10	
		STS384	X3NiCr18-16	SUS384	S38400	384	405S17		Z6CN18-16	
	Ferritic	STS405	X6CrAl13	SUS405	S40500	405			Z8CA12	
		STS410L		SUS410L				X6Cr17	Z3C14	
		STS429		SUS429	S42900	429	430S17	X7CrS18		12X17
		STS430	X6Cr17	SUS430	S43000	430		X6CrMo17-1	Z8C17	
		STS430F	X7CrS17	SUS430F	S43020	430F	434S17		Z8CF17	
		STS434	X6CrMo17-1	SUS434	S43400	434			Z8CD17-01	
		STS444	X2CrMoTi18-2	SUS444	S44400	444			Z3CDT18-02	
		STSXM27		SUSXM27	S44627			X10Cr13	Z1CD26-01	
	Martensitic	STS403		SUS403	S40300	403	410S21			
		STS410	X12Cr13	SUS410	S41000	410	416S21	X20Cr13	Z13C13	
		STS416	X12CrS13	SUS416	S41600	416	420S29	X20CrNi17-2	Z11CF13	20X13
		STS420J1	X20Cr13	SUS420J1	S42000	420	431S29		Z20C13	20X17H2
		STS431	X19CrNi16-2	SUS431	S43100	431			Z15CN16-02	
		STS440A	X70CrMo15	SUS440A	S44002	440A		X7CrNiAl17-7	Z70C15	
	Precipitation hardening type	STS630	X5CrNiCuNb16-4	SUS630	S17400	S17400			Z6CNU17-04	09X17H7IO
		STS631	X7CrNiAl17-7	SUS631	S17700	S17700			Z9CNA17-07	
		STS631J1		SUS631J1						

• The above Alloy steel can supplied by domestic manufacturing

Casting or forging steel

Type		Korea	ISO	Japan	U.S.A	Great Britain	Germany	France	Russia
		KS	ISO	JIS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
Casting Iron	Grey iron casting	GC100 GC150 GC200 GC250 GC300 GC350	100,150, 200, 250, 300, 350	FC100 FC150 FC200 FC250 FC300 FC350	No 20 B No 25 B No 30 B No 35 B No 45 B No 50 B No 55 B	 Grade 150 Grade 220 Grade 260 Grade 300 Grade 350 Grade 400	GG 10 GG 15 GG 20 GG 25 GG 30 GG 35 GG 40	Ft 10 D Ft 15 D Ft 20 D Ft 25 D Ft 30 D Ft 35 D Ft 40 D	
	Spheroidal graphite iron casting	GCD400-15, GCD400-18 GCD450-10, GCD500-7 GCD600-3 GCD700-2	400-15, 400-18 450-10, 500-7 600-3 700-2	FCD400 FCD500 FCD600 FCD700	60-40-18 65-45-12 80-55-06 100-70-03	SNG 420/12 SNG 370/17 SNG 500/7 SNG 600/3 SNG 700/2	GGG 40 GGG 40.3 GGG 50 GGG 60 GGG 70	FCS 400-12 FGS 370-17 FGS 500-7 FGS 600-3 FGS 700-2	
	Austempered Spheroidal graphite iron casting	FCAD	-	FCAD	-	EN-GJS-	EN-GJS-	EN-GJS-	
	Austenitic iron casting	FCA- FCDA-	L-, S-	FCA- FCDA-	Type 1, 2, Type D-2, D-3A Class 1, 2	F1, F2, S2W, S5S	GGL-, GGG-	L-, S-	

Non-ferrous alloy

Type		Korea	ISO	Japan	U.S.A	Great Britain	Germany	France	Russia
		KS	ISO	JIS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
Aluminum alloy	Aluminum alloy ingots for casting	AC1B	Al-Cu4MgTi	AC1B	204.0	-	-	A-U5GT	
		AC2A	-	AC2A	-	-	-	-	
		AC2B	-	AC2B	319.0	-	-	-	
		AC3A	-	AC3A	-	LM-6	-	-	
		AC4A	-	AC4A	-	-	G(GK)-AlSi9Cu3	-	
		AC4B	-	AC4B	-	-	-	-	
		AC4C	Al-Si7Mg(Fe)	AC4C	356.0	LM-25	G(GK)-AlSi7MG	A-S7G	
		AC4CH	Al-Si7Mg	AC4CH	A356.0	-	-	-	
		AC4D	Al-Si5Cu1Mg	AC4D	355.0	LM-16	-	-	
		AC5A	Al-Cu4Ni2Mg2	AC5A	242.0	-	G(GK)-AlMg5	A-U4NT	
		AC7A	-	AC7A	514.0	LM-5	-	-	
		AC8A	-	AC8A	-	LM-13	-	A-S12UNG	
		AC8B	-	AC8B	-	LM-26	-	A-S10UG	
		AC8C	-	AC8C	-	-	-	A-S10UG	
		AC9A	-	AC9A	-	LM-29	-	-	
		AC9B	-	AC9B	-	-	GD-AlSi12 (Cu)	A-S18UNG	
	Aluminum alloy die casting	ALDC1	Al-Si12CuFe	ADC1	A413.0	LM20	GD-AlSi10Mg	A-S13	
		ALDC2	-	ADC3	A360.0	-	GD-AlMg9	A-S9G	
		ALDC3	-	ADC5	518.0	-	-	A-G6	
		ALDC4	-	ADC6	-	-	GD-AlSi9Cu3	A-G3T	
		ALDC7	Al-Si8Cu3Fe	ADC10	A380.0	-	GD-AlSi9Cu3	-	
		ALDC7Z	Al-Si8Cu3Fe	ADC10Z	A380.0	LM24	-	-	
		ALDC8	-	ADC12	383.0	LM2	-	-	
		ALDC8Z	-	ADC12Z	383.0	LM2	-	-	
		ALDC9	-	ADC14	B390.0	LM30	EN AW-5052	-	
	Aluminum alloy extruded shapes	A5052S	-	A5052S	5052	EN AW-5052	EN AW-5454	EN AW-5052	
		A5454S	-	A5454S	5454	EN AW-5454	EN AW-5083	EN AW-5454	
		A5083S	AlMg4.5Mn0.7	A5083S	5083	EN AW-5083	EN AW-5086	EN AW-5083	
		A5086S	-	A5086S	5086	EN AW-5086	EN AW-6061	EN AW-5086	
		A6061S	AlMg1SiCu	A6061S	6061	EN AW-6061	EN AW-6063	EN AW-6061	
		A6063S	AlMg0.7Si	A6063S	6063	EN AW-6063	EN AW-7003	EN AW-6063	
		A7003S	-	A7003S	-	EN AW-7003	-	EN AW-7003	
		A7N01S	-	A7N01S	-	-	EN AW-7075	-	
		A7075S	AlZn5.5MgCu	A7075S	7075	EN AW-7075		EN AW-7075	

Heat resistant steel

Type		Korea	ISO	Japan	U.S.A		Great Britain	Germany	France	Russia
		KS	ISO	JIS	UNS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	GOCT
Heat resistant steel	Austenitic	STR31		SUH31			331S42		Z35CNWS14-14	
		STR35		SUH35			349S52	X53CrMnNi21-9	Z52CMN21-09-Az	
		STR36		SUH36			349S54		Z55CMN21-09-Az	
		STR37		SUH37	S63008		381S34			
		STR38		SUH38	S63017					
		STR309		SUH309			309S24	CrNi2520	Z15CN24-13	
		STR310		SUH310	S30900		310S24		Z15CN25-20	
		STR330		SUH330	S31000	309			Z12NCS35-16	
		STR660		SUH660	N08330	310			Z6NCTV25-20	
		STR661		SUH661	S66286	N08330		CrAl1205		
	Ferritic	STR21		SUH21	R30155			X6CrTi12		
		STR409	X6CrTi12	SUH409			409S19		Z6CT12	
		STR409L	X2CrTi12	SUH409L	S40900				Z3CT12	
		STR446		SUH446		409		X45CrSi9-3	Z12C25	
	Martensitic	STR1		SUH1	S44600		401S45		Z45CS9	
		STR3		SUH3	S65007	446			Z40CSD10	
		STR4		SUH4			443S65		Z80CSN20-02	
		STR11		SUH11						
		STR600		SUH600						
		STR616		SUH616	S42200					

• The above Heat resistant steel can supplied by domestic manufacturing

Steel, Non-Ferrous Metal Symbol List

Comparison of workpiece material standards

Group		Standard term	Code
Structural Steel		Rolled Steel for Welded Structure	SWS
		Rerolled Steel	SBR
		Rolled Steel for General Structure	SB
		Light Gauge Steel for General Structure	SBC
		Hot- rolled Steel Plate, Sheet/ Strip for Automobile Structural Use	SAPH
Steel Plate		Cold-rolled Steel Sheet/Strip	SBC
		Hot-rolled Soft Steel Sheet/Strip	SHP
Steel Pipe		Carbon Steel Pipe for Ordinary Piping	SPP
		Carbon Steel Pipe for Boiler and Heat Exchanger	STH
		Seamless Steel Pipe for High Pressure Gas Cylinder	STHG
		Carbon Steel Pipe for General Structural Use	SPS
		Carbon Steel Pipe for Machine Structural Use	STST
		Alloy Steel Pipe for Structural Use	STA
		Stainless Steel Pipe for Machine and Structural Use	STS-TK
		Carbon Steel Square Pipe for General Structural Use	SPSR
		Alloy Steel Pipe	SPA
		Carbon Steel Pipe for Pressure Service	SPPS
		Carbon Steel Pipe for High Temperature Service	SPSR
		Carbon Steel Pipe for High Pressure Service	SPPH
		Stainless Steel Pipe	STSxT
Iron and Steel		Carbon Steel for Machine Structural Use	SMxxC, SMxxCK
		Aluminum 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	STC
		Hollow Drill Steel	SKC
		Alloy Tool Steel	STS, STD, STF
		High Speed Tool Steel	SKH
	Stainless steel	Stainless Steel Bar	STS
	Heat resisting steel	Heat Resisting Steel	STR
		Heat Resisting Steel Bar	STR
		Heat Resisting Steel Sheet	STR
	Free cutting carbon steel		SUM
	Special steel		STB
	Spring steel		SPS

Group	Standard term	Code
Forged steel	Carbon Steel Forging	SF
	Chromium Molybdenum Steel Forging	SFCM
	Nickel Chromium Molybdenum Steel Forging	SFNCM
Cast iron	Gray Cast iron	GC
	Spheroidal Graphite Cast iron	GCD
	Blackheart Malleable Cast iron	BMC
	Whiteheat Malleable Cast iron	WMC
	Pearlitic Malleable Cast iron	PMC
Cast steel	Carbon Cast Steel	SC
	High Tensile Strength Carbon Cast Steel & Low Alloy Cast Steel	HSC
	Stainless Cast Steel	SSC
	Heat Resisting Cast Steel	HRSC
	High Manganese Cast Steel	HMnSC
	Cast Steel for High Temperature and High Pressure Service	SCPH
Casting	Brass Casting	BsC
	High Strength Brass Casting	HBsC
	Bronze Casting	BrC
	Phosphoric Bronze Casting	PCB
	Aluminum Bronze Casting	AlBC
	Aluminum Alloy Casting	ACxA
	Magnesium Alloy Casting	MgC
	Zinc Alloy Die Casting	ZnDC
	Aluminum Alloy Die Casting	Aℓ DC
	Magnesium Alloy Die Casting	MgDC
	White Metal	WM
	Aluminum Alloy Casting for Bearing	AM
	Brass Alloy Casting for Bearing	KM

SI Unit Conversion Table

Major SI unit conversion table

Force

N	kgf	dyn
1	1.01972×10^{-1}	1×10^{5}
9.80665	1	9.80665×10^{5}
1×10^{-5}	1.01972×10^{-6}	1

Stress

Pa or N/m²	MPa or N/mm²	kgf/mm²	kgf/cm²	kgf/m²
1	1×10^{-6}	1.01972×10^{-7}	1.01972×10^{-5}	1.01972×10^{-1}
1×10^{6}	1	1.01972×10^{-1}	1.01972×10	1.01972×10^{5}
9.80665×10^{6}	9.80665	1	1×10^{2}	1×10^{6}
9.80665×10^{4}	9.80665×10^{-2}	1×10^{-2}	1	1×10^{4}
9.80665	9.80665×10^{-6}	1×10^{-6}	1×10^{-4}	1

Pressure

Pa	kPa	MPa	bar	kgf/cm²
1	1×10^{-3}	1×10^{-6}	1×10^{-5}	1.01972×10^{-5}
1×10^{3}	1	1×10^{-3}	1×10^{-2}	1.01972×10^{-2}
1×10^{6}	1×10^{3}	1	1×10	1.01972×10
1×10^{5}	1×10^{2}	1×10^{-1}	1	1.01972
9.80665×10^{4}	9.80665×10	9.80665×10^{-2}	9.80665×10^{-1}	1

Work, Energy, Calorie

J	kW·h	kgf·m	kcal
1	2.77778×10^{-7}	1.01972×10^{-1}	2.38889×10^{-4}
3.60000×10^{6}	1	3.67098×10^{5}	8.60000×10^{2}
9.80665	2.72407×10^{-6}	1	2.34270×10^{-3}
4.18605×10^{3}	1.16279×10^{-3}	4.26858×10^{2}	1

Power

W	kW	kgf·m/s	PS	kcal/h
1	1×10^{-3}	1.01972×10^{-1}	1.35962×10^{-3}	0.860
1×10^{3}	1	1.01972×10^{2}	1.359 62	8.60000×10^{2}
9.81 65	9.80665×10^{-3}	1	1.33333×10^{-2}	8.433 71
7.355×10^{2}	7.355×10^{-1}	7.5×10	1	6.32529×10^{2}
1.16279	1.16279×10^{-3}	1.18572×10^{-1}	1.58095×10^{-3}	1

Specific heat

J/(kg·K)	kcal/(kg·℃) cal/(g·℃)
1	2.38889×10^{-4}
4.18605×10^{3}	1

Thermal conductivity

W/(m·k)	kcal/(h·m·℃)
1	8.6000×10^{-1}
1.16279	1

Revolution per minute

min⁻¹	s⁻¹	r.p.m.
1	0.0167	1
60	1	60

Hardness Calculating Table

Workpiece hardness calculating table

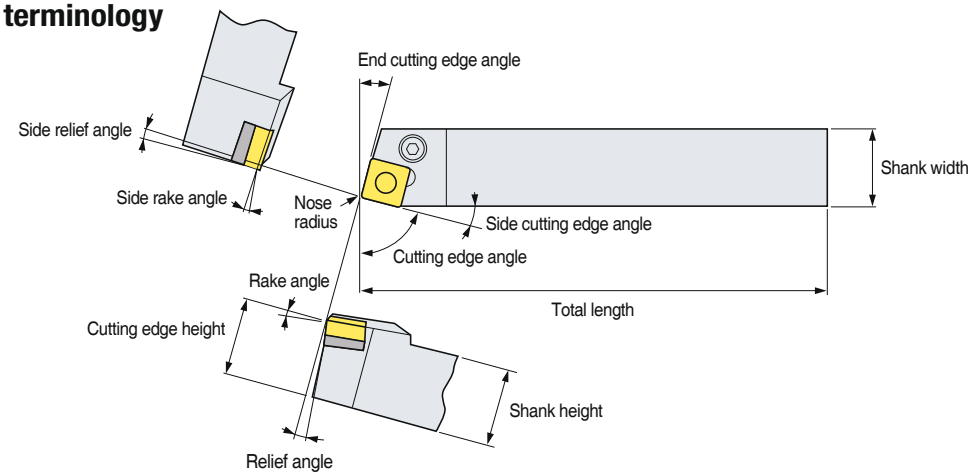
Vickers 50kgf HV	Brinell 3000kgf HB		Rockwell				Shore	Tensile strength (approximate value)
	Standard ball 10㎜	Cemented carbide ball 10㎜	A scale 60kgf Diamond particle HRA	B scale 100kgf 1/16in ball HRB	C scale 150kgf Diamond particle HRC	D scale 100kgf Diamond particle HRD	HS	MPa (1)
940	-	-	85.6	-	68.0	76.9	97	
920	-	-	85.3	-	67.5	76.5	96	
900	-	-	85.0	-	67.0	76.1	95	
880	-	(767)	84.7	-	66.4	75.7	93	
860	-	(757)	84.4	-	65.9	75.3	92	
840	-	(745)	84.1	-	65.3	74.8	91	
820	-	(733)	83.8	-	64.7	74.3	90	
800	-	(722)	83.4	-	64.0	74.8	88	
780	-	(710)	83.0	-	63.3	73.3	87	
760	-	(698)	82.6	-	62.5	72.6	86	
740	-	(684)	82.2	-	61.8	72.1	84	
720	-	(670)	81.8	-	61.0	71.5	83	
700	-	(656)	81.3	-	60.1	70.8	81	
690	-	(647)	81.1	-	59.7	70.5	-	
680	-	(638)	80.8	-	59.2	70.1	80	
670	-	630	80.6	-	58.8	69.8	-	
660	-	620	80.3	-	58.3	69.4	79	
650	-	611	80.0	-	57.8	69.0	-	
640	-	601	79.8	-	57.3	68.7	77	
630	-	591	79.5	-	56.8	68.3	-	
620	-	582	79.2	-	56.3	67.9	75	
610	-	573	78.9	-	55.7	67.5	-	
600	-	564	78.6	-	55.2	67.0	74	
590	-	554	78.4	-	54.7	66.7	-	2055
580	-	545	78.0	-	54.1	66.2	72	2020
570	-	535	77.8	-	53.6	65.8	-	1985
560	-	525	77.4	-	53.0	65.4	71	1950
550	(505)	517	77.0	-	52.3	64.8	-	1905
540	(496)	507	76.7	-	51.7	64.4	69	1860
530	(488)	497	76.4	-	51.1	63.9	-	1825
520	(480)	488	76.1	-	50.5	63.5	67	1795
510	(473)	479	75.7	-	49.8	62.9	-	1750
500	(465)	471	75.3	-	49.1	62.2	66	1705
490	(456)	460	74.9	-	48.4	61.6	-	1660
480	488	452	74.5	-	47.7	61.3	64	1620
470	441	442	74.1	-	46.9	60.7	-	1570
460	433	433	73.6	-	46.1	60.1	62	1530
450	425	425	73.3	-	45.3	59.4	-	1495
440	415	415	72.8	-	44.5	58.8	59	1460
430	405	405	72.3	-	43.6	58.2	-	1410
420	397	397	71.8	-	42.7	57.5	57	1370
410	388	388	71.4	-	41.8	56.8	-	1330
100	379	379	70.8	-	40.8	56.0	55	1290
390	369	369	70.3	-	39.8	55.2	-	1240
380	360	360	69.8	(100.0)	38.8	54.4	52	1205
370	350	350	69.2	-	39.9	53.6	-	1170
360	341	341	68.7	(109.0)	36.6	52.8	50	1130
350	331	331	68.1	-	35.5	51.9	-	1095
340	322	322	67.6	(108.0)	34.4	51.1	47	1070
330	313	313	67.0	-	33.3	50.2	-	1035

Vickers 50kgf HV	Brinell 3000kgf HB		Rockwell				Shore	Tensile strength (approximate value)
	Standard ball 10㎜	Cemented carbide ball 10㎜	A scale 60kgf Diamond particle HRA	B scale 100kgf 1/16in ball HRB	C scale 150kgf Diamond particle HRC	D scale 100kgf Diamond particle HRD	HS	MPa (1)
320	303	303	66.4	(107.0)	32.2	49.4	45	1005
310	294	294	65.8	-	31.0	48.4	-	980
300	284	284	65.2	(105.5)	29.8	47.5	42	950
295	280	280	64.8	-	29.2	47.1	-	935
290	275	275	64.5	(104.5)	28.5	46.5	41	915
285	270	270	64.2	-	27.8	46.0	-	905
280	265	265	63.8	(103.5)	27.1	45.3	40	890
275	261	261	63.5	-	26.4	44.9	-	875
270	256	256	63.1	(102.0)	25.6	44.3	38	855
265	252	252	62.7	-	24.8	43.7	-	840
260	247	247	62.4	(101.0)	24.0	43.1	37	825
255	243	243	62.0	-	23.1	42.2	-	805
250	238	238	61.6	99.5	22.2	41.7	36	795
245	233	233	61.2	-	21.3	41.1	-	780
240	228	228	60.7	98.1	20.3	40.3	34	765
230	219	219	-	96.7	(18.0)	-	33	730
220	209	209	-	95.0	(15.7)	-	32	695
210	200	200	-	93.4	(13.4)	-	30	670
200	190	190	-	91.5	(11.0)	-	29	635
190	181	181	-	89.5	(8.5)	-	28	605
180	171	171	-	87.1	(6.0)	-	26	580
170	162	162	-	85.0	(3.0)	-	25	545
160	152	152	-	81.7	(0.0)	-	24	515
150	143	143	-	78.7	-	-	22	490
140	133	133	-	75.0	-	-	21	455
130	124	124	-	71.2	-	-	20	425
120	114	114	-	66.7	-	-	-	390
110	105	105	-	62.3	-	-	-	-
100	95	95	-	56.2	-	-	-	-
95	90	90	-	52.0	-	-	-	-
90	86	86	-	48.0	-	-	-	-
85	81	81	-	41.0	-	-	-	-

Note) 1. 1MPa = 1N/㎟
2. The number In the blank is not generally used ranges

Technical Information for Turning

Insert shape and terminology

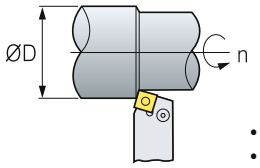


Relating angles between tool and workpiece

Cutting edge inclination	Terminology	Function	Effect
Rake angle	Side rake angle Rake angle	• Cutting force, Cutting heat, The effects of chip control on tool life	• (+): Excellent machine-ability(reducing cutting force, weakening cutting edge strength) • (+): When machining excellent machine-ability or thin workpiece • (-): When strong cutting edge is needed at interrupted condition or mill scale
Relief angle	Relief angle Side relief angle	• Only cutting edge contact with cutting face	• (-): Cutting edge is strong but has short tool life to make bad influence on flank wear
Cutting edge angle	Cutting edge angle	• Affects chip control and cutting force direction	• (+): Improved chip control because chip thickness is big
	Side cutting edge angle	• Affects chip control and cutting force direction	• (+): Strong cutting edge due to distributed cutting force but chip control is bad by thin chip thickness • (-): Improved chip performance
	End cutting edge angle	• Prevent friction between cutting edge and cutting face	• (-): Cutting edge is strong but has short tool life to make bad influence on flank wear

Calculation formulas for machining

Cutting speed



$$vc = \frac{\pi \times D \times n}{1000} \text{ (m/min)}$$

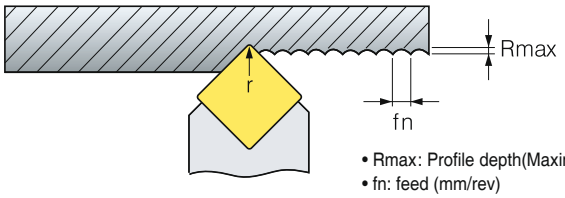
- vc: Cutting speed (m/min)
- D: Diameter (mm)
- n: Revolution per minute (min^{-1})
- π: Circular constant (3.14)

Feed

$$fn = \frac{vf}{n} \text{ (mm/rev)}$$

- fn: Feed per revolution (mm/rev)
- vf: Table feed (mm/min)
- n: Revolution per minute (min^{-1})

Surface finish



- Rmax: Profile depth(Maximum height roughness) (μ)
- fn: feed (mm/rev)
- r : nose radius

- Theoretical surface roughness

$$Rmax = \frac{fn^2}{8r} 1000(\mu m)$$

- Practical surface roughness

Steel: Rmax × (1.5~3)
Cast iron: Rmax × (3~5)

Power requirement

$$P_{kw} = \frac{Q \times kc}{60 \times 102 \times \eta} \qquad P_{HP} = \frac{P_{kw}}{0.75} \qquad Q = \frac{vc \times fn \times ap}{1000}$$

- P_{KW}: Power requirement [kW]
- P_{HP}: Power requirement (horse power) [HP]
- vc: Cutting speed [m/min]
- ap: Depth of cut [mm]
- fn: Feed per revolution [mm/rev]
- kc: Specific cutting resistance [kg/mm²]
- η: Machine efficiency rate (0.7~0.8)

Rough Kc	
Mild 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

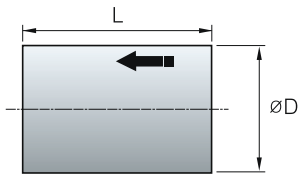
Material removal rate

$$Q\ (cm^3/min) = vc \times ap \times fn$$

- Q: Material removal rate [cm^3/min]
- ap: Depth of cut [mm]
- vc: Cutting speed [m/min]
- fn: Feed per revolution [mm/rev]

• Machining time

External face machining 1



Constant revolution per minute

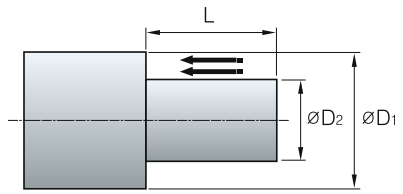
$$T = \frac{60 \times L}{fn \times n}$$

Constant cutting speed

$$T = \frac{60 \times \pi \times L \times D}{1000 \times fn \times vc}$$

- T: Machining time [sec]
- L: Cutting length [mm]
- fn: Feed per revolution [mm/rev]
- n: Revolution per minute [min^{-1}]
- D: Diameter of workpiece [mm]
- vc: Cutting speed [m/min]

External face machining 2



Constant revolution per minute

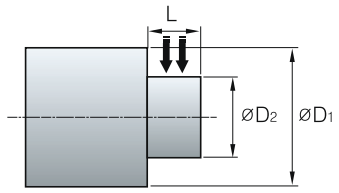
$$T = \frac{60 \times L}{fn \times n} \times N$$

Constant cutting speed

$$T = \frac{60 \times \pi \times L \times (D_1 + D_2)}{2 \times 1000 \times fn \times vc} \times N$$

- T: Machining time [sec]
- L: Cutting length [mm]
- fn: Feed per revolution [mm/rev]
- n: Revolution per minute [min^{-1}]
- D1:Maximum diameter of workpiece [mm]
- D2:Minimum diameter of workpiece [mm]
- vc: Cutting speed [m/min]
- N: The number of pass = (D1-D2)/d/2

Facing



Constant revolution per minute

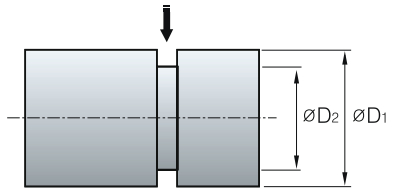
$$T = \frac{60 \times (D_1 - D_2)}{2 \times fn \times n} \times N$$

Constant cutting speed

$$T_1 = \frac{60 \times \pi \times (D_1 + D_2) \times (D_1 - D_2)}{4000 \times fn \times vc} \times N$$

- T: Machining time [sec]
- T1: Machining time before the maximum rpm[sec]
- L: Width of machining [mm]
- fn: Feed per revolution [mm/rev]
- n: Revolution per minute [min^{-1}]
- D1:Maximum diameter of workpiece [mm]
- D2:Minimum diameter of workpiece [mm]
- vc: Cutting speed [m/min]
- N: The number of pass = (D1-D2)/d/2

Grooving



Constant revolution per minute

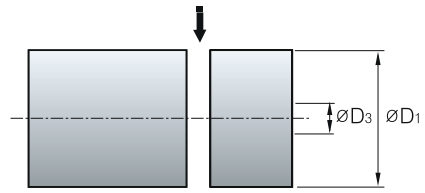
$$T = \frac{60 \times (D_1 - D_2)}{2 \times fn \times n}$$

Constant cutting speed

$$T_1 = \frac{60 \times \pi \times (D_1 + D_2) \times (D_1 - D_2)}{4000 \times fn \times vc}$$

- T: Machining time [sec]
- T1: Machining time before the maximum rpm[sec]
- L: Width of machining [mm]
- fn: Feed per revolution [mm/rev]
- n: Revolution per minute [min^{-1}]
- D1:Maximum diameter of workpiece [mm]
- D2:Minimum diameter of workpiece [mm]
- vc: Cutting speed [m/min]

Parting



Constant revolution per minute

$$T = \frac{60 \times D_1}{2 \times fn \times n}$$

Constant cutting speed

$$T_1 = \frac{60 \times \pi \times (D_1 + D_3)\,(D_1 - D_3)}{4000 \times fn \times vc}$$

$$T_3 = T_1 + \frac{60 \times D_3}{2 \times fn \times n_{max}}$$

- T: Machining time [sec]
- T1: Machining time before the maximum rpm[sec]
- T3: Machining time till maximum RPM[sec]
- fn: Feed per revolution [mm/rev]
- n: Revolution per minute [min^{-1}]
- nmax: Maximum revolution per minute [min^{-1}]
- D1: Maximum diameter of workpiece [mm]
- D3: Maximum diameter at maximum RPM [mm]
- vc: Cutting speed [m/min]

The effects of cutting conditions

• The most desirable machining means short machining time, long tool life and good precision
This is the reason that proper cutting condition for each tools should be selected according to material's properties, hardness, shapes, the efficiency of machine

The effects of cutting speed

• When the cutting speed increases up to 20% in an application, the tool life respectively decreases down 50%.
If increase the cutting speed by 50%, the tool life is reduced by 1/5.
On the other hand if cutting speed is too low (20-40m/min) Tool life shortens due to vibration

Feed

• The feed rate in turning means the progressed interval of a distance in a workpiece within 1 revolution
The feed rate in a milling application means the table feed divided by number of teeth of cutter (feed rate per tooth)

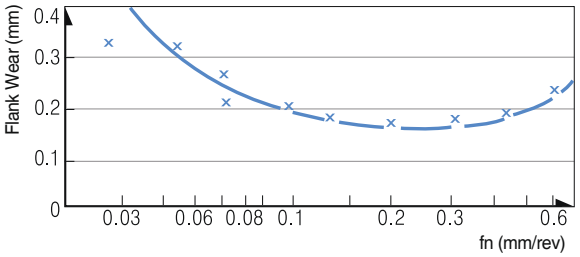
The effects of feed

• When the feed rate decreases the flank wear is increased. When the feed rate is too low, the tool life shortens radically

• When the feed rate increases, the flank wear increases due to high temperatures, however the feed rates effects tool life less than the cutting speed. And higher feed rates improve machining efficiency

(Relationship between feed and flank wear in steel turning)

- **Workpiece:** SNCN431
- **Grade:** ST20
- **Cutting speed:** 200 m/min
- **Depth of cut:** 1.0 mm
- **Cutting time:** 10 min

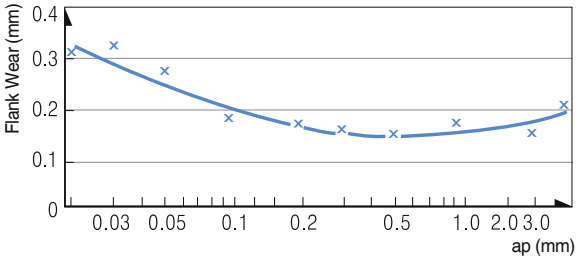


Depth of cut

• Determined by the required allowances in machining a material and the capacity the machine can tolerate
There are cutting limits according to the different shapes and sizes of the insert

(Relationship between depth of cut and flank wear in steel turning)

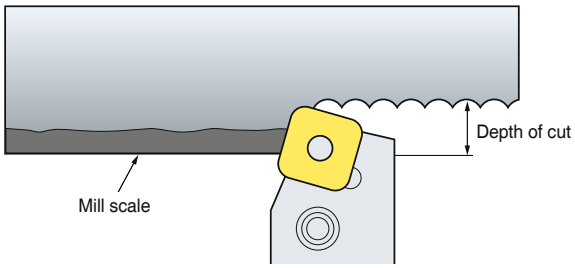
- **Workpiece:** SNCN431
- **Grade:** ST20
- **Cutting speed:** 200 m/min
- **Feed:** 0.2 mm/rev
- **Cutting time:** 10 min



The effect of a depth of cut

- Changing the depth of cut from 0.15 to 0.30 does not have a big influence on tool life
- When the depth of cut is small the workpiece is not cut but rather rubbed. In these cases, machine off the work hardened parts that decrease tool life
- When machining a cast skin or milling scale smaller depth of cuts usually cause chipping and abnormal wear because of hard impurities in the surface of the workpiece

(Surface parts including mill scale Roughing)



Relief angle

- Relief angle avoids the friction between workpiece and relief face and makes cutting edge move along workpiece easily

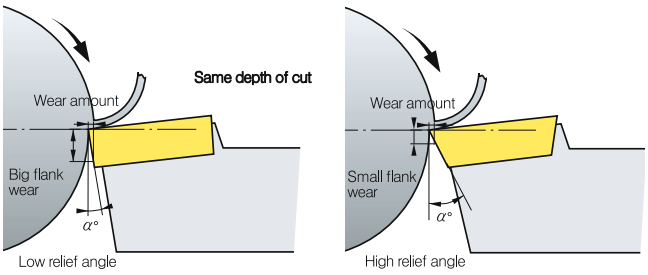
● Relationship between various relief angle and flank wear

Affects

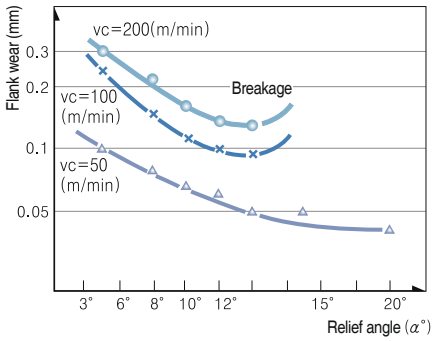
1. If relief angle is big Flank wear decreases
2. If relief angle is big Cutting edge strength weakens
3. If relief angle is small Chattering occurs

Selection system

1. Hard workpiece/When strong cutting edge is needed
   - Low relief angle
2. Soft workpiece/Workpiece turning to work hardening easily
   - High relief angle



- **Workpiece:** SNCM431 (HB)
- **Grade:** P20
- **Depth of cut:** 1 mm
- **Feed:** 0.32 mm/rev
- **Cutting time:** 20 min



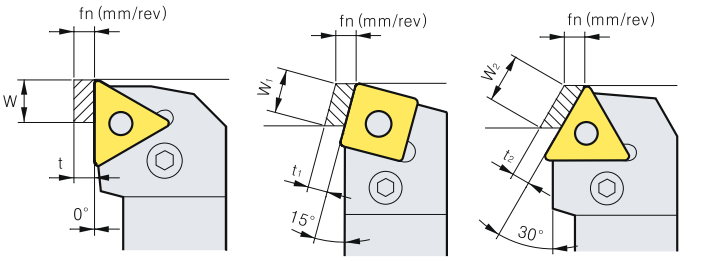
Side cutting edge angle

- Side cutting edge angle has big influence on chip flow and cutting force therefore proper side cutting edge angle is very important

● Side cutting edge angle and chip thickness

- As side cutting edge angle is getting bigger chips are getting thinner and wider (refer to left picture)
- At the same feed and depth of cut with approach angle 0˚ Chip thickness is the same as feed (t = fn) and chip width is equal to depth of cut (W=ap)

$t_1 = 0.97t$, $W_1 = 1.04W$
$t_2 = 0.87t$, $W_2 = 1.15W$



① Approach angle 0˚ ② Approach angle 15˚ ③ Approach angle 30˚

● Side cutting edge angle and 3 cutting forces

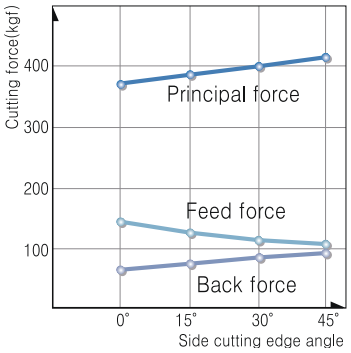
Affects

1. Big side cutting edge angle with the same feed makes chip attaching length longer and chip thickness thinner. So that cutting forces scatter to long cutting edge therefore tool life gets longer
2. Big side cutting edge angle for machining long bars can cause bending

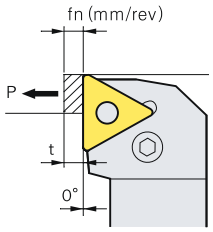
Selection system

1. Deep depth of cut finishing/Long thin workpiece/Low machine rigidity - Small side cutting edge angle
2. Hard and high calorific power workpiece/Roughing big workpiece/ High machine rigidity - Big side cutting edge angle

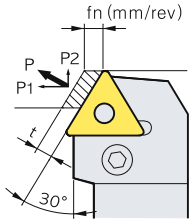
- **Workpiece :** SCM440 (HB250)
- **Grade:** TNGA220412
- **vc:** 100 m/min
- **ap:** 4 mm
- **fn:** 0.45 mm/rev



● Side cutting edge angle and cutting load



① "Force P is loaded."

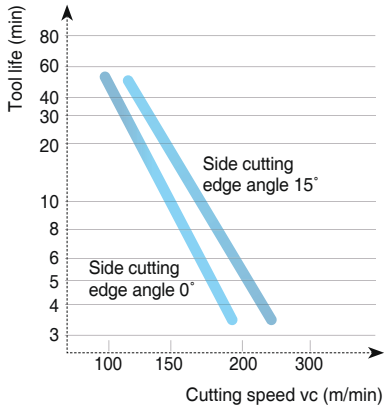


② "Force P is scattered to P1, P2."

As approach angle gets bigger Back force gets bigger and feed force gets smaller

● Side cutting edge angle and tool life

- **Workpiece:** SCM440
- **Grade:** P20
- **Depth of cut:** 3 mm
- **Feed:** 0.2 mm/rev



● Side cutting edge angle and cutting performance

Specification	Low ← Approach angle → High
Wear rate	High ← → Low
Workpiece	Easy to cut material ← → Difficult to cut material
Machining power	Small ← → Big
Chatter	Hard to occur ← → Easy to occur
How to machine	Finishing ← → Roughing
Workpiece rigidity	Long thin workpiece ← → Thick workpiece
Machine rigidity	In case of low rigidity ← → In case of high rigidity

End cutting edge angle

• It affects machined surface to prevent interference between surface of workpiece and insert

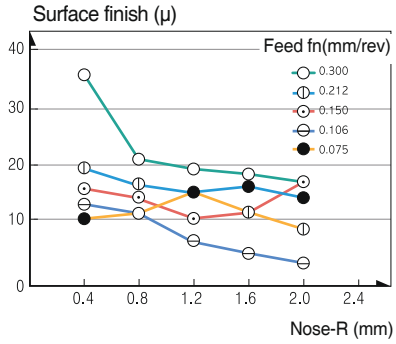
Affects

1. If end cutting edge angle reduces cutting edge get stronger but cutting heat generated by machining increases
2. Small end cutting edge angle can cause chattering due to the increases cutting force

Nose-R

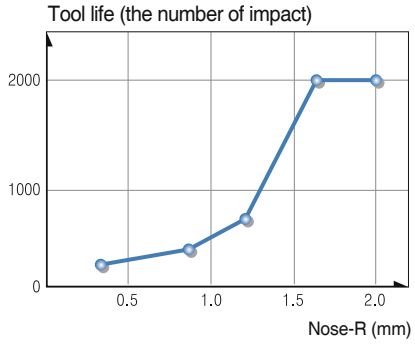
• Nose-R affects not only surface roughness but strength of cutting edge
• In general, It's desirable that Nose-R is 2~3 times bigger than feed

● Nose R and surface finish



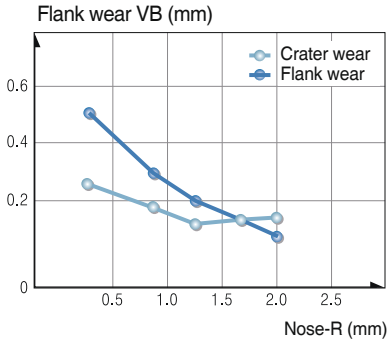
• **Workpiece:** SNCM439, HB200
• **Grade:** P20
• **vc:** 120 m/min
• **ap:** 0.5 mm

● Nose R and tool life



• **Workpiece:** SCM440, HB280
• **Grade:** P10
• **vc:** 100 m/min, **ap:** 0.5 mm
• **fn:** 0.3 mm/rev

● Nose R and wear of tool



• **Workpiece:** SNCM439, HB200
• **Grade:** P10
• **vc:** 140 m/min, **ap:** 2 mm
• **fn:** 0.2 mm/rev, **T:** 10 min

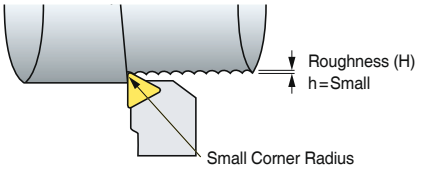
Nose-R

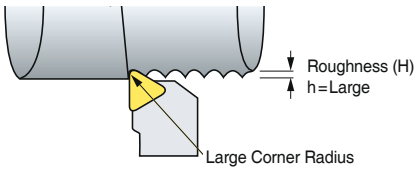
Affects

1. Big Nose-R improves surface finish
2. Big Nose-R improves cutting edge strength
3. Big Nose-R reduces flank wear and crater wear
4. Too big Nose-R causes chattering due to increased cutting force

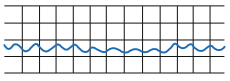
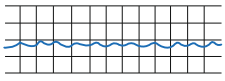
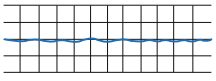
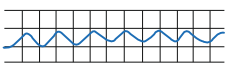
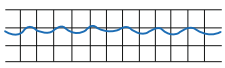
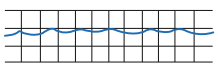
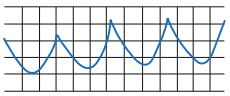
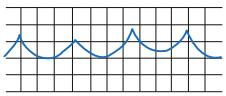
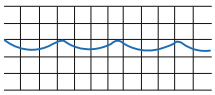
Selection system

1. For finishing with small depth of cut/long and thin workpiece/ When machine power is low - Small Nose-R
2. For applications that need strong cutting edge such as intermittent and machining mill scale/For roughing of big workpiece/When the machine power is strong enough - Big Nose-R





● Relationship between nose radius, feed and various surface roughness

fn (mm/rev) \ Nose R	0.4	0.8	1.2
0.15			
0.26			
0.46			

Cutting edge shape and the affects

● Rake angle (α)

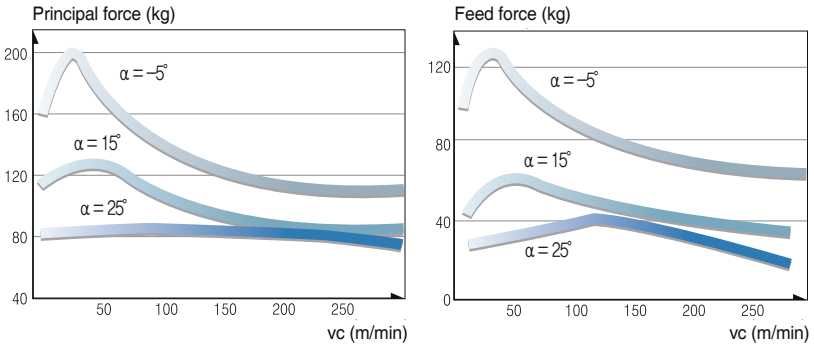
Rake angle has big influence on cutting force, chip flow and tool life

Affects

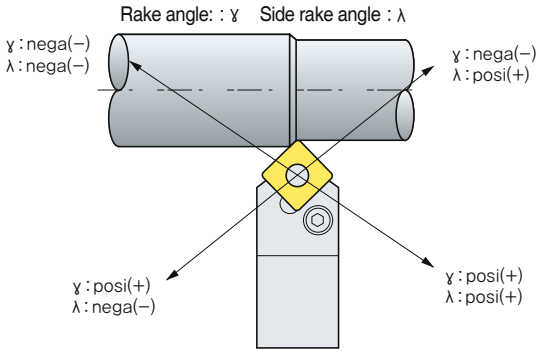
1. High rake angle results in good suface finish
2. As the rake angle increases by 1° Machining power decreases by 1%.
3. High rake angle weakens cutting edge

Selection system

1. For hard workpiece/For applications that need strong cutting edge such as interrupted and machining mill scale - Low rake angle
2. For soft workpiece/Easy to cut material/When the rigidity of machine power and workpiece is low - High rake angle

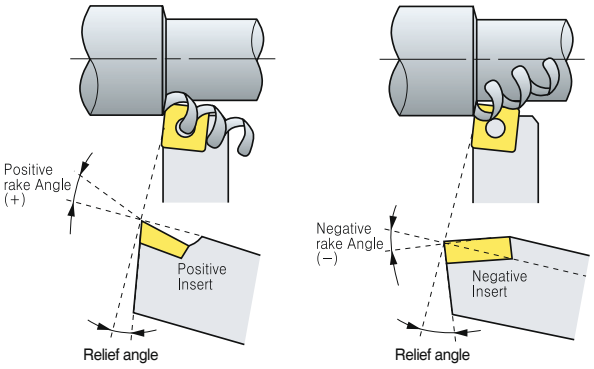


● Rake angle and the direction of chip flow



In order to prevent machined surface from damages Avoid nega, posi combination.

γ : nega(−)λ : posi(+)



Selecting proper tools

• Nowadays, It's very difficult to select the best tools in complicating tooling system and various cutting conditions However, It can be simplified by classifying basic factors below

● Selection of inserts and tool holder

Listed below is the basic factors and choose B according to A

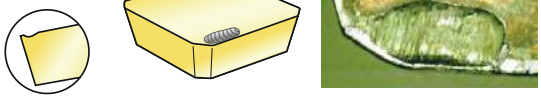
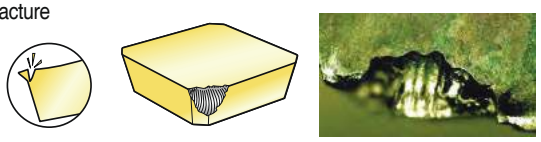
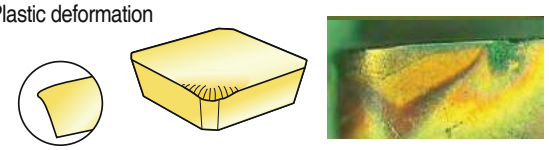
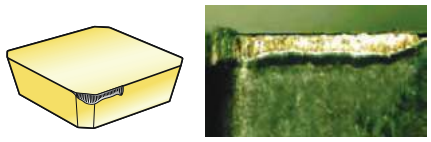
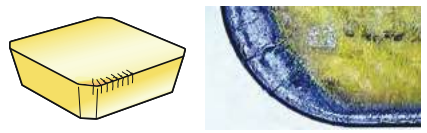
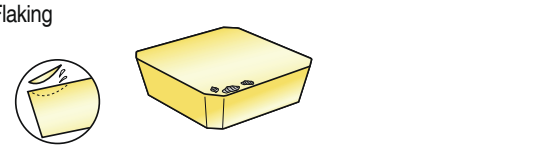
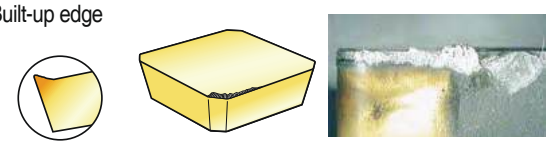
A Basic factors

- · Workpiece material
- · Workpiece shape
- · Workpiece size
- · Hardness of workpiece
- · Surface roughness of workpiece (before machining)
- · Surface finish required
- · Type of lathe machine
- · Condition of lathe machine (rigidity, power etc)
- · Horse power of machine
- · Clamping method of workpiece

B Selection system

① Select as big approach angle as possible
② Select as big shank as possible
③ Select as strong cutting edge of insert as possible
④ Select as big nose radius as possible
⑤ In finishing, Select the insert using many corners
⑥ Select as small insert as possible
⑦ Cutting speed should be determined carefully according to cutting conditions
⑧ Select as deep depth of cut as possible
⑨ Select as fast feed as possible
⑩ Cutting condition should be determined within chip breaker application ranges

Trouble shooting

Tool failure	Cause	Solution
Crater wear 	• Improper grade • Excessive cutting condition	• Choose harder grade • Decrease cutting condition
Fracture 	• Improper grade • Excessive feed • Shorten cutting edge strength • Insufficient rigidity of holder	• Choose tougher grade • Decrease feed • Apply to large honed or chamfered edge • Choose bigger size holder
Plastic deformation 	• Improper grade • Excessive cutting condition • High cutting temperature	• Choose harder grade • Decrease cutting condition • Choose grade which heat conductivity are big
Wear on nose radius (Flank wear) 	• When the hardness of workpiece is too high compare with tool • When machining surface hardened workpiece • Improper grade • Excessive cutting speed • Too small relief angle • Too low feed	• Choose harder grade • Decrease cutting speed • Choose lager relief angle • Increase feed
Thermal crack 	• Expansion and shrinking by cutting temperature • Improper grade (*especially in milling operation)	• Apply to dry cutting (In case of wet cutting, use enough coolant) • Choose tougher grade
Chipping	• Improper grade • Excessive feed • Shorten cutting edge strength • Insufficient rigidity of holder	• Choose tougher grade • Decrease feed • Apply to large honing or chamfer edge • Choose bigger size holder
Notch wear	• Surface hardened workpiece • Friction due to bad chip geometry (Generate vibration)	• Choose harder grade • Improve chip control form large rake angle
Flaking 	• Deposition on cutting edge • Bad chip control	• Improve cutting performance from large rake angle • Apply to chip pocket with big size
Complete breakage	• Unusable condition due to wear off the most parts of cutting edge by progress of wear	• Reduce the feed rate. • Reduce the depth of cut. • Select a tougher grade. • Select a stronger chipbreaker. • Select a thicker insert.
Built-up edge 	• Slow cutting speed • Sticky materials	• Increase cutting speed. • Use more positive rake geometry. • Use tougher grade

Types of tool failure and trouble shooting

Troubles	Causes	Solution																		
		Cutting conditions				Selecting insert grade				Tool shape								Machine clamping		
		Cutting speed	Feed	Depth of cut	Coolant	Select harder grade	Select tougher grade	Select better heat-impact resistance grade	Select better adhesion resistance grade	Chip breaker valuation	Rake angle	Nose radius	Side cutting edge angle	Cutting edge strength Honing	Improving insert precision M class → G class	Improving holder rigidity	Clamping workpiece	Holder overhang	Machine vibration
Poor precision Unstable machining size	Insert precision is variable														●				
	Workpiece, Separation of tool									●	⬆	⬇				●	●	●	●
Cutting edge back thrust is big It's necessary to adjust because machining precision changes during operation.	Flank wear increase					●						⬆							
	Cutting condition is improper	⬇	⬆			●													
Poor surface roughness for finishing Criterion of tool life.	Weakened cutting force by increasing wear of tool	⬇			Wet cutting				●	●	⬆	⬆		⬇	●				
	Cutting edge chipping		⬇	⬇			●			●		⬆		⬆			●	●	●
	Adhesion, built-up edge	⬆	⬆		Wet cutting				●	●	⬆			⬇	●				
	Improper cutting conditions	⬆	⬇	⬇	Wet cutting														
	Improper tool and shape of cutting edge									●		⬆		⬇	●				
	Vibration, chattering	⬇	⬇	⬇	Wet cutting		●			●	⬆	⬇		⬇		●	●	●	●
Cutting heat generation Poor machining precision and short tool life by cutting heat	Improper cutting conditions	⬇	⬇	⬇		●													
	Improper tool and shape of cutting edge									●	⬆			⬇					
Burr, chipping, nap steel, aluminum (burr)	Improper cutting conditions	⬇	⬆		Wet cutting	●													
	Wear on the tool, improper shape of cutting edge								◉	●	⬆	⬇		⬇					
Cast iron (Weak chipping)	Improper cutting conditions		⬇	⬇		●													
	Wear on the tool, improper shape of cutting edge									●	⬆	⬆		⬇		●	●	●	●
Soft steel (nap)	Improper cutting conditions	⬆	⬍		Wet cutting	●													
	Wear on the tool, improper shape of cutting edge								◉	●	⬆			⬇					

⬆: Increase ⬇: Decrease ●: use ◉: Correct use

Tool life criterion

● KS B0813

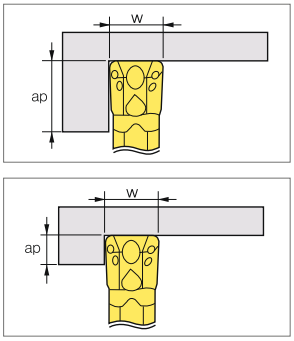
Flank wear width	0.2 mm	Precision light cutting , Finishing in nonferrous alloy
	0.4 mm	Machining special steel
	0.7 mm	General cutting in cast iron, steel etc
	1~1.25 mm	General cutting in cast iron, steel etc
Depth of crater wear	In general 0.05~0.1 mm	

● ISO (B8688)

Tool life criterion	Application
Complete breakage	Machining special steel
Flank wear width VB = 0.3 mm	Even flank wear of cemented carbides, Ceramic tool
VBmax = 0.5 mm	Uneven flank wear
Crater wear width KT = 0.06+0.3fmm (f:mm/rev)	Cemented carbides tool
Criterion by surface roughness 1, 1.6, 2.5, 4, 6.3, 10㎛Ra	When surface roughness is important

Turning and Grooving

Selection of insert



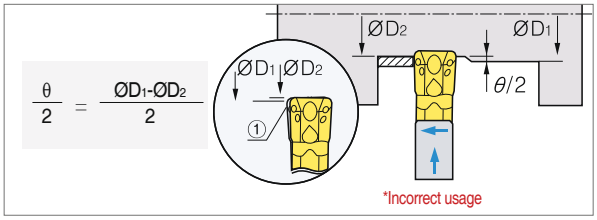
- Feed rate
  - Decide maximum feed rate after considering the Characteristics of insert and machine capabilities (Fmax = W x 0.075)
  - Max feed rate should not be larger than the corner radius of the insert
  - In grooving applications, chip evacuation problems can be remedied by using step feed methods at small intervals
- Depth of cut
  - The minimum depth of cut should be bigger than corner radius of insert
  - When deciding on the max depth of cut please consider the machine's cutting load
  - Depending on the shape of the insert, deflection of workpiece and clearance angle can be changed

Notice for turning

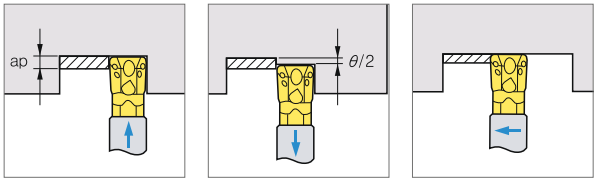
- KGT/MGT tools are designed to incur side cutting force from its clearance angle; this feature gives you advantage over a standard ISO insert
- The standard MGT insert also provides a "wiper" effect to improve surface roughness

Notice for finishing (offset need final quality)

- After desired diameter is grooved, continuous turning operation might cause some deflection of the workpiece. In these cases follow the given formula, offsetting these factors enable the desired diameter that you want

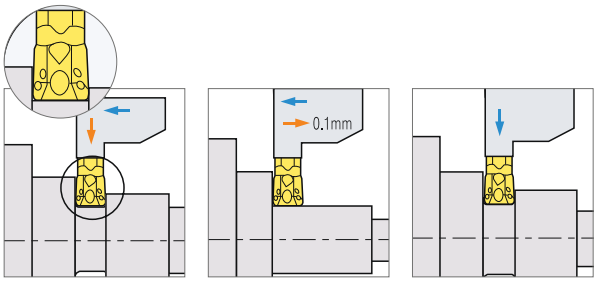


- To eliminate the difference in the machined diameter by utilizing the clearance angle (which is commonly generated during the final turning operation) follow the directions above when machining
  To obtain a good surface roughness without offsetting in an application follows the directions below
  1) Groove to the desired diameter
  2) Pull the tool backs a total distance of θ/2
  3) Continue the external turning operation to desired diameter

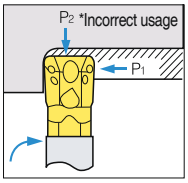


Notice for MGT turning applications

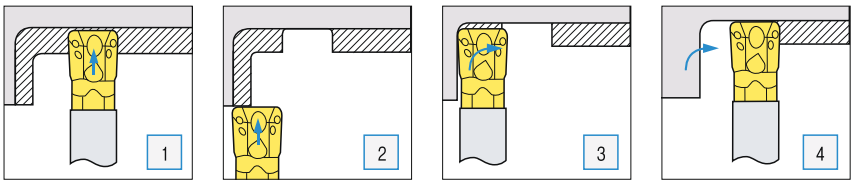
- KGT/MGT tools are available for grooving and turning as a multifunctional tool. When using a M.G.T tool keep in mind that the tool imitates a standard ISO turning application. The application uses a positive clearance angle where a tool's cutting force and depth of cut are all applied in an application. This might create normal wear on the insert, after turning, a grooving process might not meet the desired diameter on the workpiece. To off set this, adjust the tool 0.1 mm and return to the original position of the grooving application



Machining workpiece with a radius bigger than the insert's corner radius

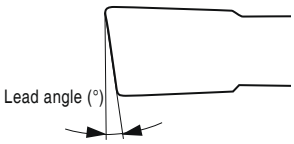
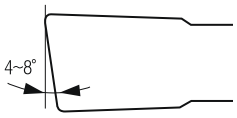
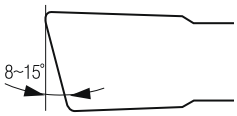


Stabilize your tool pressure. KGT/MGT tools create a cutting load when machining a workpiece with a radius larger than the corner radius of insert (shown in the picture). The unequal cutting force might initially break the insert or holder



Parting off & Grooving

Insert

Lead angle applications	Lead angle 0° (Neutral)	Lead angle 4°~ 8°	Lead angle 8°~15°
			
• 4°- Pipe (Tubing and hollow bar) • 6°- Pipe and solid bar • 8°- Solid bar • 15°- Small diameter Solid bar	• Parting off on solid bar type • Occurring the center stub when parting off • Prevent to be deflected workpiece by cutting direction during parting off • Available for use deep parting depth	• Reduce the center stub when parting off on solid bar type • Reduce the burr when parting off on tubing or hollow bar type	• Parting off on a thin-walled circular hollow section • Reduce the burr and center stub when parting off on small diameter solid bar type

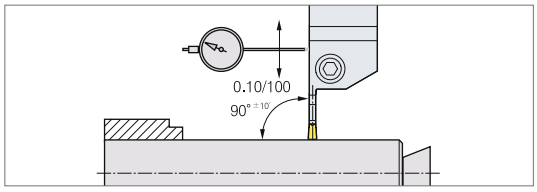
※ Available Inserts: MGMR/L□□□ – □□ – LP/RP, KGMR/L□□□ – □□ – PS/PT
(Lead angle) (Lead angle)

Selection of Insert

- To properly match the insert and cutting condition, the following factors should be considered
  - Width of insert • Chip breaker • Grade and nose R
- The relationship between the cutting width and cutting depth
  - Neutral type, inserts with a 0-degree lead angle are best when used an applications maximum depth of cut
  - In general alloy steel, the maximum depth of cut = W x 0.8
- Insert with lead angle
  - To reduce burrs, we recommend using insert with a lead angle.
  - Insert that have larger lead angles reduce burrs but will also decreases tool life
  - In the case where burrs are acceptable, we recommend using a neutral type insert

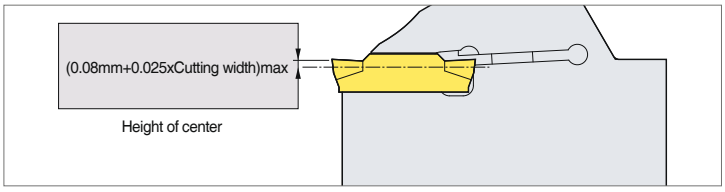
Setting of holders

- The cutting position should be exactly mounted on machined axis in order to create a perpendicular direction or 90 to minimize vibration



Setting of parting off

- The edge height of an insert should be set within ±0.1mm based on the center line
  - Parting off should be done as close to the chuck as possible to minimize vibration



Notice

- Keep a consistent cutting speed and feed
- Use proper amounts of coolant for better performance
- Properly clean the insert pocket before mounting insert

Usage

- If insert is worn, immediately replace with a new insert. This is to prevent the damage on the workpiece
- If the holder seat is worn or damaged, replace with a new one immediately for stable clamping
- Do not grind or regrind the holder seat

Selection of chip breaker

- Our chip breakers are designed to narrow chips during grooving operations. Narrow chips usually offer the following advantages
- Decreases friction between chips and the workpiece. This usually gives a better surface roughness finish
- With better chip flow, a machinist is able to increase feed rates due to a reduced cutting load

Face Grooving Tools

For shallow grooving

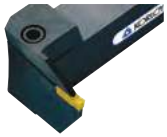
- Economical tools utilizing a double ended cutting edge system
- Newly designed chip breakers that help ensure chip control for various face grooving applications
- KORLOY face grooving tools provide various holder line-ups to give you more options and benefits

MFMN300	MGMN400	Horizontal MGFHR	Vertical MGFVR
Cutting Width 3 mm	Cutting Width 4 mm	Machining Dia. Ø24~200 mm	Machining Dia. Ø24~60 mm

KGMN300~600	Horizontal KGFHR	Vertical KGFVR
Cutting Width 3~6 mm	Machining Dia. Ø34~220 mm	Machining Dia. Ø44~200 mm

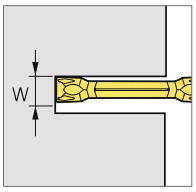
For deep grooving

- These tools are suitable for deep grooving with a single cutting edge (CDX = 25 mm)
- A variety of chip breakers enable a machinist to apply a wide range of functions in machining
- A variety of holders ensures multiple application ranges

FGD	FGM	FMM	Horizontal FGHH	Vertical FGVH
				
Deep face grooving (G class)	Wide face grooving turning (G class)	Wide face grooving turning (M class)	Machining Dia. Ø25~140 mm	Machining Dia. Ø25~140 mm

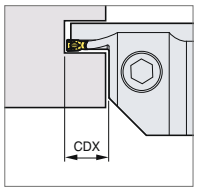
Selection system of holder

- Follow these 3 simple directions to choose the right insert and holder for your application



Insert and holder

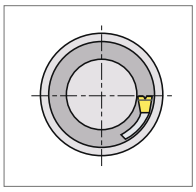
Choose an insert and holder that best applies to your application according to the cutting width and part of workpiece to be machined.



Holder CDX

Choose the holder with the shortest overhang that will still meet the cutting depth required

Notice: To minimize chattering, use the shortest holder according to CDX.

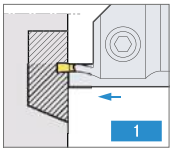


Machining Dia.

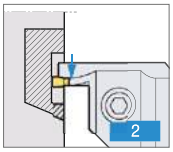
Choose the largest size of shank depending on the initial grooving diameter required in the application

Optimization of face grooving

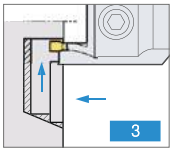
Roughing: When face grooving decreases the cutting speed 40% below a normal face turning operation



• Grooving at the initial diameter

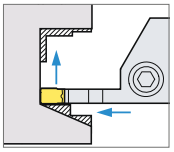


• Face turning away from center

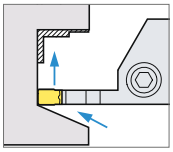


• Face turning to center

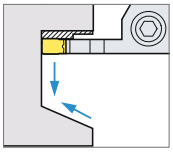
Finishing: When face grooving decreases the cutting speed 40% below a normal face turning operation



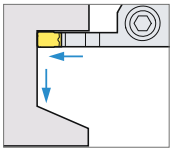
• Grooving at the initial diameter to the final cutting depth and face turning away from center



• Radius operation toward final dimension at the bottom



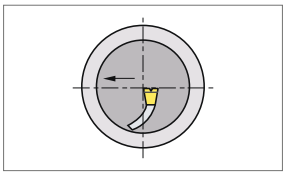
• Face turning to center



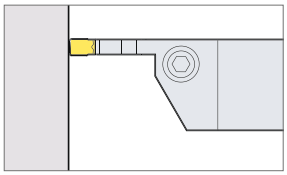
• Grooving for the right dimension you want

Notice for face grooving

- Before machining, check and adjust the following holder position



- Check the cutting edge height at the center of the workpiece
- Machine towards the center and check for burrs



- For better surface roughness, set up the insert in order to perpendicular at center line

The Comparison of Chip Breakers

		Application		KORLOY	KYOCERA	TAEGUTEC	SUMITOMO	SANDVIK	KENNAMETAL	ISCAR	WLATER	MITSUBISHI	SECO	TUNGALLOY
Negative	P	Application	Ultra-Finishing	-	DP(G Class)	FA	FA	PMC	FF(G Class), FV	SF	-	PK(G Class), FY	FF1	TF
				VL	GP	-	FL, FB	QF	UF	PF	NF3	FH, FS, SY	FF2	NS, ZF
			Finishing	VF, VB	PP	FG	LU, FE	PF, XF	FN	NF, SM	NF4	FP		NM, NS, SS
				-	-	SF	SU	61	K	F3P	FP5	LP, SH, SA	MF2	TS, TSF
			Medium to finishing	VC	HQ, CQ	MC	SE	HM	LF, CT	TF	NS6	C(Cermet)		AS
				LP, CP	PQ, CJ	FC	SX	PMC	-	-	MP3	MV	MF5	ZM, AM
			Medium cutting	VM, HM	HK, GS, HS, PS	MP, MT	GU(UG)	QM, SM	MP, MN	PP, TF	NM4, NP5	MA, MH	M3, M5	TQ, TM
				MP	PG	PC	GE, UX	PM, XM	-	M3P	MP5	MP	-	DM, None C/B
			Roughing	B25				-	RP, MR	GN	-	GM, None C/B	M5	TH
				GR	PT, GT, HT, PH	RT	MU, ME, MX	PR, WR	RN, None C/B	R3P	RP5, NM9	GH, RP	MR5, MR6, MR7	THS
			Heavy duty cutting	GH	PX	HB, RH, RX	HG, MP	PR, XMR	RH	NR, HT	RP7, NR4, NRF	HZ	R4, R5	CH
				VH	-	HZ, EH	HP	QR	RM	HR	NRR, NR8	HX	R6, R7, R8, PR6	THS, TRS
				VT	-	HT, HY, HD	HU, HW, HF	HR	MM	T3P	-	HV	PR9, R56, R57, R68	65, TUS
		Low carbon steel	Soft steel	VL	XF, XP, XP-T	SF	FL	LC	-	-	-	FY	-	-
				-	XQ, XS	-	-	-	-	-	-	SY	-	-
		High feed	Wiper	VW	WP, WF	WS	LUW, SEW	WF, WL	FW	WF	NF	SW	FF2, MF2	AFW, FW
				LW	WQ, WE	WT	GUW	WM, WMX	MW	WG	NM	MW	MF5, M3	ASW, SW
				-	-	-	-	WR	RW	-	-	-	R4, R7	-
		Application	Shaft (long bar)	SH	CJ, ST	FS, VF, FX	HM	K	-	-	-	ES	UX	P, S
				KNUX-	KNMX-	KNUX-	-	KNUX-71	-	-	-	KNMX-19	-	KNMX
	M	Stainless steel	Finishing	VP2, MP	MQ, GU, SK	EA, SF	SU, EF	MF, XF	FP, FF	SF, VL, F3M	NF4, FM5	SH, LM	FF1, MF1	SS, SF, SA
			Medium cutting	MM	HU, TK, MS	MP, EM	EX, EG, GU	MM,XM,QM,MMC	MP, UP, MS	PP, TF, M3M	NM4, NR4	MS, GM, MM	MF3, MF4	SM
			Roughing	RM	MU	ET	MU, HM, EM	MR, XMR, MRR	RP, P	MR, R3M	RM5, NRS	MA, ES	MF5, M5	S, SH
	K	Cast iron	Finishing	MP	None C/B, C, KQ	MT	UZ	KF, PMC, XF	T-20, FN	TF	NM, MK5	LK, MA	M4	CF
			Medium cutting	B25, MK	ZS, KG	RT, KT	UX, GZ	KM, XM	UN, RP	GN	NM5, RK5	MK, GK, None C/B	M5	CM, None C/B
			Roughing	-MA, RK	-MA, GC, KH	-MA	-MA	KR, XMR, KRR	MR, S-20, -MA	-MA, NR	-MA, RK7	RK, -MA	MR7	CH
	S	HRSA	Ultra-finishing	VP1	MQ, SK	EA	EF	SF, SGF	FS(G Class) LF(G Class)	SF, PF	NF4	FJ(G Class)	M1	SF
			Finishing	VP2	TK	ML	UP, EG	23.SR, XF, SMC	UP	PP	NFT	LS	MF1	HMM
			Medium cutting	VP3	MS	EM	EX	SM, SMR, XM	MS, GP, P, UN	TF	NMS, NMT	MS	MF4, MR3	HRF
			Roughing	VP4	MU	ET	MU	XMR	RP	MR	NRS, NRT	RS, GJ	MR4	HRM
	N	Aluminium alloy		HA	AH	ML	AX	23	GP, MS	NF, PP	FN2, PF2, MN2, PM2	MJ	MF1	P
Positive	P M K	Application	Finishing	FP	XP, PP	FA, FX	FC	PF, XF	11	PF	FP4	SMG(G Class), FV	FF1	01
				VL, VF	GP	-	FB, LU(FP, FK)	UF	UF	F3P	FK6	SV, FP	F1	PSF, PF
			Medium cutting	HMP	XQ	FG	LB, NF	PM, XM	LF, FP	14	MP4,FM2,FM4,MK4	LP	MF2	PSS
				MP	HQ, GK	PC, FM	NGU, SU, SC	UM, PMC	MP, T-20	SM	FP6,MM4,FM6,RK4	MV	F2, M3	PS
			Roughing	C25	None C/B	MT	MU	PR, UR, XR	MF, GM, -C	19	RP4, RM4, RK6	None C/B, MP	M5	PM
			Wiper	-	WP	-	LUW	WL, WF	FW	WF	PM	SW	-	-
				-	-	WT	SDW	WM, WMX	MW	WG	-	MW	-	-
	M S	Stainless steel For HRSA	Finishing	FS, MS, VP1	CF, GF, GQ	FG	FF, FC, FM	MF, MM, MMC	11, UF, LF	PF	FM4, NM4	FJ (G Class), FM, LM	F1, MF2	PSF, PSS
			Medium to finish cutting	FP, VL, LU	MQ	SA	LB, SI	MR, XR	MF	SM	RM4	MM	M3	PS
			Medium cutting	MU	MF	-	-	SMC	-	M3M	-	None C/B	M5	CM
	K	Cast iron	Medium cutting	MP	HQ	PC	MU	KF, KM	LF	17	FK6	MK	M3	CM
			Roughing	C25	GK	MT	None C/B	KR	MF, UF	19	MK4, RK6	None C/B, -MW	M5	None C/B
	N	Aluminium alloy		AK, AR	AH	FL	AW, AG, AY	AL	HP, LF	AS, AF	PM2	AZ, FS	AL	AL
	High precision bar turning (tolerance class G&E)			KF, KM	FSF, USF, J, A3	GF, FF, GW	FY, FX, FZ	K, F, UM	GH	LF, RF, XL	-	F, SR, SS, SM	UX	JS, J10, JRP, JPP

The Comparison of Grade for Turning

WC Turning Grades

ISO		Grade	KORLOY	Sandvik	SECO	WALTER	Kennametal	ISCAR	Tungaloy	Taegutec	Mitsubishi	Kyocera	Sumitomo	Hitachi	Dijet	Valenite
Turning	P	P35	ST30A		TP3501			IC50M IC54	UX30		UTi20T	PW30	ST30A ST30N	EX35		
	S	S05	H01						KS05F		MT9005					
		S10	H05				KU10	IC07	TH10	K10	RT9010	KW10		WH13S		
		S15		H13A			K313 K68	IC08	KS15F KS20		TF15	GW15				
	K	K05	H01						KS05F		HTi05T		H1	WH05		
		K10	H05		890				TH10	K10	HTi10T	KW10		W10	KT9	
		K15							KS15F							
		K20	G10	H13A	HX		K313 K68	IC20	KS20		UTi20T	GW15	G10	WH20		
	N	N10	H01	H10			KU10		KS05F				H1			
		N20	H05		HX KX	WN23	K313 K68	IC08 IC20	TH10	K10	HTi10	KW10			KT9	
		N30	G10	H13A	883							GW15	G10			

CVD Turning Grades

ISO		Grade	KORLOY	Sandvik	SECO	WALTER	Kennametal	ISCAR	Tungaloy	Taegutec	Mitsubishi	Kyocera	Sumitomo	Hitachi	Dijet	Valenite
Turning	P	P05	NC3205	GC4405 GC4305	TP0501	WKP01G WPP05G	KCP05	IC9105	T9205	TT8105B	UE6105	CA5505 CA510	AC8115P AC805P	HG8010	JC110V	
		P15	NC3215 NC5320	GC4415 GC4315	TP1501 TP1500 TGP25	WPP10S WPP10G WKP13S	KCP10 KC9110	IC8150 IC9105	T9215 T9115	TT8115B LC215P	MC6115 UE6110	CA115P CA515 CA5515	AC8020P AC8015P AC810P	HG8010	JC110V JC215V	SV315 VP5515
		P25	NC3225	GC4425 GC4325	TP2501 TP2500 TGP35	WPP20S WPP20G	KCP25B KC9125 KCP25C	IC8250 IC9205	T9225 T9125	TT8125B LC225P	MC6125 MC6025 UE6020	CA125P CA025P CA525 CA5525	AC8025P AC820P	HG8025 IP2000 GM25	JC215V	SV325 VP5525
		P30	NC3030 NC5330		TGP45	WKP30S WKP23S				TT5100		CA5535	AC830P			VP5535
		P35	NC3235	GC4335 GC4235	TP3501 TP3500	WPP30S WPP30G	KCP30B	IC8350 IC9350	T9235 T9135	TT8135B TT8135 TT7100	MC6135 MC6035	CA530	AC8035P			
	M	M10	NC9115	GC2015	TM1501	WAM10	KCM15B	IC6015		TT9215	MC7015	CA6515	AC6020M AC610M		JC110V	
		M20	NC9125	GC2220 GC2025	TM2501 TM2000	WMP20S WAM20	KCM25B	IC6025	T6125 T6120	TT9225	MC7025	CA6525	AC6030M	IP100S HG8025	JC525X JC5015	VP5525
		M30	NC9135	GC2035	TM3501 TM4000	WAM20	KCM35B		T6130 T6030	TT9235	US735		AC630M	GM8035	JC5015 JC525X	VC901 V1N
	S	S05	SNC805	S205 S05F		WSM01	KCU10			TT3005	MP9005 US905		AC5005S	IP050S	JC605X	VC929
	K	K05~10	NC6310	GC3205	TK1001	WKP01G WKK10S	KCK05	IC5005	T5105	TT7005	MC5105 MC5005 UC5105	CA305 CA4505	AC4010K AC405K	HG3305 HX3305	JC105V	VP1505
		K15	NC6315	GC3210 GC3215	TK1000 TK1001	WAK20 WKK20S	KCK15B	IC5010	T515 T5115	TT7015 LC215K	MC5115 MC5015 UC5115	CA315 CA4515	AC4015K AC415K	HG3315 HX3315	JC110V	VP1510
		K20	NC5320	GC3225	TK2000 TK2001	WAK30 WKP30S	KCK20B		T5125	TT7025		CA320 CA4120	AC420K	HC8010	JC215V	VP1515
	P M K S	15~25	NC5320	GC3225		WKP30S	KCK20B	IC8025	T5125	TT7025		CA4120	AC420K			
		25~35	NC5330			WPP30	KC9140	IC8025		TT5100 TT7100	UE6035		AC630M	IP3000 GM8035	JC325V	SV325 SV230

PVD Turning Grades

ISO		Grade	KORLOY	Sandvik	SECO	WALTER	Kennametal	ISCAR	Tungaloy	Taegutec	Mitsubishi	Kyocera	Sumitomo	Hitachi	Dijet	Valenite
Turning	P	P05	PC8105★			WSM01			AH110			PR1705				VC907
		P10	PC8110			WPP10S			AH710 GH110						JP5003	
		P15	PC8115★	GC1525	TS2000 CP200		KCS10 KCU10 KC5010	IC807 IC907	AH120 AH330 AH630 GH330		VP10RT VP10MF MS6015	PR930				VC927
		P20	PC9030		TS2500				AH725							
		P25	PC5300		CP500	WSM21	KCU25 KC5025	IC908	AH6225 SH725 GH730 SH730	TT9080 TT9020	VP15TF MS7025	PR1225 PR1725 PR1535	AC1030U	IP2000	JC5015	VC905
		P35	PC3035★													
		P40	PC5400		CP600			IC830	AH6235 AH645	TT8080 TT8020	VP20RT			IP3000		
	M	M10	PC8105★	GC1105		WSM01		IC806	AH110					IP050S	JC5003	
		M15	PC8110	GC1115 GC1205	TS2000		KCS10 KCS10B KCU10 KC5010	IC807 IC907	GH110 AH120 AH630 GH330	TT5080	VP05RT MP9005 MP9015	PR930		IP100S		VC929
		M20	PC8115★	GC1210	CP200	WSM10S									JC8015	VC927
		M30~35	PC5300 PC9030 PC9035★	GC1125	TS2500 CP500 CP600	WSM20S WSM21	KCU25 KC5025	IC908	AH725 AH6225 GH730 SH730	TT9080 TT9020	VP15TF VP20MF MS7025 MP9025	PR1725 PR1225 PR1535	AC530U AC1030U		JC5015	VC902 VC901 VC905
		M40	PC5400			WSM30S		IC830	AH6235 AH645	TT8080 TT8020	MP7035		AC6040M			
	S	S05	PC8105	GC1105 GC1205		WSM01		IC806	AH905		MP9005 VP05RT	PR005S PR1305	AC5005S	JP9105	JC5003	
		S10	PC8110				KCS10 KCS10B KCU10 KC5010	IC807 IC907	AH110 SH730 GH110	TT5080 TT3010	MP9015 VP10RT	PR015S PR1310	AC5015S AC510U	JP9115	JC8015	
		S15	PC8115	GC1115 GC1210	TS2000 TS2500	WSM10S										
		S20~25	PC5300 PC9035★	GC1125	CP200 CP500 CP600	WSM20S WSM21	KCU25 KC5025	IC908	AH120 AH725	TT3020 TT9080 TT9020	MS9025 MP9025 VP15TF	PR1535 PR1535	AC5025S AC520U		JC5015	
		S30	PC5400			WSM30S				TT8080 TT8020	VP20RT					
	K	K10	PC8110		TS2000 TS2500 CP200	WNN10	KCS10 KCS10B KCU10 KC5010	IC807 IC907	AH710 GH110 GH330 AH110	TT6080	VP10RT	PR830				VC929 VC903
		K20	PC5300		CP500		KCU25 KC5025	IC908	AH120 GH730	TT9080	VP15TF VP20RT	PR1535	AC1030U AC530U			VC902 VC901 VC905

★ : PVD Coating cermet ★ : New Grade

The Comparison of Grade for Turning

Cermet Turning Grades

ISO		Grade	KORLOY	Sandvik	SECO	WALTER	Kennametal	ISCAR	Tungaloy	Taegutec	Mitsubishi	Kyocera	Sumitomo	Hitachi	Dijet	Valenite
Turning	P	P05					KT1120		NS520						LN10	
		P10	CC1015★ CN1500			WCE10	KT315 KT125	IC20N IC250N		PV3010 CT3000		PV710 TN610 TN6010	T1500Z T1500A		CX50	
		P15		CT5015							AP25N VP25N NX2525		T2000Z		PX75	
		P20	CC1025★ CN2500		TP1020	WTA43 WTA41	KT325 KT1120 KT5020	IC30N IC530N	AT9530 GT9530 J9530 NS9530		NX3035	PV720 PV7020 TN60 TN620 TN6020	T2500Z T2500A	CZ25 CH550	CX75 PX90	VC83
		P25		GC1525							MP3025 VP45N	PV7025				
		P30			TP1030							PV730 PV90 TN90	T3000Z			
	K	K05										PV7005				
		K10	CC1015 CN1500				KT325 KT125			PV3010 CT3000	AP25N NX2525		T1000A			
		K15	CC1025 CN2500	CT5015					AT9530 GT9530 J9530 NS9530			TN60		CZ25		
		K20												CH550		

★ : PVD Coating cermet ★ : New Grade

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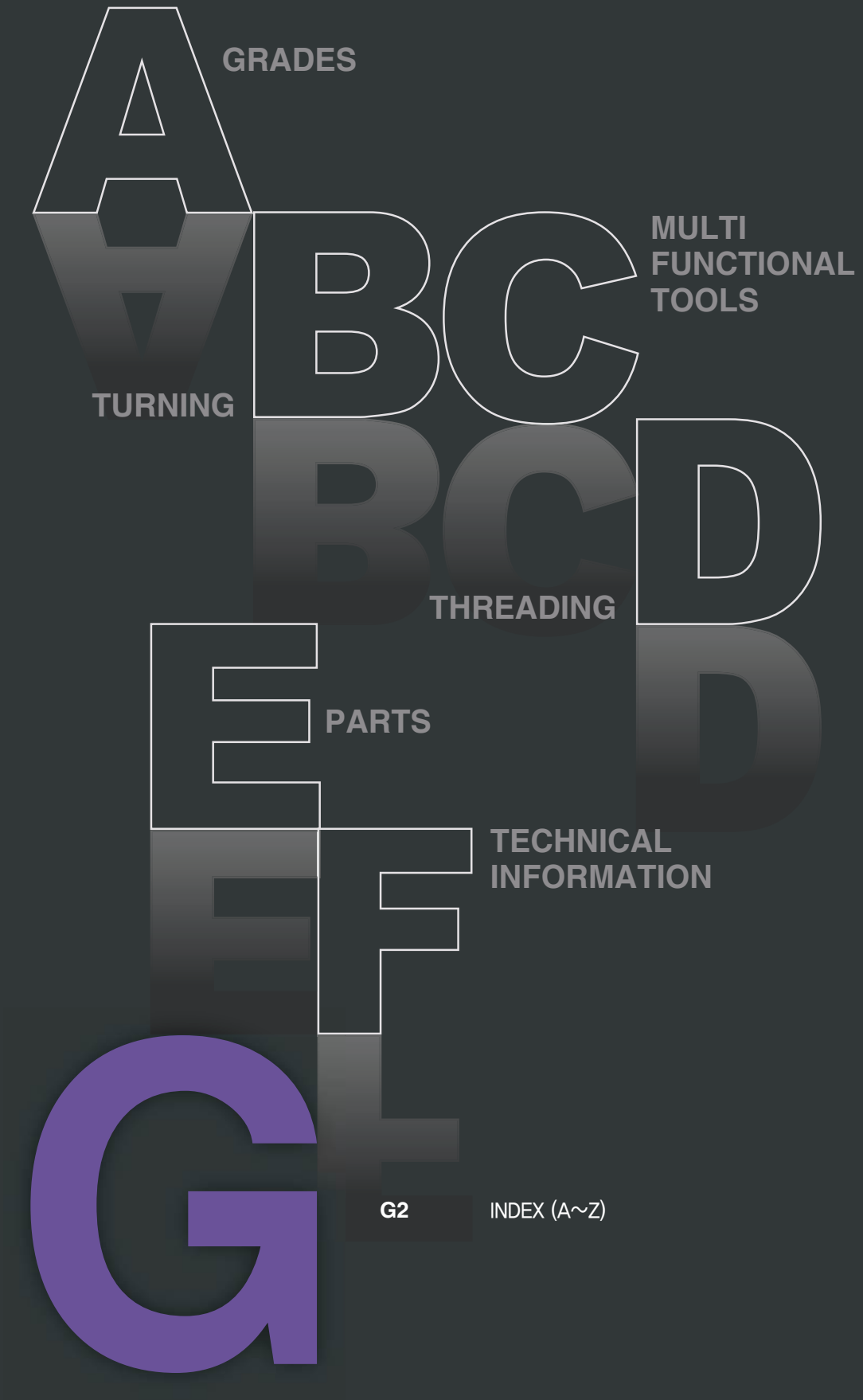

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CNMM-HL	Turning Insert (Negative)	**B11**
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KGMN-TL	Multi Functional Insert (KGT)	**C28**

K

KGMR-LP	Auto Tools Inserts (KGT/MGT)	**B182**
KGMR-LP	Multi Functional Insert (KGT)	**C29**
KGMR-RP	Auto Tools Inserts (KGT/MGT)	**B182**
KGMR-RP	Multi Functional Insert (KGT)	**C29**
KGTB	KGT Blades for Parting off	**C40**
KM○○-DCLNR/L	KM Tooling System	**B229**
KNB	Multi Functional Insert (K-Notch, Metric)	**C18**
KNG	Multi Functional Insert (K-Notch, Metric)	**C18**
KNG	Multi Functional Insert (K-Notch, Inch)	**C19**
KNGP	Multi Functional Insert (K-Notch, Metric)	**C18**
KNGP	Multi Functional Insert (K-Notch, Inch)	**C19**
KNR	Multi Functional Insert (K-Notch, Inch)	**C19**
KNRP	Multi Functional Insert (K-Notch, Inch)	**C19**
KNSR	Multi Functional (K-Notch_Holder)	**C20**
KNT	Multi Functional Insert (K-Notch, Metric)	**C18**
KNUX-11	Turning Insert (Negative)	**B19**
KNUX-12	Turning Insert (Negative)	**B19**
KRGN-A	Multi Functional Insert (KGT)	**C30**
KRGN-CM	Multi Functional Insert (KGT)	**C30**
KRMI-C	Multi Functional Insert (KGT)	**C30**
KRMN-C	Auto Tools Inserts (KGT/MGT)	**B182**
KRMN-C	Multi Functional Insert (KGT)	**C30**
KSEHR/L	Multi Functional (Saw Man-X_Shank-Screw clamping)	**C7**
KSPB	Multi Functional (Saw Man-X_Blade)	**C6**
KSPB-KHP	Multi Functional (Saw Man-X_Blade)	**C8**
KSPH	Multi Functional (Saw Man-X_Shank-Self grip)	**C7**

M

MBBR	Auto Tools (MSB Tool)	**B206**
MBCBR	Auto Tools MSB PLUS	**B191**
MBCFR	Auto Tools MSB PLUS	**B191**
MBCR	Auto Tools MSB PLUS	**B187**
MBCR	Auto Tools (MSB Tool)	**B205**
MBCR/L	Auto Tools MSB PLUS	**B187**
MBER	Auto Tools MSB PLUS	**B187**
MBFR	Auto Tools (MSB Tool)	**B206**
MBR	Auto Tools (MSB Tool)	**B205**
MCBLFR/L	Auto Tools MSB PLUS	**B192**
MCER/L	HSK Tooling System (Cartridge)	**B222**
MCER/L	KM Tooling System (Cartridge)	**B229**
MCER/L	Multi functional (KGT Cartridge)	**C59**
MCFR/L	HSK Tooling System (Cartridge)	**B223**
MCFR/L	Multi functional (KGT Cartridge)	**C59**
MCHR/L	HSK Tooling System	**B222**
MCHR/L	KM Tooling System	**B228**
MCHR/L	Multi functional (KGT Cartridge)	**C56**
MCKNR/L	Multi Lock System	**B107**
MCLNR/L	Multi Lock System	**B107**
MCLNR/L	Multi Lock System	**B130**
MCLR	Auto Tools MSB PLUS	**B192**
MCMNN	Multi Lock System	**B107**
MCRNR/L	Multi Lock System	**B108**
MCVR/L	Multi functional (KGT Cartridge)	**C56**
MDJNR/L	Multi Lock System	**B108**
MDNNN	Multi Lock System	**B108**
MDQNR/L	Multi Lock System	**B109**
MDUNR/L	Multi Lock System	**B130**
Metric Buttress	Threading	**D30**
MFGRR/L	Auto Tools MSB PLUS	**B196**
MFMN	Multi Functional Insert (MGT)	**C47**
MFPR/L	Auto Tools MSB PLUS	**B197**
MGEHR/L	Auto Tools (MGT Plus/MGT) Holder	**B184**
MGEHR/L	Multi Functional Insert (MGT)	**C50**
MGEHR/L	Multi functional (MGT for Aluminum Wheel)	**C61**
MGEHR/L-15	Multi functional (MGT for Aluminum Wheel)	**C62**
MGEUR/L	Multi Functional Insert (MGT)	**C51**
MGEVR/L	Multi Functional Insert (MGT)	**C52**
MGEXR/L	Multi functional (MGT for Aluminum Wheel)	**C63**
MGFHR/L	Multi Functional Insert (MGT)	**C55**
MGFR	Auto Tools (MSB Tool)	**B208**
MGFVR/L	Multi Functional Insert (MGT)	**C55**
MGGN-A	Multi Functional Insert (MGT)	**C48**
MGGN-M	Multi Functional Insert (MGT)	**C47**
MGIUR/L	Multi Functional Insert (MGT)	**C53**
MGIUR/L-MR	Multi functional (MGT for Aluminum Wheel)	**C62**
MGIUR/L-MV	Multi functional (MGT for Aluminum Wheel)	**C63**
MGIVR/L	Multi Functional Insert (MGT)	**C54**
MGIXR/L-MR	Multi functional (MGT for Aluminum Wheel)	**C62**
MGML-PS	Multi Functional Insert (MGT)	**C49**
MGML-PT	Multi Functional Insert (MGT)	**C49**
MGMN-G	Auto Tools Inserts (MGT Plus/MGT)	**B184**
MGMN-G	Multi Functional Insert (MGT)	**C47**
MGMN-L	Multi Functional Insert (MGT)	**C47**
MGMN-M	Auto Tools Inserts (MGT Plus/MGT)	**B184**
MGMN-M	Multi Functional Insert (MGT)	**C47**
MGMN-R	Multi Functional Insert (MGT)	**C48**

M

MGMN-T	Multi Functional Insert (MGT)	**C48**
MGMR-PS	Multi Functional Insert (MGT)	**C49**
MGMR-PT	Multi Functional Insert (MGT)	**C49**
MGR	Auto Tools (MSB Tool)	**B207**
MGRR	Auto Tools (MSB Tool)	**B208**
MGSR	Auto Tools MSB PLUS	**B193**
MGSR/L	Auto Tools MSB PLUS	**B194**
MHRNC	Auto Tools MSB PLUS	**B201**
MHRRC	Auto Tools MSB PLUS	**B200**
MHRSC	Auto Tools MSB PLUS	**B199**
MPPR	Auto Tools MSB PLUS	**B196**
MPPR/L	Auto Tools MSB PLUS	**B196**
MRGN-A	Multi Functional Insert (MGT)	**C49**
MRGN-A	Multi functional (MGT for Aluminum Wheel)	**C61**
MRMN-M	Multi Functional Insert (MGT)	**C49**
MSBNR/L	Multi Lock System	**B109**
MSDNN	Multi Lock System	**B109**
MSKNR/L	Multi Lock System	**B110**
MSKNR/L	Multi Lock System	**B130**
MSRNR/L	Multi Lock System	**B110**
MSSNR/L	Multi Lock System	**B111**
MTENN	Multi Lock System	**B111**
MTFNR/L	Multi Lock System	**B111**
MTFNR/L	Multi Lock System	**B131**
MTGNR/L	Multi Lock System	**B112**
MTHR	Auto Tools MSB PLUS	**B198**
MTHR/L	Auto Tools MSB PLUS	**B198**
MTJNR/L	Multi Lock System	**B112**
MTR	Auto Tools (MSB Tool)	**B209**
MVGN	Multi Functional Insert (MGT)	**C61**
MVJNR/L	Multi Lock System	**B112**
MVQNR/L	Multi Lock System	**B113**
MVUNR/L	Multi Lock System	**B131**
MVVNN	Multi Lock System	**B113**
MWLNR/L	Multi Lock System	**B113**
MWLNR/L	Multi Lock System	**B131**

N

National Pipe Thread	Threading	**D23**
National Pipe Threads-Dryseal	Threading	**D24**
NC3205	CVD Coated Grades	**A5**
NC3215	CVD Coated Grades	**A5**

N

NC3225	CVD Coated Grades	**A5**
NC3235	CVD Coated Grades	**A5**
NC6310	CVD Coated Grades	**A6**
NC6315	CVD Coated Grades	**A6**
NC9115	CVD Coated Grades	**A7**
NC9125	CVD Coated Grades	**A7**
NC9135	CVD Coated Grades	**A7**
ND3000	Diamond Coated Grades	**A16**
NFTF	Multi Functional Insert (Fine Tool)	**C15**
NFTG	Multi Functional Insert (Fine Tool)	**C14**
NFTIH	Multi Functional Insert (Fine Tool)	**C15**
NFTT	Multi Functional Insert (Fine Tool)	**C14**

P

Partial profile 55°	Threading	**D12**
Partial profile 60°	Threading	**D11**
PC5300	PVD Coated Grades	**A10**
PC8105	PVD Coated Grades	**A9**
PC8110	PVD Coated Grades	**A9**
PC8115	PVD Coated Grades	**A9**
PC9030	PVD Coated Grades	**A11**
PC9035	PVD Coated Grades	**A11**
PCBNR/L	Lever Lock System	**B96**
PCBNR/L	Save Turn Holders	**B155**
PCKNR/L	Lever Lock System	**B96**
PCLNR/L	Lever Lock System	**B97**
PCLNR/L	Lever Lock System	**B127**
PCLNR/L	KHP Coolant	**B148**
PCLNR/L	Save Turn Holders	**B155**
PCLNR/L	Save Turn Boring Bars	**B158**
PCLNR/L	HSK Tooling System	**B220**
PCLNR/L	KM Tooling System	**B227**
PCMNN	HSK Tooling System	**B220**
PCMNN	KM Tooling System	**B227**
PD1005	DLC Coated Grades	**A17**
PD1010	DLC Coated Grades	**A17**
PDJNR/L	Lever Lock System	**B97**
PDJNR/L	KHP Coolant	**B148**
PDJNR/L	Save Turn Holders	**B155**
PDJNR/L	HSK Tooling System	**B220**
PDJNR/L	KM Tooling System	**B228**
PDNNN	HSK Tooling System	**B220**
PDNNN	KM Tooling System	**B228**

P

PDNNR/L	Lever Lock System	**B98**
PDNNR/L	Save Turn Holders	**B156**
PDQNR/L	Save Turn Holders	**B156**
PDSNR/L	Lever Lock System	**B127**
PDUNR/L	Lever Lock System	**B127**
PDUNR/L	Save Turn Boring Bars	**B158**
PDZNR/L	Save Turn Boring Bars	**B159**
PGMN-GM	Multi Functional Insert (MGT Plus/MGT)	**C45**
PGMN-MM	Auto Tools Inserts (MGT Plus/MGT)	**B184**
PGMN-MM	Multi Functional Insert (MGT Plus/MGT)	**C45**
PGMN-MN	Auto Tools Inserts (MGT Plus/MGT)	**B184**
PRDCN	Lever Lock System	**B98**
PRDCN	HSK Tooling System	**B221**
PRGCR/L	Lever Lock System	**B99**
PRGCR/L	HSK Tooling System	**B221**
PRMN-RM	Auto Tools Inserts (MGT Plus/MGT)	**B184**
PRMN-RM	Multi Functional Insert (MGT Plus/MGT)	**C45**
PSBNR/L	Lever Lock System	**B99**
PSBNR/L	Save Turn Holders	**B156**
PSDNN	Lever Lock System	**B100**
PSDNN	Save Turn Holders	**B157**
PSKNR/L	Lever Lock System	**B100**
PSKNR/L	Lever Lock System	**B128**
PSKNR/L	Save Turn Holders	**B157**
PSKNR/L	Save Turn Boring Bars	**B159**
PSSNR/L	Lever Lock System	**B101**
PSSNR/L	KHP Coolant	**B148**
PSSNR/L	Save Turn Holders	**B157**
PTFNR/L	Lever Lock System	**B101**
PTFNR/L	Lever Lock System	**B128**
PTGNR/L	Lever Lock System	**B102**
PTTNR/L	Lever Lock System	**B102**
PWLNR/L	Lever Lock System	**B102**
PWLNR/L	Lever Lock System	**B128**
PWLNR/L	KHP Coolant	**B149**
PWLNR/L	Save Turn Holders	**B158**

R

RCGT-AK	Aluminum Insert	**B77**
RCGT-AR	Aluminum Insert	**B77**
RCMT-VM	Turning Insert (Positive)	**B54**
RCMX	Turning Insert (Positive)	**B54**
RNMG-B25	Turning Insert (Negative)	**B19**

R

RNMM-GR	Turning Insert (Negative)	**B36**
Round DIN405	Threading	**D24**
RPGR-F	Turning Insert (Positive)	**B62**
RPMR-M	Turning Insert (Positive)	**B62**

S

SBBR/L	Auto Tools Inserts (Blade)	**B176**
SBCR/L	Auto Tools Inserts (Blade)	**B176**
SBGR/L	Auto Tools Inserts (Blade)	**B176**
SBHR/L	Auto Tools (Blade)	**B177**
SBHR/L-X (Sub spindle)	Auto Tools (Blade)	**B177**
SBR/L	Auto Tools Inserts (multi utility)	**B179**
SBTR/L	Auto Tools Inserts (Blade)	**B176**
SCACR/L	Screw on System	**B114**
SCACR/L	Auto Tools (ISO) Holder	**B168**
SCGT-AK	Aluminum Insert	**B78**
SCGT-AR	Aluminum Insert	**B78**
SCLCR/L	Screw on System	**B114**
SCLCR/L	Screw on System	**B132**
SCLCR/L	Compact Mini	**B142**
SCLCR/L	Auto Tools (KHP)	**B152**
SCLCR/L	Auto Tools (ISO) Holder	**B168**
SCLCR/L	Auto Tools (KHP) Holder	**B174**
SCLPR/L	Screw on System	**B133**
SCMT-C25	Turning Insert (Positive)	**B55**
SCMT-FP	Turning Insert (Positive)	**B55**
SCMT-HMP	Turning Insert (Positive)	**B55**
SCMT-MP	Turning Insert (Positive)	**B55**
SCMT-VF	Turning Insert (Positive)	**B55**
SCMT-VL	Turning Insert (Positive)	**B55**
SCR/L	Auto Tools Inserts (multi utility)	**B179**
SDACR/L	Screw on System	**B114**
SDJCR/L	Screw on System	**B115**
SDJCR/L	Auto Tools (KHP)	**B152**
SDJCR/L	Auto Tools (ISO) Holder	**B168**
SDJCR/L	Auto Tools (KHP) Holder	**B174**
SDNCN	Screw on System	**B115**
SDNCN	Auto Tools (ISO) Holder	**B169**
SDQCR/L	Screw on System	**B134**
SDUCR/L	Screw on System	**B135**
SDZCR/L	Screw on System	**B136**
SGBR/L	Auto Tools Inserts (multi utility)	**B180**
SGR/L	Auto Tools Inserts (multi utility)	**B179**

S

SL (Sleeve)	Sleeve	**B144**
SL (Sleeve)	Auto Tools (MSB Tool)	**B209**
SMBB	Multi Functional (Saw Man_Blade)	**C11**
SMBB	Multi Functional (Saw Man-X_Block)	**C6**
SMBB-KHP	Multi Functional (Saw Man-X_Block)	**C8**
SNGA	Turning Insert (Negative)	**B24**
SNGG	Turning Insert (Negative)	**B23**
SNGG-VP3	Turning Insert (Negative)	**B25**
SNGN	Turning Insert (Negative)	**B26**
SNGX	Turning Insert (Negative)	**B27**
SNMA	Turning Insert (Negative)	**B23**
SNMG-B25	Turning Insert (Negative)	**B22**
SNMG-CP	Turning Insert (Negative)	**B20**
SNMG-GR	Turning Insert (Negative)	**B22**
SNMG-HA	Turning Insert (Negative)	**B26**
SNMG-HM	Turning Insert (Negative)	**B21**
SNMG-LP	Turning Insert (Negative)	**B20**
SNMG-MK	Turning Insert (Negative)	**B23**
SNMG-MM	Turning Insert (Negative)	**B24**
SNMG-MP	Turning Insert (Negative)	**B21**
SNMG-RK	Turning Insert (Negative)	**B24**
SNMG-RM	Turning Insert (Negative)	**B25**
SNMG-VB	Turning Insert (Negative)	**B20**
SNMG-VC	Turning Insert (Negative)	**B20**
SNMG-VF	Turning Insert (Negative)	**B20**
SNMG-VL	Turning Insert (Negative)	**B20**
SNMG-VM	Turning Insert (Negative)	**B21**
SNMG-VP2	Turning Insert (Negative)	**B25**
SNMG-VP3	Turning Insert (Negative)	**B25**
SNMG-VP4	Turning Insert (Negative)	**B25**
SNMG-VQ	Turning Insert (Negative)	**B22**
SNMG-VR	Turning Insert (Negative)	**B24**
SNMM-GH	Turning Insert (Negative)	**B27**
SNMM-GR	Turning Insert (Negative)	**B27**
SNMM-HG	Turning Insert (Negative)	**B28**
SNMM-HL	Turning Insert (Negative)	**B27**
SNMM-HP	Turning Insert (Negative)	**B27**
SNMM-HV	Turning Insert (Negative)	**B28**
SNMM-HX	Turning Insert (Negative)	**B28**
SNMM-VH	Turning Insert (Negative)	**B28**
SNMM-VT	Turning Insert (Negative)	**B28**
SNMX	Turning Insert (Negative)	**B26**
SNUN	Turning Insert (Negative)	**B26**
SPB/SPB-S	Multi Functional Insert (Saw Man_Blade)	**C11**

S

SPGA	Turning Insert (Positive)	**B57**
SPGN	Turning Insert (Positive)	**B57**
SPGN	PCD Insert	**B85**
SPGR-F	Turning Insert (Positive)	**B56**
SPGR-M	Turning Insert (Positive)	**B56**
SPGT	Turning Insert (Positive)	**B57**
SPH/SPH-S	Multi Functional (Saw Man_Holder)	**C12**
SPMR-F	Turning Insert (Positive)	**B56**
SPMR-M	Turning Insert (Positive)	**B56**
SPMT-VF	Turning Insert (Positive)	**B56**
SPMT-VL	Turning Insert (Positive)	**B56**
SPUN	Turning Insert (Positive)	**B56**
SRCP...B	Bearing Solutions	**B213**
SRDCN	Screw on System	**B115**
SRGCR/L	Screw on System	**B116**
SRGCR/L	KHP Coolant	**B149**
SRGP...E	Bearing Solutions	**B212**
SRGP...F	Bearing Solutions	**B213**
SSBCR/L	Screw on System	**B116**
SSDCN	Screw on System	**B116**
SSKCR/L	Screw on System	**B117**
SSKCR/L	Screw on System	**B136**
SSKCR/L	Screw on System	**B234**
SSKP...B	Bearing Solutions	**B213**
SSKPR/L	Screw on System	**B136**
SSSCR/L	Screw on System	**B117**
SSSCR/L	Screw on System	**B235**
STACR/L	Screw on System	**B117**
STACR/L	Auto Tools (ISO) Holder	**B169**
STFCR/L	Screw on System	**B118**
STFCR/L	Screw on System	**B137**
STFCR/L	Screw on System	**B235**
STFPR/L	Screw on System	**B138**
STGCR/L	Screw on System	**B118**
STLBR/L	Compact Mini	**B142**
STR/L	Auto Tools Inserts (multi utility)	**B180**
STTCR/L	Screw on System	**B118**
STTCR/L	Screw on System	**B236**
Stub ACME	Threading	**D26**
STUBR/L	Compact Mini	**B142**
STUPR/L	Compact Mini	**B143**
STWCR/L	Screw on System	**B236**
STWPR/L	Screw on System	**B139**
SVABR/L	Screw on System	**B119**

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SVACR/L	Auto Tools (ISO) Holder	**B169**
SVAPR/L	Auto Tools (ISO) Holder	**B170**
SVHBR/L	Screw on System	**B119**
SVJBR/L	Screw on System	**B119**
SVJBR/L	KHP Coolant	**B149**
SVJBR/L	Auto Tools (ISO) Holder	**B170**
SVJCR/L	Screw on System	**B120**
SVJCR/L	Screw on System	**B139**
SVJCR/L	Auto Tools (KHP)	**B152**
SVJCR/L	Auto Tools (ISO) Holder	**B170**
SVJCR/L	Auto Tools (KHP) Holder	**B174**
SVJPR/L	Auto Tools (ISO) Holder	**B171**
SVPBR/L	HSK Tooling System	**B221**
SVQBR/L	Screw on System	**B139**
SVQCR/L	Screw on System	**B140**
SVUBR/L	Screw on System	**B140**
SVUCR/L	Screw on System	**B140**
SVVBN	Screw on System	**B120**
SVVBN	HSK Tooling System	**B221**
SVVCN	Screw on System	**B120**
SVVPN	Auto Tools (ISO) Holder	**B171**
SWLCR/L	Screw on System	**B141**
SWUBR/L	Compact Mini	**B144**
SXGNR/L	Auto Tools Holder (multi utility)	**B180**

T

T-2NU-CNGA	cBN Insert	**B82**
T-2NU-DCGW	cBN Insert	**B83**
T-2NU-VBGW	cBN Insert	**B83**
T-2NU-VCGW	cBN Insert	**B83**
T-2NU-VNGA	cBN Insert	**B82**
T-CNMA	cBN Insert	**B84**
T-DCGW	cBN Insert	**B84**
T-TPGB	cBN Insert	**B84**
T-VNMA	cBN Insert	**B84**
TBGT	Turning Insert (Positive)	**B58**
TBH	Multi functional (Grooving Tools)	**C71**
TBMT	Turning Insert (Positive)	**B58**
TCGT-AK	Aluminum Insert	**B79**
TCGT-AR	Aluminum Insert	**B79**
TCGT-FS	Turning Insert (Positive)	**B60**
TCGT-KF	Turning Insert (Positive)	**B60**
TCGT-VP1	Turning Insert (Positive)	**B60**

T

TCMT-C25	Turning Insert (Positive)	**B60**
TCMT-FP	Turning Insert (Positive)	**B59**
TCMT-HMP	Turning Insert (Positive)	**B59**
TCMT-MP	Turning Insert (Positive)	**B59**
TCMT-VF	Turning Insert (Positive)	**B59**
TCMT-VL	Turning Insert (Positive)	**B59**
TCMT-VP1	Turning Insert (Positive)	**B60**
TNGA	Turning Insert (Negative)	**B32**
TNGG	Turning Insert (Negative)	**B32**
TNGG-SC	Turning Insert (Negative)	**B31**
TNGG-VP3	Turning Insert (Negative)	**B34**
TNGN	Turning Insert (Negative)	**B35**
TNMA	Turning Insert (Negative)	**B32**
TNMA	cBN Insert	**B84**
TNMG-B25	Turning Insert (Negative)	**B31**
TNMG-CP	Turning Insert (Negative)	**B29**
TNMG-GR	Turning Insert (Negative)	**B31**
TNMG-HA	Turning Insert (Negative)	**B34**
TNMG-HM	Turning Insert (Negative)	**B30**
TNMG-LP	Turning Insert (Negative)	**B29**
TNMG-LW	Turning Insert (Negative)	**B35**
TNMG-MK	Turning Insert (Negative)	**B32**
TNMG-MM	Turning Insert (Negative)	**B33**
TNMG-MP	Turning Insert (Negative)	**B30**
TNMG-RK	Turning Insert (Negative)	**B33**
TNMG-RM	Turning Insert (Negative)	**B34**
TNMG-VB	Turning Insert (Negative)	**B29**
TNMG-VC	Turning Insert (Negative)	**B30**
TNMG-VF	Turning Insert (Negative)	**B29**
TNMG-VL	Turning Insert (Negative)	**B29**
TNMG-VM	Turning Insert (Negative)	**B30**
TNMG-VP2	Turning Insert (Negative)	**B34**
TNMG-VP3	Turning Insert (Negative)	**B34**
TNMG-VP4	Turning Insert (Negative)	**B34**
TNMG-VQ	Turning Insert (Negative)	**B31**
TNMG-VR	Turning Insert (Negative)	**B33**
TNMG-VW	Turning Insert (Negative)	**B35**
TNMM-GH	Turning Insert (Negative)	**B36**
TNMX	Turning Insert (Negative)	**B36**
TNMX-SH	Turning Insert (Negative)	**B35**
TNMX-SR	Turning Insert (Negative)	**B35**
TOEH	Turning Insert (Positive)	**B61**
TPGB	cBN Insert	**B84**
TPGH	Turning Insert (Positive)	**B64**

T

TPGN	Turning Insert (Positive)	**B63**
TPGN	PCD Insert	**B85**
TPGR-M	Turning Insert (Positive)	**B63**
TPGT	Turning Insert (Positive)	**B64**
TPGW	PCD Insert	**B85**
TPGX	Turning Insert (Positive)	**B64**
TPMR-F	Turning Insert (Positive)	**B62**
TPMT-FP	Turning Insert (Positive)	**B61**
TPMT-MP	Turning Insert (Positive)	**B62**
TPMT-VF	Turning Insert (Positive)	**B62**
TPMT-VL	Turning Insert (Positive)	**B62**
TPUN	Turning Insert (Positive)	**B63**
Trapez DIN 103	Threading	**D25**

U

UNJ	Threading	**D27**

V

VBGT	Turning Insert (Positive)	**B66**
VBGT-AK	Aluminum Insert	**B80**
VBGT-AR	Aluminum Insert	**B80**
VBGT-FS	Turning Insert (Positive)	**B66**
VBGT-KF	Turning Insert (Positive)	**B67**
VBGT-KM	Turning Insert (Positive)	**B67**
VBGT-VP1	Turning Insert (Positive)	**B66**
VBGW	PCD Insert	**B85**
VBMT	Turning Insert (Positive)	**B66**
VBMT	PCD Insert	**B85**
VBMT-FP	Turning Insert (Positive)	**B65**
VBMT-HMP	Turning Insert (Positive)	**B65**
VBMT-MP	Turning Insert (Positive)	**B65**
VBMT-VB	Turning Insert (Positive)	**B65**
VBMT-VF	Turning Insert (Positive)	**B65**
VBMT-VL	Turning Insert (Positive)	**B65**
VBMT-VP1	Turning Insert (Positive)	**B66**
VBMW	cBN Insert	**B84**
VCET-KF	Turning Insert (Positive)	**B70**
VCET-KM	Turning Insert (Positive)	**B70**
VCGT-AK	Aluminum Insert	**B81**
VCGT-AM	Aluminum Insert	**B81**
VCGT-AR	Aluminum Insert	**B81**
VCGT-FS	Turning Insert (Positive)	**B69**

V

VCGT-KF	Turning Insert (Positive)	**B70**
VCGT-KM	Turning Insert (Positive)	**B70**
VCGT-MS	Turning Insert (Positive)	**B69**
VCGT-VP1	Turning Insert (Positive)	**B69**
VCGT-VP1	Turning Insert (Positive)	**B70**
VCGX-VP1	Turning Insert (Positive)	**B70**
VCMT	PCD Insert	**B85**
VCMT-FP	Turning Insert (Positive)	**B68**
VCMT-HMP	Turning Insert (Positive)	**B68**
VCMT-MP	Turning Insert (Positive)	**B68**
VCMT-MP	Turning Insert (Positive)	**B68**
VCMT-VF	Turning Insert (Positive)	**B68**
VCMT-VL	Turning Insert (Positive)	**B68**
VCMT-VP1	Turning Insert (Positive)	**B68**
VNGG-HA	Turning Insert (Negative)	**B38**
VNGG-VP3	Turning Insert (Negative)	**B38**
VNMA	cBN Insert	**B84**
VNMG-CP	Turning Insert (Negative)	**B37**
VNMG-HM	Turning Insert (Negative)	**B37**
VNMG-LP	Turning Insert (Negative)	**B37**
VNMG-MK	Turning Insert (Negative)	**B38**
VNMG-MM	Turning Insert (Negative)	**B38**
VNMG-MP	Turning Insert (Negative)	**B37**
VNMG-RM	Turning Insert (Negative)	**B38**
VNMG-VB	Turning Insert (Negative)	**B37**
VNMG-VC	Turning Insert (Negative)	**B37**
VNMG-VF	Turning Insert (Negative)	**B37**
VNMG-VL	Turning Insert (Negative)	**B37**
VNMG-VM	Turning Insert (Negative)	**B38**
VNMG-VP3	Turning Insert (Negative)	**B38**
VNMG-VQ	Turning Insert (Negative)	**B38**
VPET-KM	Turning Insert (Positive)	**B71**
VPET-KR	Turning Insert (Positive)	**B71**
VPGT-VP1	Turning Insert (Positive)	**B71**
VTH	Vertical Type Holders	**D34**

W

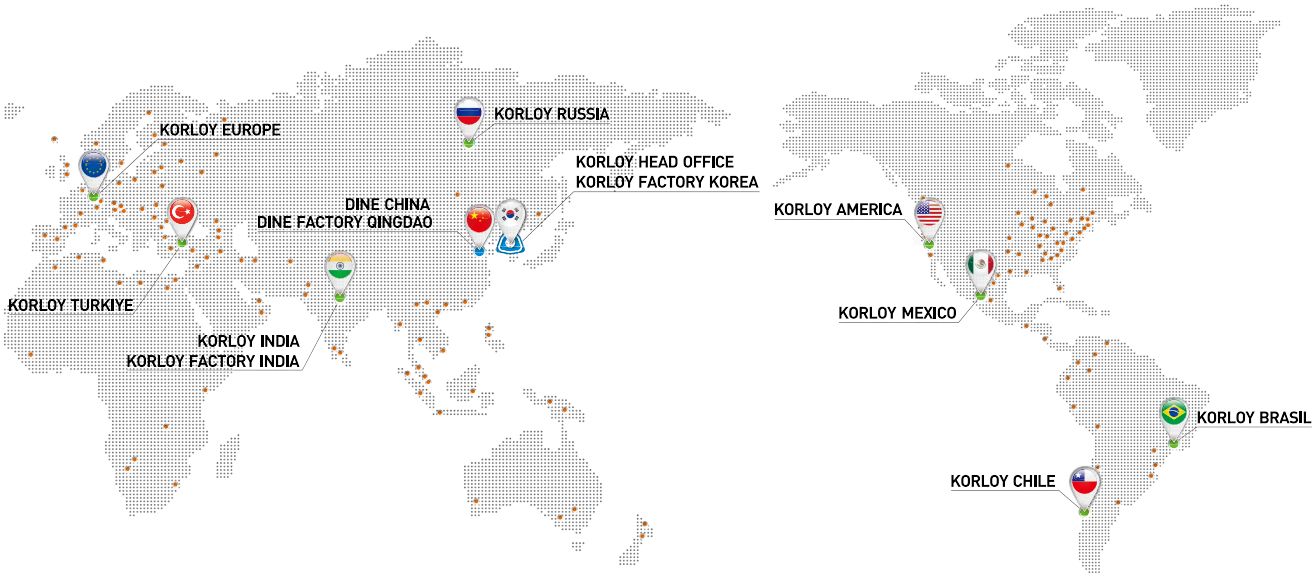
WBGT	Turning Insert (Positive)	**B72**
Whitworth	Threading	**D19**
WNGG-VP3	Turning Insert (Negative)	**B42**
WNMA	Turning Insert (Negative)	**B41**
WNMG-B25	Turning Insert (Negative)	**B40**
WNMG-CP	Turning Insert (Negative)	**B39**

W

WNMG-GR	Turning Insert (Negative)	**B40**
WNMG-HA	Turning Insert (Negative)	**B43**
WNMG-HM	Turning Insert (Negative)	**B40**
WNMG-LP	Turning Insert (Negative)	**B39**
WNMG-LW	Turning Insert (Negative)	**B43**
WNMG-MK	Turning Insert (Negative)	**B41**
WNMG-MM	Turning Insert (Negative)	**B42**
WNMG-MP	Turning Insert (Negative)	**B40**
WNMG-RK	Turning Insert (Negative)	**B41**
WNMG-RM	Turning Insert (Negative)	**B42**
WNMG-VB	Turning Insert (Negative)	**B39**
WNMG-VC	Turning Insert (Negative)	**B39**
WNMG-VF	Turning Insert (Negative)	**B39**
WNMG-VL	Turning Insert (Negative)	**B39**
WNMG-VM	Turning Insert (Negative)	**B40**
WNMG-VP2	Turning Insert (Negative)	**B42**
WNMG-VP3	Turning Insert (Negative)	**B42**
WNMG-VP4	Turning Insert (Negative)	**B42**
WNMG-VQ	Turning Insert (Negative)	**B41**
WNMG-VR	Turning Insert (Negative)	**B41**
WNMG-VW	Turning Insert (Negative)	**B43**
WNMM-B25	Turning Insert (Negative)	**B43**
WNMX-SH	Turning Insert (Negative)	**B43**
WNMX-SR	Turning Insert (Negative)	**B43**
WTENN	Wedge Clamp System	**B103**
WTJNR/L	Wedge Clamp System	**B103**
WTXNR/L	Wedge Clamp System	**B103**
WWLNR/L	Wedge Clamp System	**B104**

KORLOY Global Network

We stand to be the Global Top Manufacturer. Korea's Best. World's Best



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